



# Chapter 7

## The Trait Approach to Personality

### Key themes

- The history of trait approaches to personality
- Defining traits
- Lexical hypothesis approach to personality traits
- The contribution of Gordon Allport
- Raymond Cattell and the Sixteen Personality Factor Inventory
- Hans Eysenck and the three-factor structure
- The Big Five
- Evaluating trait approaches

### Learning outcomes

After studying this chapter you should:

- Be able to describe the nomothetic approach to personality research
- Appreciate the long history of attempts to describe and explain differences in personality
- Understand what is meant by the lexical hypothesis
- Be familiar with the approach to data analysis employed by trait theorists
- Be aware of the contribution of Gordon Allport to the trait approach
- Appreciate the contribution of Raymond Cattell to the trait approach
- Know about Hans Eysenck's attempts to uncover the basic structure of personality
- Understand the approaches that have resulted in the identification of the Big Five personality traits

## Introduction

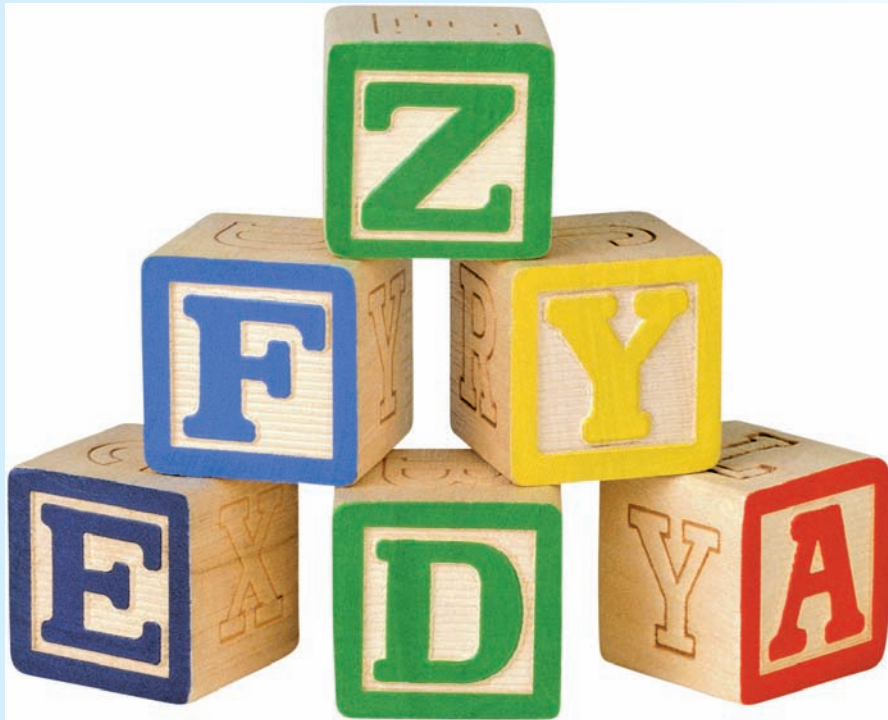
**Easygoing, intelligent, funny, caring**, professional man, aged 44, **good in a crisis**, seeks **warm, friendly, intelligent** woman of a similar age. Enjoys good food, wine, cinema and theatre.

**Vibrant, charismatic, passionate, energetic** sportswoman, aged 32, **loves all outdoor activities, foreign travel**, cooking, reading and gardening seeks country-dwelling male with similar interests.

At this point, you may be wondering what lonely-hearts advertisements are doing in a textbook on personality. However, we want you to think about the image of the individuals that these advertisements convey. Most of us are good at doing this; from a short description of an individual, we can build up a mental picture of them and make decisions about which individuals we are attracted to and might like to meet and which hold no appeal for us. What we are doing is using our knowledge of personality traits to build up an image of the person from their description. We have highlighted the

words that label personality traits in the advertisements above, and it is worth taking a moment to reflect on what you understand by each of them and how you value them. Is the picture of a vibrant, charismatic, passionate, energetic woman one you value you positively or one you find unappealing?

What these types of adverts suggest is that from a few personality traits and statements about interests, we may be able to build up an image of the individual. This in effect is what trait personality theorists aim to do, but in a more rigorous, scientific way. Traits theorists employ the **nomothetic** approach to personality that we covered in Chapter 1. The aim is to identify those personality variables or traits that occur consistently across groups of people. Each individual can then be located within this set of variables. The aim is to identify the main traits that usefully distinguish between types of people. In achieving this, they hope to uncover the basic structure of personality. As you may recall from Chapter 1, this is one of the major aims of studying human personality. It is a major undertaking, and we will now explore the progress that has been made, starting with the Ancient Greeks.



Source: Photodisc/Getty Images

## Emergence of personality traits

The Ancient Greek philosopher, Aristotle (384–322 BC), provides the first written description of personality traits, or dispositions as he preferred to call them. He described individual differences in traits such as modesty, bravery and vanity, seeing them as important determinants of whether a person behaved ethically. One of his students, Theophrastus (371–287 BC), published an account of 30 personality characters or types. These were early attempts to describe the commonly acknowledged differences between individuals and to identify individuals with similar dispositions. The task can be thought of as putting some order or structure into our everyday observations so that they are easier to conceptualise and discuss.

Another Ancient Greek philosopher, Hippocrates (460–377 BC), described physical illness as being caused by the balance of bodily fluids, or humours as he labelled them. These fluids included blood, black bile, yellow bile and phlegm. Another Ancient Greek, a physician named Galen (AD 130–200), expanded on Hippocrates' theory of the humours and applied it to describe human temperament or personality (Stelmack and Stalikas, 1991). When the humours were in balance, an equitable temperament was the result. If the humours were out of balance, then physical illness and mental disturbance occurred. The terms Galen used to describe these mental disturbances are still part of the English language. An excess of black bile resulted in a **melancholic temperament**, associated with depressed mood and feelings of anxiety. Strong activity in the body fluids resulted in an individual with strong emotions described as being of **choleric temperament**,

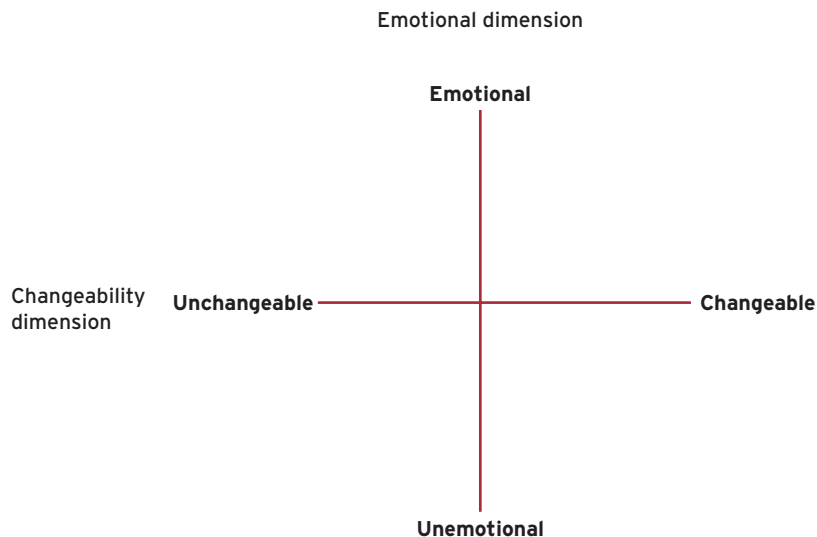
meaning that they had a tendency to easily become angry. Individuals of **phlegmatic temperament** were calm, as there was low humorous activity, while individuals of **sanguine temperament** were confident and optimistic.

In the Middle Ages the German philosopher Immanuel Kant (1724–1804) revisited the humoral temperaments and produced a description of four personality types. These were based on the strength of the individual's feelings and how active the person was. Melancholic individuals had weak feelings, while sanguine individuals had strong feelings. Phlegmatic individuals had low levels of activity, while choleric individuals had much higher levels of activity.

These early writers all described types of personality rather than personality traits. This is an important distinction. Personality types describe discrete categories into which individuals can be placed. Personality traits are continuous dimensions, and individuals can be positioned along the dimension depending on how much of the trait they possess.

It was Wilhelm Wundt, the founding father of modern-day psychology, who changed the categorical types of personality into trait dimensions. He revisited the humoral terms in his description of personality, reclassifying the old types in two dimensions based on their mood stability and the strength of their emotions. Individuals could then be placed along the dimensions of mood stability and strength of emotions rather than being simply placed in one category. Wundt's classification system is displayed in Figure 7.1.

It is true to say that little progress was made in terms of classifying personality traits from the time of the Ancient Greeks to the middle of the nineteenth century, when the clinical theories emerged – as we have already seen in



**Figure 7.1** Wundt's emotionality and changeability dimensions of personality.



Chapter 1. The reason for the delay in the emergence of trait theories is easily understandable. There are a huge number of terms in all languages to describe personality traits. For trait approaches to personality to develop scientifically, some systematic way of structuring these terms and identifying the common dimensions underlying them was necessary. It was the invention of statistical techniques such as correlation and factor analysis that made this possible, as we shall see.

## Defining personality traits

Up until now, we have used the term ‘trait’ to describe personality. We are sure you have understood what we have been saying, but we should begin this section with a definition of exactly what psychologists mean by a personality trait. Frequently, terms that have a very specific meaning in psychology are also part of our everyday language. This can result in some confusion about the precise meaning of terms; hence psychology’s obsession with defining the terms that we use. According to Burger (1997), ‘A trait is a dimension of personality used to categorise people according to the degree to which they manifest a particular characteristic.’

Two assumptions underlie trait theory. The first assumption is that personality characteristics are relatively stable over time; the second is that traits show stability across situations. A person’s behaviour may alter on different occasions, but the assumption is that there is some internal consistency in the ways that individuals behave. For example, someone who is described as an extravert may be very outgoing and chatty at a party but less so in a psychology seminar. In both situations, they are likely to be more sociable than an introverted individual. We also assume that personality traits influence behaviour. The person is outgoing and chatty because they are an extravert. These are somewhat circular arguments, and the psychologist has to move beyond them. Trait theorists have to be able to make a distinction between the internal qualities of the individual and the way they behave. The causal relationship between the two then has to be explained if we are to avoid circular arguments. To say that individuals become angry easily because they have an angry disposition does not get us very far. We need to know where their angry disposition has come from and how it influences their day-to-day behaviour.

It follows logically from the trait approach that trait theorists are more interested in general descriptions of behaviour than in understanding the individual and making predictions about individual behaviour. They take the trait continuum and provide descriptions of how groups of people at different points on the continuum might be expected to behave. For example, they might compare a

group high in aggression with a group with low scores on the same trait and observe how they behave in a debate. They are interested in typical group behaviour. It is frequently a descriptive rather than an explanatory approach. Some trait theorists are more interested in describing personality and predicting behaviour than in identifying what caused the behaviour. This can lead to circular reasoning. An individual is said to behave in a certain way because they are an anxious person. When asked to explain why an individual is anxious, the response is that they are anxious because they have behaved in a certain way. Increasingly, however, the identification processes are only the first stage. Trait theorists are becoming more interested in providing explanations for behaviour. Trait approaches make it relatively easy to make comparisons among people; individuals can be placed on a continuum relative to others, and groups can also be compared. However, trait theorists have little to say about personality change. The theorists with an interest in personality change have come from a clinical background, while trait theorists are more likely to be academic psychologists.

To recap, within psychology, traits are considered the fundamental units of personality. They represent dispositions to respond in certain ways. For a long time, there were arguments about how much the situation influenced the individual’s behaviour and how much was down to their personality traits. It is now generally accepted that while situational factors will affect behaviour, dispositional effects on that behaviour will still be observable. Mischel (1999) has produced an elegant definition of a personality trait that incorporates this. He suggests that a trait is the ‘conditional probability of a category of behaviours in a category of contexts’. Hence, if a person is an extravert, then degrees of extraverted behaviour will be observable from that person in a variety of situations.

## The development of trait theories within psychology

During the rest of this chapter we are going to take you through the development and establishment of the core trait theories of personality in psychology. These include the work of:

- Sheldon
- Early lexical approaches
- Allport
- Cattell
- Eysenck
- The five-factor model.

## Sheldon and somatypes

Although the psychoanalyst Jung (Chapter 3) introduced the terms ‘extraversion’ and ‘introversion’, the real founding figure of trait psychology is considered to be an American psychologist, William Sheldon (1899–1977). He outlined what came to be a very well-known description of personality called somatypes, which is based on physique and temperament. From his surveys of thousands of individuals, he concluded that there are three basic types of physique: **endomorphism**, **mesomorphism** and **ectomorphism** (Sheldon, 1970). Using correlational techniques, he demonstrated that each body type was associated with a particular temperament. A summary of his theory is displayed in Table 7.1.

While accepting that everyone had the same internal organs, Sheldon felt that individuals were different in terms of which organs were most prominent in their bodies and thus where their body’s focus lay. Table 7.1 represents the extremes of each type, but Sheldon produced a detailed atlas of male body types where bodies were matched against these extremes using a seven-point grading scale. He planned a similar female body atlas, but this was never produced. You may still come across descriptions of Sheldon’s body types in popular texts. In terms of personality theorising, Sheldon’s work was important as it marked the start of the utilisation of psychometric approaches to the study of personality. He carried out extensive surveys of large populations, collected different measures from individuals using questionnaires and applied statistical techniques to the analysis of his data.

## Early lexical approaches to personality and the lexical hypothesis

Several of the early researchers used dictionaries or *Rogers’ Thesaurus* to try to identify and count the number of words that describe personality traits. Sir Francis Galton

(1822–1911) was an Englishman who is best known for his early studies on genetic influences on intelligence, but he was also interested in the relationships between language and personality. He suggested that the most meaningful personality descriptors will tend to become encoded in language as single words. Galton (1884) provides the first documented source of a dictionary and/or thesaurus being used to elicit words describing personality.

This approach has come to be known as the lexical hypothesis. It suggests that it is the individual differences between people that are important that become encoded as single terms. This appears to be a sensible assumption. Two additional criteria are included in the lexical hypothesis. First, frequency of use is also assumed to correspond with importance. Again, it seems logical that the words we use most to describe personality will be labelling the aspects of personality that we think are most important. Secondly, the number of words in a language that refer to each trait will be related to how important that trait is in describing human personality. An example from a thesaurus is included in Table 7.2 to help clarify what we mean. From the table, you can see that the personality descriptor ‘honest’ has 31 synonyms listed, suggesting that it is a more important descriptor of personality than the word ‘aberrant’, which is not listed in the *Oxford Concise Thesaurus* (1999). Similarly, the word ‘warm’ describes a more useful descriptor of personality than ‘pedantic’ does.

While most of the early work was conducted on the English language, it is assumed that if the lexical hypothesis is a valid theory, then it should apply cross-culturally (Norman, 1963). This is the final assumption of the lexical hypothesis. We will return to the cross-cultural question later in the chapter. To summarise, it states that if individual differences between people are important, there will be words to describe them; the more frequently a personality descriptor is used, the more important the personality characteristic; and finally, the more synonyms of the word there are, the more important the difference.

**Table 7.1** Sheldon’s theory of physique and temperament.

	Physique		Temperament	
	Focus on part of body	Physique	Temperament	Description
<b>Ectomorph</b>	Nervous system and the brain	Light-boned with a slight musculature	<b>Cerebrotonia</b>	A need for privacy, restrained, inhibited
<b>Mesomorph</b>	Musculature and the circulatory system	Large, bony with well-defined muscles	<b>Somatotonia</b>	Physically assertive, competitive, keen on physical activity
<b>Endomorph</b>	Digestive system, particularly the stomach	Rounded body tending towards fatness	<b>Visceratonia</b>	Associated with a love of relaxation and comfort; like food and are sociable

**Table 7.2** Evidence for the lexical hypothesis.

Personality descriptor	Synonyms	Number
honest	trustworthy, truthful, veracious, trusty, honourable, creditable, decent, law-abiding, uncorrupted, uncorrupt, incorruptible, ethical, moral, virtuous, principled, upright, high-minded, dependable, reliable, reputable, above-board, straight, square-dealing, fair, just, candid, frank, sincere, direct, ingenuous, sound	31
warm	amiable, friendly, cheerful, cordial, affable, pleasant, genial, kindly, hospitable, hearty, affectionate, mellow, loving	13
pedantic	perfectionistic, scrupulous, finicky, fussy, punctilious, fastidious, meticulous, exact, quibbling	9
aberrant – meaning odd or peculiar	not included	

Source: *Oxford Concise Thesaurus*, Oxford, UK: Oxford University Press, 1999.

## Gordon Allport

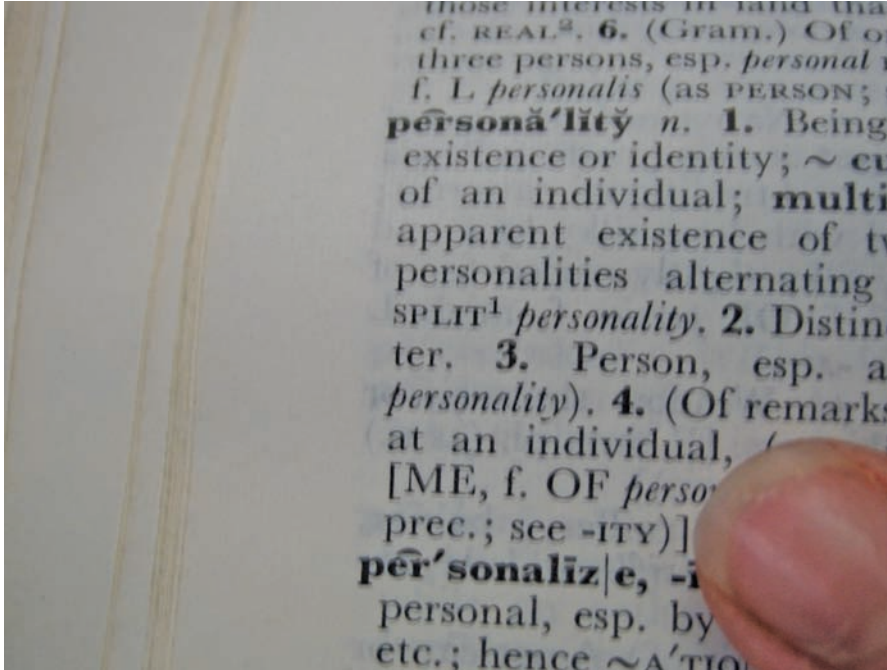
Initially, lexical researchers were limited to counting the terms used, identifying synonyms, and producing lists of these words. One of the first psychologists to produce such a list was the American Gordon Allport (1897–1967). With a colleague, he identified 18,000 words, of which 4,500 described personality traits (Allport and Odbert, 1936). Allport published the first psychology text on personality traits, *Personality Traits: Their Classification and Measurement* (1921), and he is believed to have taught the first course on personality in the United States in 1924. While promoting the concept of personality traits, Allport (1961) was quite clear about the limitations of the trait approach. He felt that it was almost impossible to use an individual's personality traits to predict how they will behave in a specific situation. He acknowledged that there is variability in everyone's behaviour, but that there is also some constancy. Personality traits constitute this constant portion of behaviour. He suggested that personality traits have a physical presence in our nervous systems. He suggested that advances in technology would one day enable psychologists to identify personality traits from inspection of the nervous system.

Although interested in traits, Allport adopted a unified approach to personality, suggesting that it is the way that the component traits come together that is important. It is how the traits come together that produces the uniqueness of all individuals, which he was keen to stress. Together, these traits produce a unified personality that is capable of constant evolution and change. Allport felt that change is a component part of the personality system that is necessary

to allow us to adapt to new situations and grow to cope with them. He adopted a very positive conceptualisation of human nature. He suggested that human beings are normally rational, creative, active and self-reliant. This was a very different view of human nature from the Freudian one that was dominant at the time.

Allport made the distinction between nomothetic and idiographic approaches to the study of personality. We covered this distinction in Chapter 1, but we have included a reminder of these terms in Stop and think: Nomothetic and idiographic approach, as this is an important distinction that you need to be familiar with. Allport felt that both approaches bring unique insights into our understanding of personality. He felt that the nomothetic approach allows the identification of **common personality traits** (Allport, 1961). He saw these common traits as ways of classifying groups of individuals with one group being classified as being more dominant, happier or whatever than another comparable group. He felt that such comparisons based on common traits are not particularly useful. Of more use is what he termed the **personal disposition** of the individual. The personal disposition represents the unique characteristics of the individual. This approach emphasises the uniqueness of each person, and Allport (1961) felt that this was potentially a more fruitful approach towards developing a real understanding of personality.

Personality traits were further classified into cardinal, central and secondary traits. **Cardinal traits** are single traits that may dominate an individual's personality and heavily influence their behaviour. These may be thought of as obsessions or ruling passions that produce a need that



The aim of lexical approaches is to find underlying dimensions to the many ways we describe our personality.

Source: Pearson Education Ltd.

demands to be fulfilled. For example, someone may have a cardinal trait of competitiveness that permeates virtually every aspect of their behaviour. They strive to be best at everything they do. **Central traits** are the 5 to 10 traits that Allport felt best describe an individual's personality. **Secondary traits** are more concerned with an individual's preferences and are not a core constituent of their personality. Secondary traits may only become apparent in

particular situations – unlike central traits, which have a more general applicability.

The other major contribution that Allport made to personality theorising relates to the concept of self. He emphasised the importance of the concept to any theory of personality as he felt it is crucial to the development of identity and individuality. He hypothesised that children are not born with a concept of self, but that it gradually de-

## Stop and think



### Nomothetic and idiographic approach

The **nomothetic** approach comes from the ancient Greek term for 'law' and is based on the assumption that there is a finite set of variables in existence that can be used to describe human personality. The aim is to identify these personality variables or traits that occur consistently across groups of people. Each individual can then be located within this set of variables. By studying large groups of people on a particular variable, we can establish the average levels of that variable in particular age groups, or in men and women, and in this way produce group averages, generally called **norms**, for variables. Individuals can then be described as being above or below the average or norm on a particular variable. The nomothetic approach concentrates on the similarities between individuals.

The **idiographic** approach focuses on the individual and describes the personality variables within that individual. The term comes from the ancient Greek *idios*, meaning 'private or personal'. Theorists, who adopt this approach in the main, are only interested in studying individuals one at a time. They see each person as having a unique personality structure. Differences between individuals are seen to be much greater than the similarities. The possible differences are infinite. Idiographic approaches produce a *unique understanding* of that individual's personality. These approaches are usually based on case studies of individuals.



velops. He felt that it is a lifelong process of development. The child first becomes aware of the separateness of themselves from others in their environment and from this comes their sense of self-identity. As a result of their experiences while becoming integrated into their family and wider society, they develop self-esteem. Allport felt that the concept of self presented a challenge to psychologists as it is difficult to define precisely, consisting as it does of several component parts. He used the term **proprium** as a synonym for the self, suggesting that the terms represented all the constituent parts that go to make up the concept of self.

Allport's major impact on personality theory was in terms of stressing the limitations of the trait approaches as they were currently adopted. He raised the issue about the relative influence of personality and situation in determining behaviour, something still of concern to psychologists. His inclusion of the concept of self as a legitimate and central concern of personality theorists was also important in the trait tradition of personality research. His distinction between nomothetic and idiographic approaches to the study of personality is an important one. He did not develop any standardised measures of personality traits as such; this was left to other theorists, as we shall see. His list of 4,500 personality traits is too long to be of much practical use in assessing personality.

## Raymond Cattell and the emergence of the factor analytic approach

The real advances in trait approaches were only possible after the invention of the technique of factor analysis. A

detailed description of the principles underlying factor analysis is given in Chapter 25. You may find it helpful to read that section so that you can fully understand the rest of this chapter. Allport did not engage with factor analysis; but the next theorist that we examine, Raymond Cattell, made full use of the technique, having been instructed in it by Spearman, the inventor of factor analysis. (See Profile: Raymond Cattell.) Following from this early scientific training, Cattell was keen to apply empirical methods to discover the basic structure of personality. From the lists of personality traits, he noted that many traits are very similar, and he argued that the existing lists could be reduced to a much smaller number of traits. This smaller number of traits would represent the basic components of personality. Cattell's work thus marks the beginning of the search for the structure of personality using factor analysis. Put simply, the procedure involves identifying lists of the most frequently used sets of words that seem to describe aspects of personality; large samples of individuals are then asked to rate the degree to which the attributes apply to them. This data set is then factor analysed to identify which attributes cluster together. Clusters are composed of items that correlate with each other. So, for example, you might have the variables 'determined', 'persistent', 'productive' and 'goal-directed' that turn out to be highly correlated with each other and thus form a cluster or factor that you could perhaps call achievement oriented. What this method gives you is a general measure of some ability, in this instance achievement orientation, that you obtain by measuring the individual's ratings of their determination, persistence, productivity and goal-directedness.

### Profile



#### Raymond Cattell

Raymond Bernard Cattell was born in a village just outside Birmingham, UK, in 1905. His first degree was in chemistry and physics at the University of London. He had become interested in psychology and undertook a PhD in psychology at the same university. His supervisor was the inventor of factor analysis, Charles Spearman. This resulted in Cattell being very well trained in the new statistical technique of factor analysis and adopting it as an analysis tool. Sir Cyril Burt, the psychologist who specialised in intelligence, was also in the same department; and Cattell was influenced by his apparently rigorous approach to research. You will find out more about Burt in Chapter 13 when you examine intelligence. Cattell undertook some studies on personality

and worked in a child guidance clinic to get clinical experience. In 1937, he emigrated to the United States and to a position at Columbia University. He has worked at Clark University, Harvard and the University of Illinois, where he was director of the Laboratory of Personality Assessment. Cattell is not always easy to read in the original. A lot of his work deals with mathematical issues involved in factor analysis. He was a prolific writer, publishing 35 books and over four hundred journal articles. In addition, he produced a variety of personality tests, including the Culture Fair Intelligence Tests, Motivation Analysis Test and the much-used Sixteen Personality Factor questionnaire (16PF test). Cattell died in February 1998.



## Types of traits

Cattell (1965) defined personality as being the characteristics of the individual that allow prediction of how they will behave in a given situation. His approach to personality was a broad one, and he identified a range of traits, as we shall see. Later in his career, he became interested in the ways that personality traits and situational variables interact to affect the way that individuals behave. Traits are conceptualised as being relatively stable, long-lasting building blocks of personality.

Cattell makes distinctions between types of traits. The first distinction relates to whether traits are genetically determined or the result of environmental experiences. The genetically determined traits are called **constitutional traits** while the environmentally induced traits are called **environmental-mold traits**. This distinction represents the nature versus nurture debate that occurs repeatedly in every area of psychology. In this application, it asks whether individual differences are caused by inherited aspects of our personality, or are they explained by how we have been treated and the environmental experiences we have had? Cattell (1982) was keen to try to establish the relative contribution of genetics and environment to various personality traits. He developed a statistical procedure called **multiple abstract variance analysis (MAVA)** to accomplish this. He administered personality tests to assess a particular trait in relation to complex samples consisting of family members raised together, family members raised apart, identical twins raised together, identical twins raised apart, unrelated children raised together and unrelated children raised apart. Using complex statistical procedures, the test allows the researcher to calculate the precise degree of influence that genetic and environmental factors have in the development of a particular personality trait.

Next, Cattell defines three different types of traits: ability, temperament and dynamic traits. **Ability traits** determine how well you deal with a particular situation and how well you reach whatever your goal is in that situation. For example, the various aspects of intelligence are good examples of ability traits. He also identifies individual differences in the styles that people adopt when they are pursuing their goals. These are labelled **temperament traits**. Some people may be laid back and easygoing, or irritable, or anxious and so on, in the way that they typically approach life. These then are examples of temperament traits.

Cattell, like many of the other theorists we have examined, was interested in what motivates human behaviour. You will recall from Chapter 1 that this is a core area for personality theories to explain. He suggested that we have **dynamic traits** that motivate us and energise our behaviour (Cattell, 1965). For example, an individual may be motivated to succeed and be very competitive, or they may be ambitious, or driven to care for others, be artistic and so on.

As Cattell (1965) considered the question of motivation to be at the heart of personality theorising, the dynamic traits were heavily researched. He concluded that there are three types of dynamic traits: **attitudes**, **sentiments** and **ergs**. Attitudes are defined as hypothetical constructs that express our particular interests in people or objects in specific situations. Attitudes help to predict how we will behave in a particular situation. Cattell (1950) defined sentiments as complex attitudes that include our opinions and interests that help determine how we feel about people or situations. Cattell (1979) considered ergs to be innate motivators. He suggested that ergs are innate drives. They cause us to recognise and attend to some stimuli more readily than others, and to seek satisfaction of our drives.

Cattell suggests that all these types of dynamic traits are organised in very complex and interrelated ways to produce **dynamic lattice**. The aim is to explain how we have to acquire particular traits to achieve our goals. For example, if your goal is learning to ski, you need to learn to copy the instructor. You have to demonstrate patience and perseverance in practising. You have to tolerate being a figure of fun when you fall over, and you may have to conquer fear to go on the drag lift and so on. How others react to you will also affect the lattice as will your attitudes towards others and the mood you are in. This then gives a hint of the complexity involved. It is fair to say that this system certainly does not simplify the explanation of behaviour in any real way, and other psychologists have not followed up this work.

A further distinction is between **common traits** and **unique traits**. Common traits are those shared by many people. They would include intelligence, sociability, dependency and so on. Unique traits are rarer and specific to individuals. A unique trait might be an interest in collecting fishing reels by a particular maker or an interest in a particular entertainer or the like. They are specialised interests, if you like, that motivate individuals to pursue certain related activities. While Cattell's work is concerned almost exclusively with common traits, he includes the concept of unique traits to emphasise the uniqueness of human beings. He also stressed that the uniqueness of individuals is also due to the unique ways that common traits come together in different individuals. Different individuals will have different mixtures of common traits making up their personalities, thus making them unique.

Cattell (1950) suggested an important distinction between **surface traits** and **source traits**. Surface traits are collections of traits descriptors that cluster together in many individuals and situations. For example, individuals who are sociable also tend to be carefree, hopeful and contented. These are all surface traits; and when you measure individuals on each of these surface traits, you find that their scores on each one are correlated with all the others. That is, if an individual scores highly on sociability, they also score highly on the carefree trait, the hopefulness trait

and the contentedness trait. The technique of factor analysis suggests that there is an underlying trait, what Cattell calls a **source trait**, that is responsible for the observed variance in the surface traits. In this case, it is the source trait of extraversion. Extraversion is measured by the scores of the surface traits of sociability, carefreeness, hopefulness and contentedness. The surface traits relate to the overt behaviours that individuals display. The source trait, on the other hand, is the major difference in personality that is responsible for all these related differences in observed behaviour. In simple terms, being high in the source trait of extraversion causes you to display behaviour that is more sociable, to have more hopeful attitudes and so on.

The source traits are identified using the statistical technique of factor analysis, as we have previously discussed. Source traits are important as they represent the actual underlying structure of personality. If psychologists can identify the basic structure of personality, then they will be better able to predict behaviour. This has become the main quest for trait theorists. As we have seen, there are an enormous number of personality traits; but identifying the source traits will reduce this number. By using a smaller number of source traits, psychologists can then construct personality tests that include only measures of surface traits that relate to the source traits. Personality tests produced in this way will provide better measures of individual differences in personality.

Cattell (1957) makes it clear that it is necessary to use a broad range of personality descriptors to ensure that the appropriate source traits are discovered. He began his quest for the underlying structure of personality with the list of 4,500 trait names as identified by Allport and Odbert (1936). You may recall that we mentioned this list earlier in the chapter in the section on Allport. Firstly, using teams of raters, Cattell removed all the synonyms. This left him with a list of 171 trait names. By getting raters to assess individuals on these traits, he reduced the list further to produce 36 surface traits. Ten other surface traits were identified in further studies on personality assessment and from a review of the psychiatric literature. Thus, Cattell concluded that 46 surface traits are sufficient to describe individual differences in personality (Cattell and Kline, 1977).

Beginning with these 46 surface traits, Cattell used a variety of approaches to uncover the source traits of personality. The aim was to factor-analyse measures of all the 46 surface traits collected from large samples of individuals. As you will see in the material on factor analysis (Chapter 25), large numbers of participants are required for factor analysis. Cattell used different data collection procedures to obtain his data sets. One source of data he called **L-data**, short for 'life record data'. These are measurements of behaviour taken from the person's actual life. Ideally it might be things like the A-level grades the person got, the degree they were awarded, the number of car accidents they had and so on. Such data could be difficult to obtain, so Cattell

settled for ratings of the individual's behaviour by individuals who knew them well in a particular situation. In a school setting it might be teacher's ratings of aspects of the individual's ability, sociability, conscientiousness, and/or fellow students' ratings. In a work setting, it might be ratings by colleagues or managers, for example. These individuals would rate aspects of their target colleague's behaviour using a 10-point Likert Scale.

A second type of data collection involved using personality questionnaires. Cattell called this **Q-data**. This is the paper-and-pencil questionnaire that is widely used as an assessment tool in psychology.

Cattell's final method of generating data involved getting participants to complete tests under standardised testing conditions, but the tests are such that the responses cannot be faked. He called the data collected **T-data** and claimed that it represents truly objective test data. In normal questionnaires, respondents may lie about some of their answers to create a good impression, for example. However, participants completing the objective tests that produce T-data do not know what is being measured, so they cannot distort their answers. Cattell (1965) gives the Rorschach inkblot test as an example of such a test. Participants are presented with a series of different inkblots and have to report what they see. Clinical psychologists then interpret this information.

From the factor analyses of huge data sets gathered using these different procedures, Cattell identified 16 major source factors (Cattell, 1971; Cattell and Kline, 1977). Further research identified another 7 factors; but his best-known measure of personality, the Sixteen Personality Factor (16PF) questionnaire uses the original 16 factors as they are the most robust measures. Cattell and his co-researchers have identified these 16 source traits as representing the basic structure of personality. He also ranked the traits in terms of how important they were in predicting an individual's behaviour. In the following list, we will present the 16 factors in this order, so that the most predictive items come first. Each factor represents a continuum along which individuals are ranked. At one end, individuals possess extremely high levels of the factor; at the other end, their levels are extremely low. Cattell (1965) was at pains to point out that almost all of the source traits have positive and negative aspects at each end of the continuum. We will highlight an example as we go through the trait descriptions. In labelling the source traits, we will use the factor letters that Cattell used to describe each factor, followed by what the scales measure (which has come to be the popular name for each of the scales) and then by the technical labels that Cattell has assigned to each factor (in parentheses). By doing this, we want to ensure that you will recognise the traits in other texts, where any of these names may be used.

- **Factor A, Outgoing-Reserved (affectothymia-schizothymia)**. This factor measures whether individuals are

outgoing or reserved. It is the largest factor. The technical labels Cattell chose for the endpoints of this factor, affectothymia (outgoing) and schizothymia (reserved), reflect the history of the employment of this trait in psychiatry. The outgoing–reserved dimension was shown to be important in determining which individuals were hospitalised for mental illness (Cattell, 1965).

- **Factor B, Intelligence (High ‘8’–Low ‘8’)**. Cattell was the first to include intelligence as an ability trait. He rated it as the second best predictor of behaviour in his initial analysis of the factors that best predict actual behaviour.
- **Factor C, Stable–Emotional (high ego strength–low ego strength)**. This source trait measures emotional stability and the ability an individual has to control their impulses and solve problems effectively (Cattell, 1965). At the positive end, individuals are rated as being stable individuals who cope well in their lives and are realistic in their approach to life. At the negative end, individuals are emotionally labile. They are more neurotic and highly anxious.
- **Factor E, Assertive–Humble (dominance–submissiveness)**. At the dominant end individuals display the surface traits of boastfulness, aggression, self-assertiveness, conceit, forcefulness, wilfulness, egotism and vigour. Humble or submissive individuals are seen to be modest, unsure, quiet, obedient, meek and retiring. This trait is the first to display a mixture of positive and negative attributes at each end of the scale. Dominant individuals have positive qualities of vigour and forcefulness but are boastful and egotistical.
- **Factor F, Happy-go-lucky–Sober (surgency–desurgency)**. When discussing this term, Cattell defended his creation of new terms like surgency to describe his source traits. He suggests that the common names for traits often do not accurately represent what psychologists mean, so it is better to use a technical term that can be defined more precisely. High surgency individuals are cheerful, sociable, responsive, joyous, witty, humorous, talkative and energetic. He suggests that this is more than simply happy-go-lucky, the popular name for the term. Desurgent individuals are pessimistic, inclined to depression, reclusive, introspective, given to worrying, retiring and subdued. Cattell (1980) stated that this is the most important single predictive factor in children’s personalities. He explored the influence of genetic factors on this trait and suggested that 55 per cent of the variance on this trait is due to heredity.
- **Factor G, Conscientious–Expedient (high superego–low superego)**. Cattell (1965) compares this factor to Freud’s concept of the superego. Individuals high in conscientiousness are persistent and reliable and exercise good self-control. At the other end of the continuum, expedient

individuals tend to take the line of least resistance rather than be guided by their principles.

- **Factor H, Venturesome–Shy (parmia–threctia)**. Here Cattell contrasts the bold, genial, adventurous, gregarious, individual (venturesome) with the shy, aloof, self-contained, timid individual (shy). Cattell’s technical labels for these terms are not as obscure as they seem at first sight. The terms relate to the autonomic nervous system, specifically the sympathetic and parasympathetic systems. The sympathetic nervous system produces the body’s fight-or-flight response in the presence of a stressor of some sort. Put simply, the parasympathetic system is involved in maintaining more normal, relaxed functioning. *Parmia* is an abbreviation of ‘parasympathetic immunity’, meaning that the individual remains calm under potentially threatening circumstances. They are immune to the effects of the sympathetic system. Similarly, *threctia* stands for ‘threat reactivity’ and hence is used to label an individual who has a reactive sympathetic system. Cattell (1982) undertook studies on the heritability of this trait and concluded that the genetic factor accounted for approximately 40 per cent of the variance.
- **Factor I, Tender-minded–Tough-minded (premsia–harria)**. The popular name describes this trait well. Tough-minded individuals are mature, independent-minded, self-sufficient and realistic. Tender-minded individuals are gentle, imaginative, anxious, impatient, demanding, immature, creative, neurotic and sentimental. The technical terms are derived from the phrases ‘protected emotional sensitivity’ (premsia) and ‘hard realism’ (harria).
- **Factor L, Suspicious–Trusting (protension–alaxia)**. Individuals high in factor L are at the suspicious end of the continuum and, as well as being suspicious, are jealous and withdrawn from others. Those scoring low on factor L are trusting, composed and understanding. Cattell (1957) explains that the technical term *protension* is derived from the words ‘projection’ and ‘tension’. *Alaxia* is from the term ‘relaxation’.
- **Factor M, Imaginative–Practical (autia–praxernia)**. The individual high in factor M is unconventional, intellectual and imaginative. They may often be unconcerned with the practicalities of life. The technical term *autia* comes from the word ‘autistic’. *Praxernia* is derived from ‘practical and concerned’. Such individuals are conventional, practical, logical, with a tendency to worry, and conscientious.
- **Factor N, Shrewd–Forthright (shrewdness–artlessness)**. Here the descriptors fit the labels well. The shrewd individual is astute, worldly, smart and insightful (Cattell and Kline, 1977). The forthright individual is spontaneous, unpretentious and somewhat naïve.

- **Factor O, Apprehensive–Placid (guilt-proneness–assurance).** High levels of guilt-proneness are conceptualised as a purely negative trait by Cattell and Kline (1977). It is seen to be typical of criminals, alcoholics, other drug abusers and individuals suffering from manic depression. Individuals low in factor O are placid, resilient and self-confident (Cattell and Kline, 1977).
- **Factor Q<sub>4</sub>, Tense–Relaxed (high ergic tension–low ergic tension).** Again, this factor is largely self-explanatory. Those high in factor Q<sub>4</sub> are tense, driven individuals; while at the other end of the continuum, individuals are relaxed and easygoing (Cattell, 1973).

If you recall, at the beginning of this section you were told that the factors are presented in their order of importance in explaining individual differences in behaviour. The remaining four Q factors, therefore, are not particularly good predictors of behaviour; but some of them have been researched extensively.

- **Factor Q<sub>1</sub>, Experimenting–Conservative (radicalism–conservatism).** It is suggested that conservatives have a general fear of uncertainty and thus opt for the known and the well established. Radicals, on the other hand, prefer the non-conventional and conform less to the rules of society than conservatives do (Cattell, 1957).
- **Factor Q<sub>2</sub>, Self-sufficiency–Group-tied (self-sufficiency–group adherence).** This factor is self-explanatory. It describes the individual's preference to go it alone or their need to be part of a group.
- **Factor Q<sub>3</sub>, Controlled–Casual (high self-concept–low integration).** Individuals high in factor Q<sub>3</sub> are compulsive individuals. They crave a controlled environment that is highly predictable. Individuals low in factor Q<sub>3</sub> are undisciplined, lax individuals who have a preference for disorganisation in their surroundings.



Which one of Cattell's 16 personality factors might describe this man: outgoing-reserved, stable-emotional, happy-go-lucky-sober, venturesome-shy, apprehensive-placid, experimenting-conservative?

Source: The Kobal Collection

## Contribution of Cattell

As we have seen, Cattell was keen to develop a comprehensive, empirically based trait theory of personality. He acknowledged the complexity of factors that all contribute to explain human behaviour, including genetics and environmental factors as well as ability and personality characteristics. Cattell (1965, 1980) was adamant that the test of any good personality theory was its ability to predict behaviour; he even produced an extremely complex mathematical equation that he suggested could do this. He wrote about the effect of learning on personality development and even turned his attention to classifying abnormal behaviour. While he produced vast amounts of empirically based work and attempted to develop a truly comprehensive theory of personality, he is best known in psychology for the 16PF (Cattell, Eber and Tatsuoka, 1970).

The Sixteen Personality Factor (16PF) questionnaire has become a standard measure of personality and has been used consistently since its publication. However, the internal consistencies of some of the scales were quite low, and it has been revised and improved (Conn and Rieke, 1994). To do this, the questionnaire has been changed substantially, with over 50 per cent of the items being new or significantly modified.

Although these revisions have produced a better measure psychometrically, it does mean that studies using the 16PF cannot be directly compared with the work that uses the earlier measure. The earlier measure had good predictability. Studies were undertaken that linked participation in church activities to differences in personality characteristics (Cattell, 1973; Cattell and Child, 1975). Other researchers demonstrated that the 16PF was a good predictor of success in different school subjects (Barton, Dielman and Cattell, 1971).

Given the amount that Cattell published, it is perhaps surprising that this work has not had more impact. Part of the reason for this is that much of his work is difficult to understand. His use of obscure labels for his factors and the complex systems that he postulated are not reader friendly. He put great emphasis on the objectivity of his approach and did not acknowledge the inherent subjectivity involved in factor analysis, linked to the initial selection of traits the researcher chooses to measure and the explanatory labels they select for their underlying factors. Trait approaches generally will be evaluated at the end of the chapter so are not being repeated here. What we need to remember at this point is that Cattell suggested that the underlying structure of personality consists of 16 factors.



## Hans Eysenck's trait theory of personality

When Hans Eysenck began to work in the area of personality, he observed that there were two schools within psychology. The first consisted of personality theorists whose main focus was on the development of theories, with little if any emphasis on evaluating these theories with empirical evidence. The second group was made up of experimental psychologists who had little interest in individual differences. Eysenck (1947) stressed the need for an integration of these two approaches. He outlined his goals as being to identify the main dimensions of personality, devise means of measuring them and test them using experimental, quantitative procedures. He felt that these steps would lead to the development of sound personality theory. (See Profile: Hans Eysenck.)

Eysenck (1947, 1952) accepted the conventional wisdom that assumed that children inherit personality characteristics from their parents and other members of their family. At the time he was writing, the main theoretical slant in psychology was that babies were relatively blank slates and that while development was limited by differences in intelligence or physical skills, it was environmental experiences, particularly parenting styles, that largely influenced the development of personality. This was a legacy from the strong tradition of behaviourism. Over fifty years ago, Eysenck was stressing the importance of genetic inheritance, a view that has gained ground within psychology. We know from physiology that there are differences in physiological functioning between individuals and that these biological differences often translate into different behaviour. Eysenck's early claim that there is a large biological determinant to

personality was originally met with scepticism; but as you will read in Chapter 8, it has become accepted as supporting evidence has emerged from biological research.

Eysenck began by examining historical approaches to personality, including the work of Hippocrates and Galen that we covered earlier. His aim was to uncover the underlying structure of personality. The historical evidence suggested to him that there are different personality types, and the definition of personality that he adopted incorporates this concept. Eysenck (1970) defines personality as being the way that an individual's character, temperament, intelligence, physique and nervous system are organised. He suggests that this organisation is relatively stable and long-lasting. Traits are the relatively stable, long-lasting characteristics of the individual. In common with other trait researchers, Eysenck has utilised factor analysis. He collected measurements of personality traits from large samples of individuals and factor-analysed them. After many years of research, he concluded that there are three basic personality dimensions, which he called types, and that all traits can be subsumed within these three types. Before we examine the three types, we need to become familiar with Eysenck's model of personality.

### Eysenck's structure of personality

Beginning with observations of individual behaviour that he calls **specific responses**, Eysenck developed a hierarchical typology. An example of the methodology he used will make this clearer. For example, you would watch someone talking with their friends one evening and carefully observe their specific responses. If this person spends a great deal of their

## Profile



### Hans Eysenck

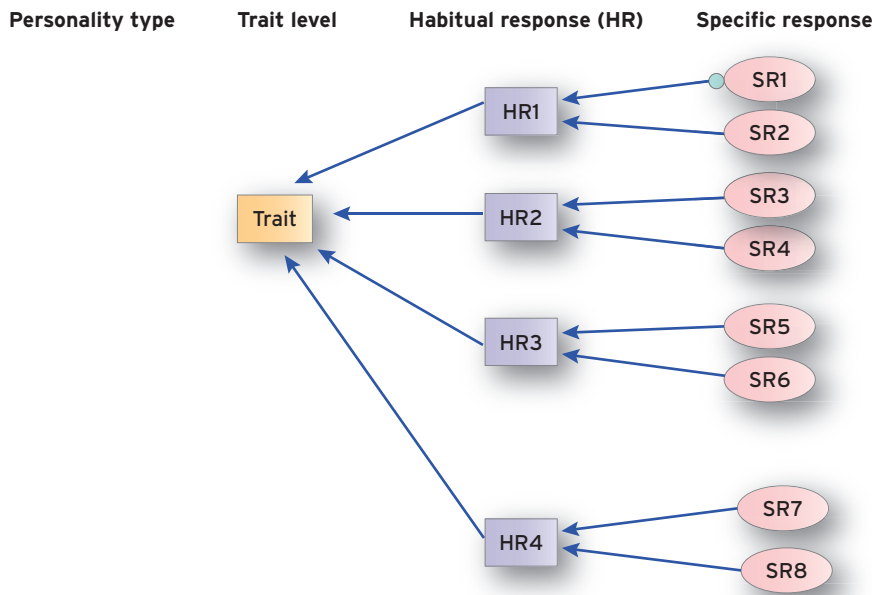
Hans J. Eysenck was born in Berlin in 1916 during the First World War, to parents who were both actors. His parents divorced when he was only two years old and, as his mother was a silent film star, he went to live with his grandmother. Aged 6 years old, Eysenck appeared in a film alongside his mother. His father would have liked him to pursue an acting career, but his mother discouraged it. As a young man he was opposed to Hitler and the Nazi party and left Germany in 1934. He had been told that he could not go to university unless he joined the Nazi party, and he was unwilling to do this. He went first to France before finally settling in England. In London, he studied for his undergraduate degree at the University of London, and it is said that he

only specialised in psychology as he did not have the prerequisite subjects to study physics. He obtained his PhD in 1940 and tried to join the Royal Air Force to fight in the Second World War; but he was not accepted, as he was German and considered to be an enemy alien. Instead he went to work at a mental hospital and continued with his research career. After the war, he went to work at the Maudsley Hospital in London, where he soon established the first training course in clinical psychology. Eysenck continued to work at the Maudsley, where he was a prolific researcher. He published around 45 books and hundreds of research papers and edited chapters. He continued working up until his death from cancer in 1997.

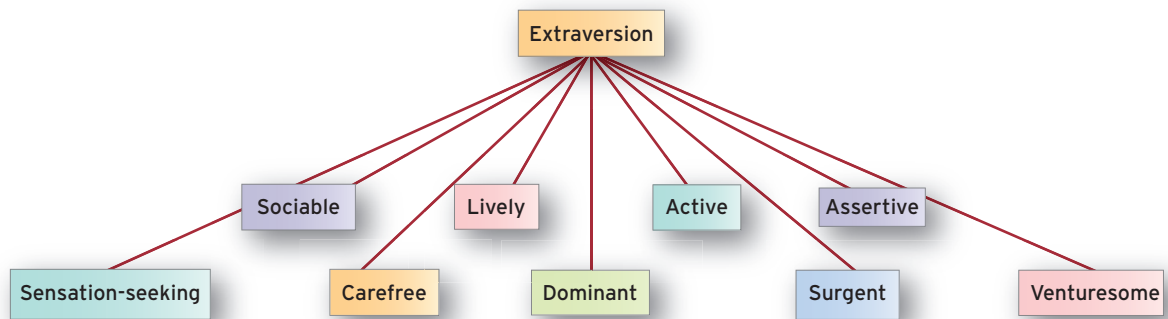
time talking with friends, you can begin to observe some of what Eysenck calls their **habitual responses**. Thus, habitual responses are the ways that individuals typically behave in a situation. From continued observations of the same individual, you might observe that this person seeks out occasions to interact with others and really enjoys social events. The conclusion would be that this person is very sociable, or in personality terms, they possess the trait of sociability. This structure of personality is shown in Figure 7.2. From the diagram, you can see that specific responses that are found together in the individual make up habitual responses, and collections of habitual responses that the individual produces make up the next level of personality traits. Using factor analyses, Eysenck argued that traits such as sociability, liveliness, activity, assertiveness and sensation seeking are

highly correlated. This means that an individual's scores on each of these traits are likely to be very similar. This collection of traits then forms a **supertrait** or **personality type**. Each supertrait represents a continuum along which individuals can be placed, depending on the degree of the attribute they possess.

Eysenck originally suggested that there are two supertraits. The first is a measure of sociability with **extraversion** at one end of the continuum and **introversion** at the other. **Extraverts** are sociable and impulsive people who like excitement and whose orientation is towards external reality. **Introverts** are quiet, introspective individuals who are oriented towards inner reality and who prefer a well-ordered life. The personality traits that make up extraversion are shown in Figure 7.3.



**Figure 7.2** Eysenck's hierarchical model of personality.  
 Source: Adapted from Eysenck, H. J. (1967). *The Biological Basis of Personality*. Springfield, IL: Charles C. Thomas, p. 36. Reprinted courtesy of Charles C. Thomas Publisher, Ltd.

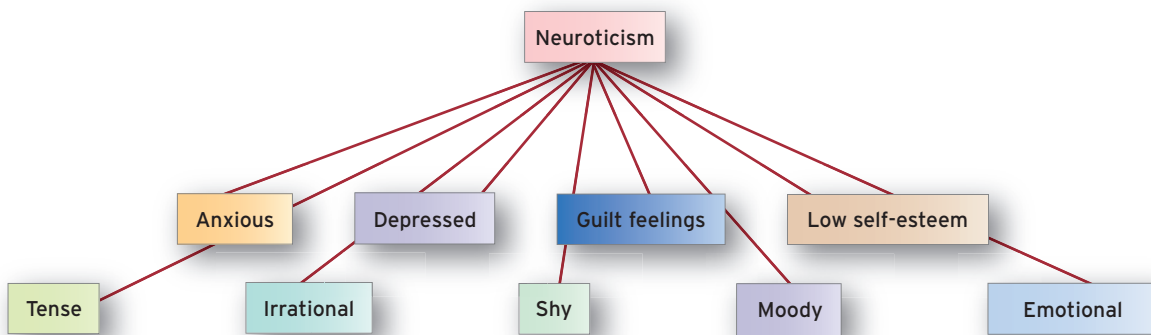


**Figure 7.3** Traits that make up extraversion.  
 Source: Based on Eysenck and Eysenck (1985a).

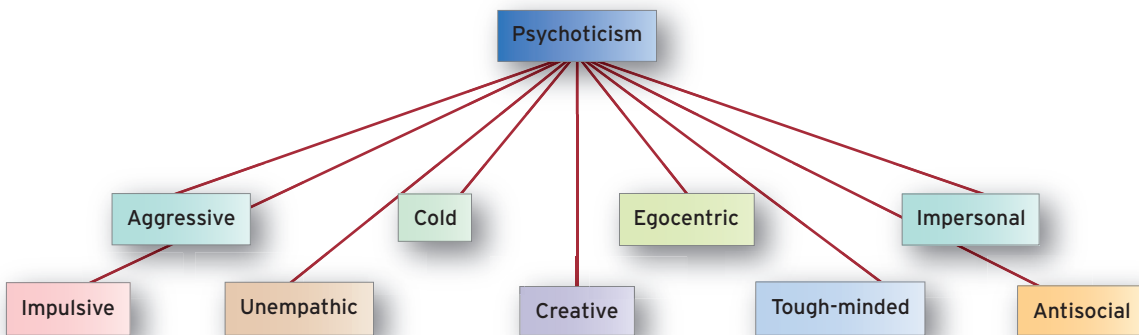
The second personality type or supertrait is **neuroticism**. Individuals can be placed on this dimension according to the degree of neuroticism they possess. Eysenck (1965b) defines neurotics as emotionally unstable individuals. He describes several types of neurotic behaviour. Some individuals high in neuroticism may have unreasonable fears (phobias) of certain objects, places, animals or people. Others may have obsessional or impulsive symptoms. The distinguishing feature of neurotic behaviour is that the individual displays an anxiety or fear level that is disproportionate to the realities of the situation. The traits that make up neuroticism are shown in Figure 7.4. Eysenck does separate out one group of neurotics who are free from anxiety and fear, and he labels this group **psychopaths**. These are individuals who behave in an antisocial manner and seem unable to appreciate the consequences of their actions despite any punishment meted out (H. Eysenck, 1965b). Such individuals are described as acting as if they have no conscience and showing no remorse for things they have done. Psychopathic personalities are likely to be found within the prison population.

The recognition of this group of psychopaths by Eysenck led to the identification of a third personality factor. As the two personality types (extraversion and neuroticism) did not adequately explain all of Eysenck's data, he added a third type, **psychoticism**. It is the severity of the disorder that differentiates psychotics from neurotics. Psychotics display the most severe type of psychopathology, frequently being insensitive to others, hostile, cruel and inhumane with a strong need to ridicule and upset others. The traits that come together to form psychoticism are shown in Figure 7.5.

Eysenck and Eysenck (1985a) stated that despite having all these undesirable traits, psychotics still tend to be creative individuals. Eysenck quoted several sources of evidence to support his hypothesis. First, he provided historical examples of individuals he felt were geniuses and who had all displayed personality traits typical of psychoticism. He defined geniuses as being extremely creative individuals, and he suggested that many of the traits associated with psychoticism could be perceived as aiding a creative career. Traits such as being egocentric, so you always put yourself first; being



**Figure 7.4** Traits that make up neuroticism.  
Source: Based on Eysenck and Eysenck (1985a).



**Figure 7.5** Traits that make up psychoticism.  
Source: Based on Eysenck and Eysenck (1985a).

tough-minded, so that you pursue your own goals regardless of others or circumstances; being unempathic, so that you are not affected by other people's emotions and problems. Psychological studies of great individuals have demonstrated that they have needed to be self-centred and persistent to overcome the obstacles that they faced in their lives and that they also possess the ability to think in unusual, almost bizarre ways (Simonton, 1994). Eysenck (1995) cited evidence that psychotic individuals perform well on tests of creativity that require divergent thinking. By divergent thinking, he meant the ability to produce novel ideas that are different from those that most people produce. He claimed that psychotics and geniuses have an overinclusive cognitive style that allows them to consider divergent solutions to problems. These views of Eysenck's are not universally accepted. As Simonton (1994) points out, humanistic psychologists such as Maslow and Rogers asserted that creativity is the result of optimum mental health, which implies balanced personalities. Eysenck (1995) did admit that more research is required in this area.

Eysenck (1967) claimed that these three types or supertraits make up the basic structure of personality, and he developed an instrument to measure the three types and their supporting traits. This is called the Eysenck Personality Questionnaire (EPQ; H. Eysenck and S. Eysenck, 1975). He suggested that there is a link between the clinical conditions of neurosis and psychoses and his scales of neuroticism and psychoticism. Individuals who score highly on neuroticism or psychoticism are not necessarily neurotic or psychotic, but he argued that they are at risk of developing these disorders. High scores indicate a predisposition, which may develop under adverse circumstances.

Eysenck's next task was to explain why individuals who differed along the supertrait dimensions should behave differently. His theoretical exposition, while not ignoring environmental influences, was heavily biological. Indeed, Eysenck (1982a) claimed that about two-thirds of the variance in personality development can be attributed to biological factors. Environment plays a part particularly in influencing how traits are expressed, but Eysenck would argue that biology has imposed limits on how much an individual personality can change. A full account of Eysenck's biological explanation of personality differences is provided in Chapter 8 with the other biological theories.

## Research evidence for Eysenck's types

Many predictions have been made from this theory, and there is a high level of support over a period of 40 years. For example, Eysenck (1965b) reported that extraverts compared with introverts prefer to socialise. They like louder music and brighter colours, and they are more likely to smoke, drink more alcohol and engage in more

varied sexual activities. These differences generally continue to be reported in the literature. Amirkham, Risinger and Swickert (1995) found that extraverts are more likely than introverts to attract and maintain networks of friends and to approach others for help when they are undergoing a crisis. Eysenck and Eysenck (1975) reported that extraverts, due to their need for variety in their lives, have more career changes or job changes. Extraverts are also more likely to change relationship partners more frequently. Campbell and Hawley (1982) looked at the study habits and the preferred location for studying of students and found that introverts prefer to study in quiet areas, while extraverts study in areas where there are other people and opportunities to socialise. Extraverts also took more study breaks than introverts did, indicating that they have a higher need for change in their activities and environment. Davies and Parasuraman (1992) reported that extraverts tire more easily than introverts on tasks requiring vigilance and are more likely to make errors. While there continues to be a significant amount of research utilising versions of the EPQ (H. Eysenck and S. Eysenck, 1975, 1991), the neuroticism and the extraversion scales have proved to be good reliable measures psychometrically; the psychoticism scale is more problematic, with much lower internal reliability statistics. You can refer to Chapter 24 for a detailed explanation of reliability statistics. Eysenck (1967) admitted that this scale is less robust and did refine it somewhat (H. Eysenck, 1992), but despite this, it remains the weakest measure.

If the three-factor solution represents the basic structure of personality, it should be found cross-culturally. Eysenck and Eysenck undertook a considerable programme of cross-cultural research to explore whether his theory held. His EPQ was carefully translated into many different languages. This research is summarised in Eysenck and Eysenck (1982). He reported that the primary factors were found in at least 24 nations in both males and females. His sample included African, Asian, North American and many European cultures. From this data and from twin studies, described in Chapter 8, Eysenck concluded that the three-factor structure has a genetic basis and represents the basic structure of personality.

Sybil Eysenck produced a child's version of the EPQ, called the Junior Eysenck Personality Questionnaire (S. Eysenck, 1965). It was also translated into many languages, and again the cross-cultural evidence was consistent. Studies of children found the same three factors cross-culturally. This provided additional evidence for his theory. He followed up this research with longitudinal studies to demonstrate that the structure was stable across time (H. Eysenck, 1967, 1982a, 1990b, 1993; S. Eysenck, Barrett and Barnes, 1993; S. Eysenck, Makaremi and Barrett, 1994). S. Eysenck concluded that all this research provided confirmatory evidence that there is a genetic basis



for the primary personality types. They are all found cross-culturally, despite social pressures within different cultures to develop in specific ways. The same structures are found in children as in adults. Reviews of studies of identical and fraternal twins, raised together and raised apart, found the same structures and personality similarities between individual biological relatives and lend considerable support for a significant genetic component to personality. As mentioned previously, details of genetic studies of personality are included in Chapter 8.

Eysenck (1990b) does still see a role for the environment in the development of personality. He suggested that while individuals' genes provide a strong tendency to become a certain type of person, some modification is possible. He suggested that the way that children are socialised was crucial here. However, he did not provide a detailed developmental theory to explain how the environment might intervene in development or to specify the environment that would promote healthy development.

## Psychopathology and Eysenck's therapeutic approach

Eysenck was a behaviourist, and therefore he placed a lot of emphasis on how learned behaviour was acquired. Thus, healthy and abnormal behaviour is the result of the way that individuals respond to the stimuli in their environment. Some individuals are more susceptible to developing psychopathology because of their inherited vulnerabilities. For example, Eysenck suggested that individuals who score highly on the personality trait neurosis are more likely to develop clinical neuroses than are those with low scores.

Eysenck's approach to treatment involved behaviour therapy. You may recall that we covered this in Chapter 4. He was extremely hostile to all other therapies but particularly targeted psychoanalytic approaches. Indeed, Eysenck (1965a) claimed that the only effective therapy was behaviour therapy. As mentioned in the Profile box, Eysenck developed clinical psychology training in the United Kingdom and was an active clinician as well as a personality researcher for much of his life.

## Eysenck's contribution to trait theorising

Eysenck's theorising is fairly comprehensive, although not all aspects of it are equally well developed. This is particularly true of the developmental aspects and the biological basis, as you will see in Chapter 8. He also focuses heavily on genetic factors and pays much less attention to the social context within which much behaviour occurs and that may affect personality and behaviour in particular situations. He would argue that personality determines to some

extent the situations that individuals choose to be in, but that is debatable to some extent. In terms of heuristic value, Eysenck has been very influential. His critique of all therapies, apart from behaviour therapy, stimulated therapists to evaluate their work and led to a large increase in evaluative research on therapies. His work also has significant applied value. He demonstrated a rigorous approach to personality theorising. He moved beyond many personality trait researchers in that he tried to provide not merely a description of personality structure but also an explanation of what caused differences in personality, with his genetic studies and his biological theory. He also provided a fairly robust measure of personality. His work has stimulated an enormous amount of research. Eysenck founded the journal *Personality and Individual Differences*, and its continued growth and development attests to his influence over many years.

In one other aspect, his theory can perhaps be criticised for being too parsimonious, having only three factors. Do three factors really represent the basic structure of personality? This question of the number of factors necessary to describe personality structure is what we shall discuss next. There has been considerable debate in the psychological literature about the number of factors required for an adequate description of personality and, as we shall see, Eysenck before his death contributed to this discussion.

## The five-factor model

Psychologists increasingly agree that five supertraits may adequately describe the structure of personality. The evidence to support this contention has come from several sources. There is still some debate, as we shall see, about how to label these factors; but this is perhaps unsurprising given that assigning labels is the most subjective aspect of factor analysis. Researchers are likely to have different opinions about which words best describe the constituent traits that make up a supertrait. We shall begin by examining the evidence for five factors, and then we will look at where this leaves Eysenck's three-factor model and Cattell's sixteen-factor model. Finally, we will evaluate the trait approach to personality.

## Evidential sources for the five-factor model

There are three evidential sources for the five-factor model:

- the lexical approach;
- factor analysis evidence for the five-factor model;
- other evidence in support of the five-factor model of personality.

## The lexical approach

You will recall that earlier in this chapter, we discussed the lexical hypothesis. This is the hypothesis that it is the differences in personality that are important for social interaction, and human societies have labelled these differences as single terms. Several detailed accounts of the lexical approach and its history are available if you want to explore this theory further (De Raad, 2000; Saucier and Goldberg, 2001).

You will recall that Cattell's 16PF came from the factor analysis of the list of 4,500 trait names identified by Allport and Odbert (1936). Cattell produced a 16-factor solution. Fiske (1949) reanalysed the same data but could not reproduce the 16 factors; he published instead a five-factor solution. This work was ignored for a long time. Tupes and Christal (1961/1992) reported five factors from analyses of trait words in eight different samples. Norman (1963) revisited the earlier research and reproduced the same five-factor structure using personality ratings of individuals given by their peers. Digman and Takemoto-Chock (1981) carried out further analyses and confirmed Norman's five-factor solution. Goldberg (1981) reviewed all the research and made a convincing argument for the Big Five. Since then, Goldberg and his team have carried out an extensive research programme investigating personality traits, and Goldberg (1990) concluded that in the English language trait descriptors are versions of five major features of personality: love, work, affect, power and intellect. Since then, the research has spread to other languages. Saucier and Ostendorf (1999) used a set of five hundred personality traits and found a five-factor structure in the German language, for example.

Saucier and Goldberg (2001) have described the lexical approach to investigating whether the five-factor structure is universally applicable as an **emic approach** to research. (See Stop and think: Lexical approaches produce descriptive models of personality traits, below.) Basically, what the researchers do is to use the personality terms that are found in the native language of the country. They contrast this with what they call the **etic approach**, which uses person-

ality questionnaires translated from another language that in practice tends to be English. Saucier and Goldberg (2001) report that etic approaches tends to replicate the five-factor structure while there is more variability reported in studies using emic approaches. Perugini and Di-Blas (2002) discuss this issue further in relation to emic and etic data they collected on Italian samples. They point out that in the etic approach, the questionnaires being translated are based on five-factor structures found in the original language. Goldberg and his research team make a case for the necessity of further study of cultural differences in personality trait use that are being found using emic approaches as a core part of the search for the universal structure of personality. Goldberg's research team has made available copyrighted free adjective scales that can be used to measure the five factors and personality scales for measuring them. These can be accessed from his website and the address included at the end of the chapter.

## Factor analysis evidence for the five-factor model of personality

This is the second source of evidence for the existence of a structure of five factors. Costa and McCrae (1985, 1989, 1992, 1997) are arguably the most influential researchers in this area, and their factor solution has come to be called the Big Five Model. This approach requires large samples of participants to complete at least two personality questionnaires. The resultant data set is then factor-analysed to uncover clusters of traits. The consistent finding is the emergence of five factors or dimensions of personality.

It is important to stress that it is the analysis of data that has produced the factors, not exploration of a theory about the number of factors necessary in a model. This is not the usual approach in psychology. Usually researchers begin with a theoretically based hypothesis about some aspect of behaviour. They then collect their data, and their results either support or refute their original theory driven hypothesis. In contrast, with the five-factor research, the

## Stop and think



### Lexical approaches produce descriptive models of personality traits

You may recall from our early discussion that lexical approaches produce descriptive models of personality traits, and you need to bear this fact in mind. At this stage in their development, the lexical approaches do not explain why this structure is found, other than to refer to the lexical hypothesis. There are no explanatory

models offered. However, they are a valuable source of confirmatory evidence for the existence of the five-factor model. If Saucier and Goldberg's suggestion to explore the differences uncovered by emic studies is followed up, this then might lead to explanatory models linking differences to cultural practices.

hypothesis that five factors represent the basic structure of personality has come from the data that was collected. In other words, the Big Five model is a data-derived hypothesis as opposed to a theoretically based one.

These are the factors described by the American personality researchers Costa and McCrae (1992), who measured personality with their well-known Neuroticism, Extraversion, Openness Personality Inventory (NEO-PI-R). The Big Five factors are **Openness, Conscientiousness, Extraversion, Agreeableness** and **Neuroticism**. You can use the acronym **OCEAN** to help you remember what the factors are called. More detailed descriptions of each factor are now provided. Each factor represents a continuum along which individuals can be placed according to their scores:

- **Openness** – This factor refers to the individual having an openness to new experiences. It includes the characteristics of showing intellectual curiosity, divergent thinking and a willingness to consider new ideas and an active imagination. Individuals scoring highly on openness are unconventional and independent thinkers. Individuals with low scores are more conventional and prefer the familiar to the new.
- **Conscientiousness** – This factor describes our degree of self-discipline and control. Individuals with high scores on this factor are determined, organised and plan for events in their lives. Individuals with low scores tend to be careless, easily distracted from their goals or tasks that they are undertaking and undependable. If you look closely at the trait descriptors included in conscientiousness, you will see that they are all attributes likely to become apparent in work situations. For this reason, they are sometimes referred to as the **will to achieve** or **work dimension**.
- **Extraversion** – This factor is a measure of the individual's sociability. It is the same factor as described by Eysenck earlier in this chapter and by the psychoanalyst Jung in Chapter 3. Individuals who score highly on extraversion are very sociable, energetic, optimistic,

friendly and assertive. Individuals with high scores are labelled extraverts. As with the Eysenck and Jung descriptions, individuals with low scores are labelled introverts. Introverts are described as being reserved, independent rather than followers socially, even-paced rather than sluggish in terms of their pace of work.

- **Agreeableness** – This factor relates very much to characteristics of the individual that are relevant for social interaction. Individuals with high scores are trusting, helpful, softhearted and sympathetic. Those with low scores are suspicious, antagonistic, unhelpful, sceptical and uncooperative.
- **Neuroticism** – This factor measures an individual's emotional stability and personal adjustment. Costa and McCrae (1992) suggest that although a range of emotions exists, individuals who score highly on one also rate highly on others. In psychological terms, the various emotional states are highly correlated. Thus, the individual who scores highly on neuroticism experiences wide swings in their mood and they are volatile in their emotions. Individuals with low scores on the neuroticism factor are calm, well adjusted and not prone to extreme maladaptive emotional states. (Indeed, in some five-factor models of personality, this dimension is referred to as emotional stability.)

These are the five main dimensions popularly known as the Big Five. Within each of the main dimensions there are more specific personality attributes that cluster together, and all contribute to the category score. These subordinate traits are sometimes called facets (Costa and McCrae, 1992). The Big Five model is a hierarchical model similar in concept to Eysenck's model. Each of the Big Five factors consists of six facets or subordinate traits. The facets included in the NEO-PI-R (Costa and McCrae, 1992) are shown in Table 7.3. Thus, an individual's scores on the traits of fantasy, aesthetics, feelings, actions, ideas and values combine to produce their scores on the openness factor. The NEO-PI-R then allows measurement at a general factor level or on more specific

**Table 7.3** The constituent facets of the Big Five factors.

Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
Fantasy	Competence	Warmth	Trust	Anxiety
Aesthetics	Order	Gregariousness	Straightforwardness	Angry hostility
Feelings	Dutifulness	Assertiveness	Altruism	Depressions
Actions	Achievement striving	Activity	Compliance	Self-consciousness
Ideas	Self-discipline	Excitement seeking	Modesty	Impulsiveness
Values	Deliberation	Positive emotions	Tender-mindedness	Vulnerability

Source: Based on Costa and McCrae (1985).

factors. Obviously, the more specific the measure, the greater the likelihood of using it to actually predict behaviour.

### Other evidence in support of the Big Five

There is too much research supporting the Big Five for us to review it all here. Instead, we will cite some examples from the main areas. In terms of how well this model fits with other measures of personality, the evidence is largely positive. McCrae and Costa (1989) factor-analysed scores on the Myers–Briggs Type Inventory and found that it supports a five-factor structure. Boyle (1989) reported that the five-factor model is also broadly compatible with Cattell's fourteen-factor measure and Eysenck's three-factor measure. The latest measure of the 16PFI allows scoring on the Big Five (Conn and Rieke, 1994). Goldberg (1993) compared the five-factor model with Eysenck's three-factor model and concluded that two of the factors – extraversion and neuroticism – are very similar, and that psychoticism can be subsumed under agreeableness and conscientiousness.

The NEO-PI-R has also been translated into several other languages, and the same factor structure has been replicated (McCrae and Costa, 1997; McCrae *et al.*, 1998, 2000). If you recall, this evidence is not uncontroversial, based as it is on the etic approach to personality research that we discussed earlier. These researchers (McCrae and Costa, 1997; McCrae *et al.*, 1998, 2000) have also demonstrated that the observed personality differences are stable over time and have a genetic basis. To summarise, Costa and McCrae (1992) claim that the five factors represent the universal structure of personality based on all the evidence we have discussed. The factors are found in different languages, ages of people and races.

### Evaluation of the Big Five and trait approaches

Can we conclude then that the Big Five represent the structure of personality? Unfortunately, it is premature to say that there is total consensus on the model. There is increasing agreement that there are five factors, but there is still some level of disagreement about the exact nature of each of the five factors. Indeed, Saucier and Goldberg (1998) and Saucier (1995) argue that research should look for solutions beyond the current five-factor models. This is the scientific approach – to search for contradictory evidence instead of purely focusing on searching for confirmation, as the present research does.

There is some debate about how the factors should be labelled. Labelling factors depends on the researcher's

judgement about the best descriptor for the cluster of correlated traits. For example, the agreeableness factor has also been labelled conformity (Fiske, 1949) and likeability (Norman, 1963). The same debate applies for all the other factors.

Peabody and Goldberg (1989) have also demonstrated that the measures that are included in a questionnaire crucially affect the final factors produced. If a questionnaire does not have many items that measure openness, for example, then the description of openness that is produced will be narrower. There is still some argument about the number of traits, with studies reporting different numbers between Eysenck's three and seven (Briggs, 1989; Church and Burke, 1994; Zuckerman, Kuhlman, Joireman, Teta and Kraft, 1993). McCrae and Costa (1995) suggest that the number depends on the nature of the trait measures that are included. They point out that five-factor models tend not to include evaluative traits like moral/immoral. If evaluative traits are included, Almagor, Tellegen and Waller (1995) have suggested that a seven-factor solution emerges.

There has been some debate about what exactly some of the factors mean (Digman 1990). Are they perhaps linguistic categories that do not actually represent the underlying structure of personality? Is it that the five factors represent our ability to describe personality traits in language and are nothing to do with underlying structures? There is no easy answer to this question, although the accumulating weight of research evidence would seem to negate it. Is it perhaps that our cognitive abilities only allow for a five-factor structure but the reality is more complex and subtle?

Briggs (1989) has criticised the model for being atheoretical. As we have discussed earlier, the model is data driven and was not derived from a theoretical base. There are currently some attempts to address this with genetic studies and the search for a physiological basis for the observed differences, as you will see in Chapter 8. This criticism applies more generally to the trait approach, although theorists such as Eysenck saw theory building as being crucial within his approach.

One of the more general criticisms of trait approaches to personality is related to how the various measures are interpreted and used. For example, Mischel (1968, 1983a, 1990) has pointed out that many of these measures are largely descriptive and do not predict behaviour particularly well. Despite this claim, many of these measures are widely used to make important decisions about individuals' lives and in workplace situations are often blindly interpreted by people who are not psychologists. Mischel (1968) demonstrates that on average, personality trait measures statistically account for only around 10 per cent of the variance observed in behaviour. In other words, 90 per cent of the variance in behaviour is down



to something other than the effect of personality. However, Kraus (1995) has shown that the variance figure is not insignificant and is similar to that found in studies measuring the relationship between attitudes and behaviour. Mischel's criticism of the overreliance on trait measures to assess individuals has had beneficial effects in work settings. The practice currently is to use multiple measures of personality assessment in work settings. Psychometric assessments, individual and group tasks and interviews are frequently used together as an assessment package, and this prevents overreliance on the psychometric tool.

## Final comments

In summary, we have described the nomothetic approach to personality research. You should now appreciate the long history of attempts to describe and explain differences in personality. You should now understand what is meant by the lexical hypothesis and be familiar with the approach to data analysis employed by trait theorists. You should also be aware of the contributions of Allport, Cattell and Eysenck to understanding personality, as well as the approaches that have resulted in the identification of the Big Five personality traits.

## Summary

- Two assumptions underlie trait theory. The first is that personality characteristics are relatively stable over time. The second is that traits show stability across situations.
- Trait theorists are aiming to find the basic structure of personality and to produce reliable ways of measuring personality differences.
- William Sheldon outlined a description of personality, called somatypes, based on physique and temperament. He described three basic types of physique – endomorphy, mesomorphy and ectomorphy – and demonstrated that each body type was associated with a particular temperament.
- The lexical hypothesis was first put forth by Sir Francis Galton. It suggests that it is the important individual differences between people that come to be encoded as single word terms (trait descriptors). The lexical hypothesis led to attempts to categorise the important personality traits. With the advent of factor analysis, these trait lists were analysed to try to uncover the underlying structure.
- Gordon Allport identified 18,000 words, of which 4,500 described personality traits.
- Allport conceptualised human nature as normally being rational, creative, active and self-reliant. He used the idiographic approach to discover personal dispositions. He described three types of personality traits: cardinal, central and secondary.
- Allport emphasised the importance of the concept of self to any theory of personality. He hypothesised that children were not born with a concept of self but that it gradually developed, and it was a lifelong process. Allport was a pioneer in trait theory, and one of his important contributions was to alert psychologists to the limitations of trait approaches.
- Cattell's work marks the beginning of the search for the structure of personality using factor analysis. He made a distinction between traits that are genetically determined and those that are the result of environmental experiences. He defined three different types of traits: ability, temperament and dynamic. He subdivided dynamic traits into three types: attributes, sentiments and ergs. All these types of dynamic traits are organised in complex and interrelated ways to produce a dynamic lattice. He makes a further distinction between common traits and unique traits. The latter account for the uniqueness of human beings.
- Cattell made an important distinction between surface traits and source traits. Surface traits are collections of trait descriptors that cluster together in many individuals and situations. Using factor analysis, he uncovered underlying traits that he called source traits. These are responsible for the observed variance in the surface traits.
- Cattell used a variety of approaches to uncover the source traits of personality. He finally produced 16 factors and claimed that they represent the basic structure of personality. He developed the 16PF as a measurement tool.
- Eysenck's goals were to identify the main dimensions of personality, devise means of measuring them and test them using experimental, quantitative procedures. He defined personality as being the way that an individual's character, temperament, intelligence, physique and nervous system are organised. Traits are the relatively stable, long-lasting characteristics of the individual.
- Eysenck developed a hierarchical model of personality types. At the bottom level are specific behavioural responses called habitual responses. These come together to make up personality traits. Clusters of traits come together to make up personality types. Using factor analysis, Eysenck identified three types or supertraits that he hypothesised made up the basic structure of personality. He developed the

Eysenck Personality Questionnaire (EPQ) to measure these three types and their underlying traits.

- Eysenck claimed that about two-thirds of the variance in personality development can be attributed to biological factors. Environment influences how traits are expressed, but Eysenck argues that biology has imposed limits on how much an individual personality can change.
- There is good support for neuroticism and extraversion, including cross-cultural, developmental and longitudinal stability data. Psychoticism is the least reliable dimension.
- Eysenck provided not merely a description of personality structure but also an explanation of what causes differences in personality, with his genetic studies and his biological theory. His work has stimulated an enormous amount of research.
- There is a growing consensus that five supertraits make up the basic structure of personality. While there are arguments about the names accorded to these factors, those chosen by Costa and McCrae are the most popular. The Big Five factors are Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism (OCEAN).
- There are several sources of evidence underpinning the Big Five structure of personality. The first of these uses the lexical approach to uncover the structures. The second approach uses the factor analysis of personality questionnaires.
- The Big Five model is hierarchical, similar in concept to Eysenck's model. Each of the Big Five factors consists of six facets or subordinate traits. Costa and Macrae's NEO-PI-R measures both the subordinate traits and the supertraits.
- There is increasing agreement that there are five factors, but there is still some level of disagreement about the exact nature of each of the five factors. Debate continues about how the factors should be labelled.
- The lack of an underpinning theory is problematic for some psychologists. This trait approach is data driven, not theoretically driven, although theoretical support is now developing.



## Connecting up

- The personality theories covered in this chapter represent some of the most commonly used theories in the literature regarding main personality and individual differences. We go on to discuss the biological aspects of Eysenck's personality in the next chapter (Chapter 8), alongside other biological models of personality. In Chapter 10 we also explore an additional model of personality based on the lexical hypothesis, the HEXACO model of personality, which is an extension of the five factor model of personality.
- You may also want to return to Chapter 3 to look at the origins of extraversion in Jung's theory of personality.
- Throughout the rest of book, when we consider personality variables in a number of chapters, we generally refer to the three- and five-factor models of personality.



## Critical thinking

### Discussion questions

- Can you identify any traits that Allport would classify as unique?
- How useful are Allport's categorisations of types of traits? Can you identify examples of each type of trait?
- Compare and contrast Cattell's concept of ergs to Freud's categories of instincts.
- Does Eysenck make a convincing case for his three-factor structure of personality?
- Have psychologists finally uncovered the basic structure of personality?
- Can you identify any problems with the current approaches to determining the structure of personality?
- 'The five-factor model of personality is now dominant in the research literature'. Evaluate the validity of this statement.

## Essay questions

- Three, five or sixteen? Critically examine how many personality factors there are.
- Evaluate Eysenck's claim that his three factors are universal.
- Critically evaluate the evidence for the five-factor structure of personality.
- Discuss the contribution of Gordon Allport to the trait approach of personality.
- Discuss the contribution of Raymond Cattell to the trait approach.
- Compare and contrast two of the following three theories of personality
  - three-factor
  - five-factor
  - sixteen-factor
- Evaluate the five-factor model of personality and discuss its relationship to Cattell's theory of personality.



## Going further

### Books

- Allport, G. W. (1961) *Pattern and growth in personality*. New York: Holt, Rinehart & Winston. This is one of Allport's later texts, and it is written in an accessible style. It gives a comprehensive account of his position.
- Cattell, R. B. and Kline, P. (1977). *The scientific analysis of behaviour*. This book provides a fairly detailed account of Cattell's theory, methodology and research.
- Costa, P. T. Jr and McCrae, R. R. (2003). *Personality in adulthood, a five-factor theory*. London: Guilford Press.
- Saucier, G., Hampson, S. E. and Goldberg, L. R. (2000). Cross-language studies of lexical personality factors. In S. E. Hampson (ed.), *Advances in Personality Psychology*. London: The Psychology Press. This reading is an excellent summary of the lexical approach applied cross-culturally.
- Eysenck, H. J. (1970). *The structure of human personality* (3rd edn). London: Methuen. This text goes into more detail about Eysenck's model and is presented in an accessible format.
- Eysenck, H. J. and Eysenck, M. W. (1985). *Personality and individual differences: A natural science approach*. New York: Plenum Press. This book provides an excellent overview of Eysenck's work.
- De Raad, B. (2000). *The Big Five personality factors: The psycholinguistic approach to personality*. Seattle, WA: Hogrefe and Huber. This book provides an excellent summary of lexical approaches.

### Journals

- Zuckerman, M., Kuhlman, D. M., Joireman, J., Teta, P. and Kraft, M. (1993). A comparison of three structural models for personality: The big three, the Big Five, and

the alternative five. *Journal of Personality and Social Psychology*, 65, 757–768. This paper provides a good example of the research in this area. *Journal of Personality and Social Psychology* is published by the American Psychological Association and is available online via PsycARTICLES.

- Saucier, G. and Goldberg, L. R. (1998). What is beyond the Big Five? *Journal of Personality*, 66, 495–524. This paper includes a critique of much of the current research effort and some timely warnings about future directions. *Journal of Personality* is published by Blackwell Publishing and is available online with Blackwell Synergy, Swets Wise and Ingenta.
- McCrae, R. R., Costa, P. T., Ostendorf, F., Angleitner, A., Hrebicková, M., Avia, M. D., Sanz, J., Sánchez-Bernados, M. L., Kusdil, M. E., Woodfield, R., Saunders, P. R. and Smith, P. B. (2000). Nature over nurture: Temperament, personality, and life span development. *Journal of Personality and Social Psychology*, 78, 173–186. This paper begins to outline a theoretical underpinning for the Big Five. *Journal of Personality and Social Psychology* is published by the American Psychological Association and is available online via PsycARTICLES.

You will regularly find research articles relating to the personality theories described in this chapter in the following journals:

- **European Journal of Personality**. Published by Wiley. Available online via Wiley InterScience.
- **Journal of Personality**. Published by Blackwell Publishing. Available online via Blackwell Synergy, SwetsWise and Ingenta.
- **Personality Assessment**. Published by the Society for Personality Assessment. Available online via Business Source Premier.

- **Journal of Research in Personality.** Published by Academic Press. Available online via IngentaJournals.
- **Personality and Social Psychology Bulletin.** Published by Sage Publications for the Society for Personality and Social Psychology. Available online via SwetsWise, Sage Online, Ingenta and Expanded Academic ASAP.
- **Personality and Social Psychology Review.** Published by the Society for Personality and Social Psychology, Inc. Available online via Business Source Premier.
- **Personality and Individual Differences.** Published by Pergamon Press. Available online via Science Direct.

## Web links

- **Goldberg's International Personality Item Pool (IPIP).** A scientific computer-supported system for the development of advanced measures of personality and other individual differences. The IPIP website is intended to provide rapid access to measures of individual differences, all in the public domain, to be developed conjointly among scientists worldwide (<http://ipip.ori.org/ipip/>).
- A good website outlining many of the personality theories covered in this chapter of the book is at <http://www.personalityresearch.org/>.



## Film and literature

- **Abigail's Party** (1970, BBC Play for Today). If you want to see a film example of the contrast between an extraverted individual and an introverted individual, then the BBC Television film of the play *Abigail's Party* is a great example. The contrasts between the two main female characters typify these two personality traits. This is perhaps a little dated, but well worth viewing if you can get a copy or get the opportunity to see the play. Other films, that may be more easier to get hold of, that depict stories around introverted individuals include
- **Amélie** (2001, directed by Jean-Pierre Jeunet) and **Edward Scissorhands** (1990, directed by Tim Burton).
- **Cruel Intentions** (1999, directed by Roger Kumble), **Dangerous Liaisons** (1988, directed by Stephen Frears) and **Collateral** (2004, directed by Michael Mann). In this chapter we outlined the concept of psychoticism, a personality that emphasises hostile, cruel and inhumane traits with a strong need to ridicule and upset others. All these films have lead characters who clearly show these traits.



Explore the website accompanying this text at [www.pearsoned.co.uk/maltby](http://www.pearsoned.co.uk/maltby) for further resources to help you with your studies. These include multiple-choice questions, essay questions, weblinks and ideas for advanced reading.