Personality, Part II: Validating Personality Traits

3

Key Terms

behaviorism
central tendency
cognitive psychology
mean
mediation
moderation
Pearson correlation
phenomenology
positive psychology

psychoanalysis
psychodynamic theories
psychogenic
regression analysis
schema
self-efficacy
somatogenic
standard deviation

Chapter Outline

3.1 INTRODUCTION

The previous chapter was concerned with the key theoretical and methodological issues underlying the scientific approach to the study of personality. From a methodological point of view, the focus of chapter 2 was largely *psychometric*, as this approach represents the state-of-the-art technique for assessing latent individual differences. The theoretical focus, on the other hand, was on the notion of personality *traits* as dispositional tendencies defining major differences between individuals' consistent patterns of thoughts, emotionality, and behavior. Thus, chapter 2 was largely devoted to explaining how self-report inventories have been used to identify the major dimensions by which people differ.

After longstanding debate on whether individual differences in personality should be conceptualized in terms of three, five, or 16 major traits, most differential psychologists agree on the advantages of utilizing a Five Factor or Big Five framework, which posits Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness as the basic dimensions of personality (Costa & McCrae, 1992). Today, the Big Five represents the common currency or universal language of personality research, enabling researchers to interpret, compare, and integrate findings in an orderly and reliable manner.

Does personality matter? Consensus on which taxonomy and instrument should be used is necessary but not sufficient to answer this question. Rather, individual differences in personality need to be compared with other outcomes if one wishes to test whether personality measures are useful to predict different behaviors and real-life outcomes. To this end, this chapter will examine the relationship of personality with other constructs, such as educational attainment (Chamorro-Premuzic & Furnham, 2003a, b), job performance (Ones, Viswesvaran, & Schmidt, 1993), antisocial behavior (Krueger, Caspi, & Moffitt, 2000), interpersonal relations (Caughlin, Huston, & Houts, 2000), and happiness (Furnham & Cheng, 1997, 1999). Ozer and Benet-Martinez's (2006) review of the "consequential outcomes of personality" provides a fresh perspective on the variety of real-life implications of personality traits and is testimony to the unprecedented interest that exists in personality correlates.

It would be impossible to understand the relationship between personality and any other construct without having at least a basic idea of the statistical analyses used. Thus, before looking at the different consequences of personality traits, I will briefly examine the rationale underlying correlational designs, including historical antecedents of such surveys and the problem of causality.

This chapter concludes by looking at non-dispositional approaches to personality and assesses the current status of some of the "grand theories" of personality that dominated the field during most of the previous century.

3.2 TESTING PERSONALITY THEORIES

The beginnings of personality research were characterized by the use of precarious methods of data collection, such that personality theories were often derived from *introspection*, *observations*, and *case studies* (see Box 3.1). However, modern approaches to personality can be distinguished from other more theoretical or speculative approaches in terms of their systematic gathering and analyses of empirical data. As seen in chapter 2, dispositional theories depend on large datasets, which are generated by self-report inventories. After these have been collected, the relationship between different variables can be examined through diverse statistical tests, notably Pearson's correlation coefficients (see below). Effectively, this process enables researchers to validate or test personality theories.

3.2.1 Correlation

The statistical test of correlation is widely employed to assess the extent to which two variables are related to each other. It is important to summarize the essential idea underlying this test before we examine the relationship between personality traits and other constructs.

The most widely used correlational test is the *Pearson Product-Moment Correlation Coefficient*, simply known as the **Pearson correlation**. This coefficient is represented by the lowercase letter r and takes its name from Karl Pearson (1857–1936), a famous British statistician. Pearson entered university at the age of 9 and studied a variety of subjects,

> **Pearson correlation** commonly used name for the Pearson Product-Moment Correlation Coefficient, represented by r, indicating the degree to which two variables are related

Box 3.1

NON-CORRELATIONAL RESEARCH METHODS IN PSYCHOLOGY

Introspection is one of the oldest methodological tools of psychology and consists of thinking about one's own experience in order to understand a phenomenon, e.g., memory or personality. For example:

> Imagine a researcher is attempting to study memory, which he defines as the capacity to retain and recall information. In order to test this capacity, he takes one hour to memorize a poem. During this time he reads the poem over and over again and tries to remember as many details about it as he can. After that, he closes the book and starts writing what he remembers. At the same time, however, he tries to identify and describe the processes that are occurring in his mind.

In the above example there is no distinction between the experimenter and his object of study. Thus, object and subject of knowledge are the same and as variations in one take place, variations in the other take place too. Memory is affecting the experimenter's capacity not only to remember the poem but also to recall the events that took place while he was studying the poem. Although contemporary studies are often based on the premise of introspection (for instance, in vision experiments the experimenter is often the only subject of the study), they meet objective and reliable criteria by combining established technological instruments with mathematical algorithms. But the beginnings of scientific psychology were based on a more rudimentary notion of introspection, particularly when examining latent variables such as personality.

One alternative to introspection has been the *observational* method, whereby the experimenter observes *others* rather than herself. Although observational designs overcome the epistemological problem of including the experimenter within the object of study, they do not solve the problem of subjectivity. First, it is difficult to observe any social event without being at least tacitly part of that situation. Anthropologists have long been aware of this difficulty and have thus preferred the term "participant observation" to refer to observational designs. Indeed, there have been extensive epistemological accounts, such as that by Bachelard (1938/1996), on the scientific bias underlying participant observation, which turns subjectivity into an "epistemological obstacle." Second, experimenters may often establish comparisons (even if implicitly) between themselves and the participants, which brings us back to the problem of self-observation. Last but not least, individuals may behave in a different way if they know they are being observed. Although this last point has long been addressed by different means that ensure the "absence" of the experimenter (e.g., confederates, one-way mirrors, hidden video cameras), most observations take place in laboratory conditions that differ quite drastically from individuals' natural settings.

A third method, *case studies*, attempts to provide a parsimonious and detailed picture of individual cases. No wonder, then, that case studies have constituted the primary tool of psychodynamic theories such as psychoanalysis. In their basic form, case studies may simply consist of repeated observations and are thus observational in nature. More sophisticated versions, however, may incorporate different techniques, such as unstructured interviews and even standardized tests. In psychology, most case studies are drawn from clinical sessions and rely on the therapist's observations. The major weakness of case studies is that, by definition, they are unlikely to be representative of the wider population. As such they are most useful to highlight aspects of theories that may not be as clearly manifested in the overall population. To the extent that theorists are "selective" when reporting case studies – by focusing on those cases that are most supportive of their theories – case studies may be exceptions rather than examples and their underlying theories may not be supported by larger, more representative sets of data.

Most if not all methodological drawbacks discussed above can be overcome by using *experimental designs*, which enable the experimenter to manipulate conditions or independent variables to test their effects on outcomes or dependent variables. Thus experimental designs are particularly robust for testing direct causational paths. This, however, requires the experimenter to "control" for irrelevant factors, which can be achieved through randomization and standardization of laboratory conditions.

Although experimental designs represent the state-of-the-art methodology in most areas of psychology, they are not straightforwardly applied to personality studies. One problem is that it is not possible to manipulate personality traits, which represent latent behavioral dispositions. Indeed, the study of personality would lose much of its appeal if we artificially changed people's habitual way of behaving, thinking, and feeling. This still leaves us with the possibility of manipulating variables that may moderate the relationship between personality and behavior, that is, have a joint impact with personality on behavioral outcomes. For example, a study may test whether caffeine moderates the relationship between Extraversion and arousal, or whether pressure moderates the effects of Neuroticism on test-anxiety. This, however, requires measures of personality – which cannot be obtained through experimental means.
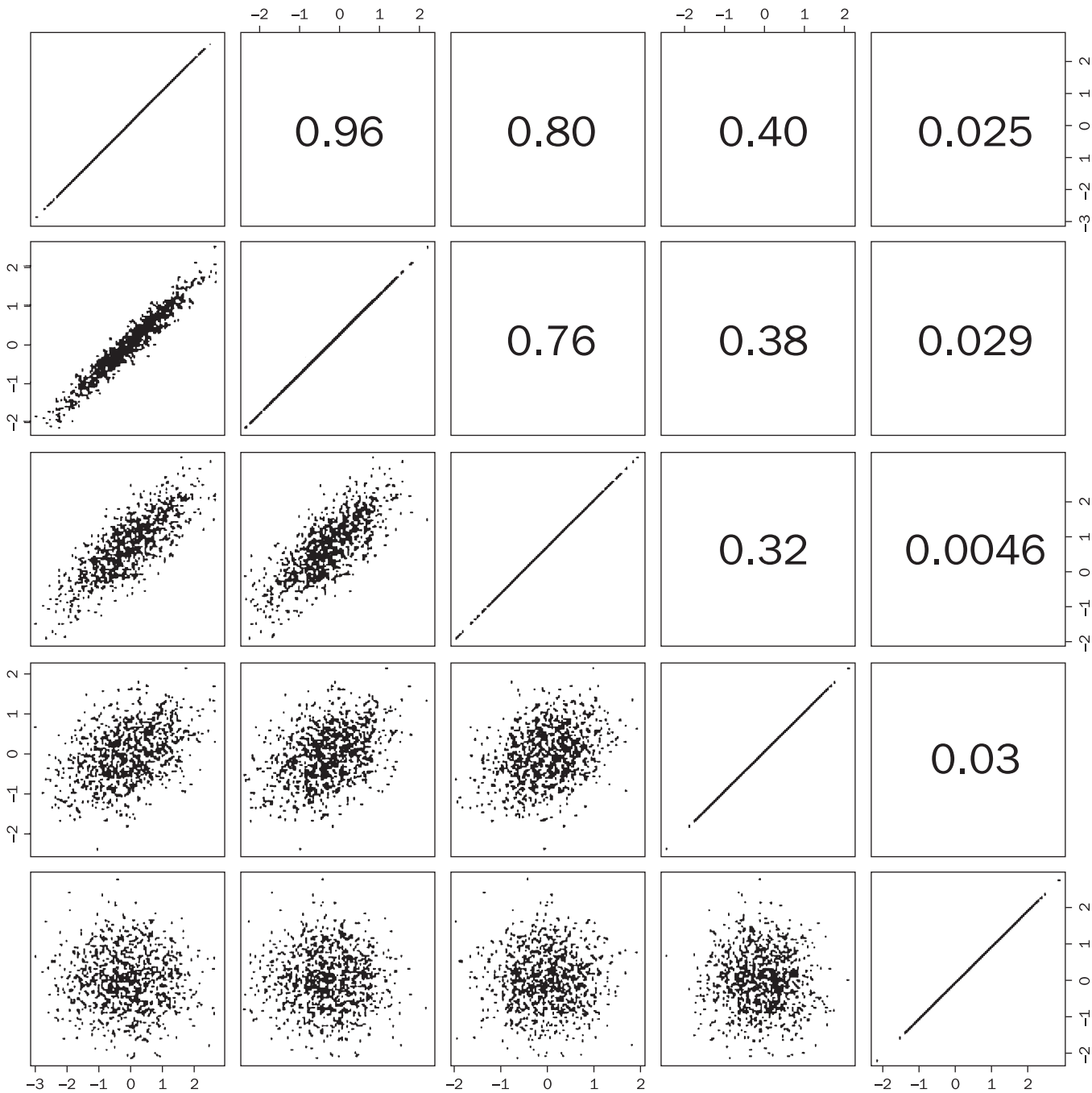
Figure 3.1 Simple example of linear correlation. In each panel, 1000 pairs of normally distributed numbers are plotted against one another (bottom left), and the corresponding correlation coefficient is shown (top right). Along the diagonal, each set of numbers is plotted against itself, defining a straight line with correlation +1. Five sets of numbers were used, resulting in 15 pairwise plots.

including medieval and German literature, before founding the world's first university statistics department at University College London. Pearson's statistical tests were an attempt at providing robust scientific instruments for the study of individual differences, in particular Galton's theory of hereditary genius (see 5.3.1).

In simple terms, the Pearson correlation is a measure of the extent to which two variables (e.g., x and y) are interrelated or vary with each other. This relationship is represented in a *linear* manner, so that, when graphically depicted, we can trace a straight line through all the data points plotted along the x and y coordinates of a scattergraph (see Figure 3.1).

For example, let variable x = smoking (measured by number of cigarettes per day) and variable y = Neuroticism (measured by a self-report scale with a $0-60$ range). Both x and y are measurable, quantitative variables. To calculate the correlation between x and y, the following formula can be used:

$$r = \frac{\sum_{i-1}^{n}(X_i - \bar{X})(Y_i - \bar{Y})}{(n-1)S_X S_Y}$$

Although few people today would calculate correlations by hand, it is useful to understand this formula. As stated, x and y represent our variables, respectively smoking and Neuroticism. The bar above these letters symbolizes the *average* or arithmetic **mean**, which is obtained by adding up all scores and dividing them by the number of cases. S stands for **standard deviation** (another measure developed by Pearson) and is an indicator of the average distance between the mean and other cases in the sample (see also 5.3.3). Thus the standard deviation tells us what the **central tendency** is or how widely spread the scores are. For instance, a sample with a mean of 10 (cigarettes smoked per day) and a standard deviation of 1 would indicate that most participants smoke between 9 and 11 cigarettes, whereas a sample with a mean of 10 and a standard deviation of 5 would indicate that most participants smoke between 5 and 15 cigarettes. Finally, n refers to the sample size (number of participants).

> **mean** the average value, obtained by adding up all scores and dividing them by the number of cases

> **standard deviation** a comparative indicator of a person's score against the general population

> **central tendency** measures of the "average," which indicates what constitutes a typical value

Let us assume that our sample is composed of 50 participants ($n = 50$) and that the average number of cigarettes smoked per day is 8. On the other hand, let us suppose that the average score on Neuroticism is 13. If a participant smokes more than 8 cigarettes per day and has a Neuroticism score higher than 13, the multiplication in the upper part of the formula will result in a positive number. The same would happen if both values were below average (for instance, if a participant smoked 7 cigarettes per day and had a stress score of 10), because the product between two negative numbers is always positive. Thus a positive r value refers to a pattern in the data where large values of one variable are associated with large values of the other variable, and vice versa. Conversely, if the general tendency was that larger values of one variable are associated with smaller values of the other variable, the correlation would be negative. In order to arrive not just at the sign – positive or negative – but also at the *value* of the correlation, we need to include information about the standard deviation.

The value of r can range from −1.00 (perfect negative relationship between two variables) to +1.00 (perfect positive relationship between two variables), with an intermediate value of 0 (no association at all between two variables). Such values, however, are rarely found in psychological research. More frequently we find r values close to 0, indicating weak or no association between two variables. Then there are all the values in between. The general consensus in psychology (it would be very different if we were doing research in the natural sciences) is to consider $r > .70$ and $< −.70$ as indicating a "strong" or "high" relationship, whilst r values ranging from .30 to .70 and −.30 to −.70 are typically regarded as "moderate," and r values ranging from .00 to .30 and .00 to −.30 are usually taken as indicators of a "weak" or "modest" relationship. However, it is always difficult to interpret

the *causal* direction underlying a correlation, that is, which variable, if any, influences which (see Box 3.2).

3.2.2 Regression analysis

If you understood the basic idea underlying correlations, you should have no trouble understanding **regression analysis**, which follows very similar principles and was also introduced by Pearson. Indeed, when there are only two variables, there is no difference between correlational and regression analyses. When more variables are considered, however, the statistical method of regression enables us to *predict* one variable (the criterion) by another set of variables (the predictors). Although there are several types of regressions, such as logistic, poisson, and supervised, here I shall focus on *linear* regression analysis, which, like Pearson's correlation, involves fitting a line through the data.

> **regression analysis** statistical technique that enables one variable (the criterion) to be predicted by another set of variables (the predictors)

Typical examples of regressions in differential psychology are the dependence of overall school grades on students' IQ and study habits (e.g., number of hours revised), or the dependence of job satisfaction on personality and motivation. This dependence is called the *regression* of Y (e.g., school grades, job satisfaction) on X (e.g., IQ, motivation). In fact, regression applies to a great part of this chapter as it deals with the predictive validity of personality with regard to different outcomes, e.g., social and antisocial behavior, educational and job performance, romantic relationships, and health.

If we plot a line in a bidimensional space (corresponding to two variables), the linear regression can be defined in terms of $Y = a + b \times X$, which simply means that, in order to calculate the value of factor Y, we need a constant value or *intercept* (a), plus the product between the inclination or *slope* (also known as "regression coefficient) (b) and the value of factor X. For instance, if we wanted to estimate a student's final marks or great point average (GPA) as a function of her intelligence score (IQ), we could apply the following values to the formula: Y (GPA) = $1 + .02 \times X$ (IQ). Accordingly, a student with an IQ of 98 would be expected to have a GPA of 2.96, whereas a student with an IQ of 140 would be expected to have a GPA of 3.80.

Although predictions are never as accurate in psychology, that is no excuse for abandoning regression. On the contrary, regressions are important because they provide information on how accurate the prediction can be, or, in more technical terms, *how much variance is accounted for*. This information is provided by the R coefficient (not to be confused with the lower-case r for correlation). R indicates the extent to which the predictors (X variables) are related to the criterion (Y variable). The value of R may range from 0 to 1, and the higher this value the more accurate the prediction or more variance is explained.

On the other hand, the relationship between each predictor and the criterion variables is represented by the β coefficient, which, like the r coefficient in correlations, indicates the degree and direction of the relationship between two variables. β values have an absolute value that may range from 0 to 1, and the sign

Box 3.2

CORRELATION AND CAUSATION

The problem of *causality* has concerned philosophers and scientists alike for centuries. Causality is also a central issue in psychology. Given the large number of correlational designs employed in differential psychology, it is important to dedicate a few paragraphs – and hopefully much more time – to thinking about this issue.

The British philosopher Bertrand Russell (1872–1970) argued that a series of events may be called a "causal line if, given some of them, we can infer something about the others without having to know anything about the environment" (Russell, 1948, p. 333). How does this philosophical notion apply to psychological research designs?

Correlational designs indicate the relationship between different variables and can be interpreted according to both size (e.g., modest, moderate, large) and direction (i.e., negative or positive). However, interpretational problems arise when we attempt to understand the underlying causal paths to correlations, as correlation does not mean causation. Statistically, there is no scientific solution to this problem: causational tests seem to exceed the explanatory scope of correlational designs.

For example, knowing that smoking and Neuroticism are positively correlated does not really tell us whether one variable truly *affects* the other, and, if so, which one affects which. In Figure 3.2 you can see a graphical depiction of the hypothetical causational paths that may underlie the correlation between smoking and Neuroticism, and in fact the correlation between any two variables.

Accordingly, the correlation between Neuroticism and smoking may indicate that (H1) smoking causes Neuroticism
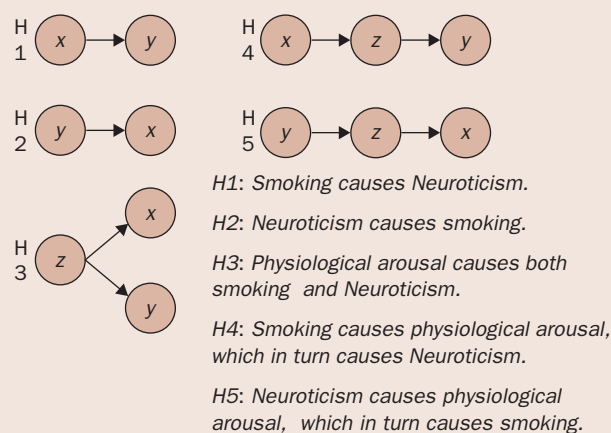

H1: *Smoking causes Neuroticism.*

H2: *Neuroticism causes smoking.*

H3: *Physiological arousal causes both smoking and Neuroticism.*

H4: *Smoking causes physiological arousal, which in turn causes Neuroticism.*

H5: *Neuroticism causes physiological arousal, which in turn causes smoking.*

Figure 3.2 Correlation and causation: five hypothetical paths.

(i.e., the more you smoke, the more anxious you will be); (H2) Neuroticism causes smoking (i.e., the more anxious you are, the more you will smoke); (H3) a third variable (e.g., physiological arousal) may simultaneously affect both smoking and Neuroticism; (H4) a third variable (e.g., physiological arousal) may mediate the effects of smoking on Neuroticism; and (H5) a third variable (e.g., physiological arousal) may mediate the effects of Neuroticism on smoking.

More sophisticated designs, such as longitudinal studies, can provide "chronological" data that may help us interpret the causational paths underlying correlations.

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indicates whether variables move in the same (positive) or opposite (negative) direction. In addition, regression analysis indicates the degree to which a predictor and criterion are related when controlling for other predictors. This information is provided by the standardized β coefficient. When the predictors are significantly intercorrelated, standardized βs will differ quite drastically from normal βs. For instance, IQ and educational level may successfully predict future job salary (i.e., how much a person will earn) and have moderate β values. Yet, since these two predictors are likely to show a substantial degree of overlap, the standardized βs for one may be higher than for the other. Thus standardized βs tell us which is the strongest predictor in the model when all predictors are considered simultaneously.

3.2.3 Mediation, moderation, and structural equation modeling

Structural equation modeling (SEM) is a statistical tool that enables researchers to test causal models. In essence SEM is a form of regression, although it allows for more sophisticated analyses to be conducted. For example, regression analyses

distinguish clearly between a set of predictors and a criterion, whereas SEM can treat a variable as predictor and criterion at the same time. Thus with SEM we may test a *causal chain*, or whether some x affects y and y affects z at the same time. Furthermore, SEM allows us to test whether the relationship between x and z is merely a function of y. This type of association is called **mediation** (Baron & Kenny, 1986) and is graphically represented and exemplified in Figure 3.3.

Although mediational tests do not completely solve the problem of causality (i.e., they are still based on correlational or similar statistical indicators), they represent a

> **mediation** correlation between two variables (e.g., gender and stress) that is caused by a third or latent variable (e.g., smoking)

step forward from correlations and regressions because they reveal information about *latent* effects. For example, in Figure 3.1 variable y would be identified as the third or latent factor causing variables x and z to correlate, because when y is eliminated from the model, x and z are significantly correlated, but when y is included they no longer correlate significantly. It is also noteworthy that the model shown in Figure 3.1 represents a *full* mediation between the variables. Yet, there are cases whereby third

- Gender is correlated with *both* smoking and stress (i.e., men smoke more, and men are more stressed).
- However, when smoking levels are considered the correlation between gender and stress is *no longer significant*.
- This indicates that the relationship between gender and stress is *fully mediated* by smoking.
- Thus, gender affects smoking levels, which in turn affect stress level, i.e., the reason why men stress more than women is because they smoke more!
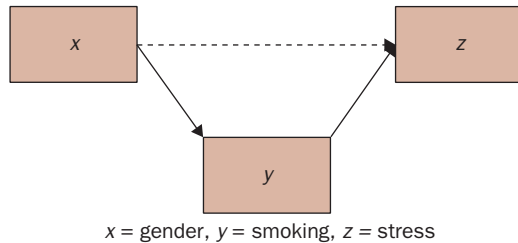

x = gender, *y* = smoking, *z* = stress

Figure 3.3   Mediation.

- Gender and smoking are *uncorrelated* or independent (they do not overlap).
- Gender and smoking are both correlated with stress.
- Both men and women are more likely to experience stress if they are smokers.
- Both smokers and non-smokers are more likely to experience stress if they are male.
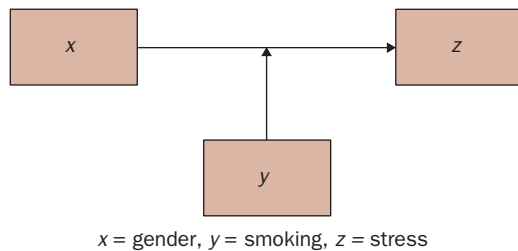

x = gender, *y* = smoking, *z* = stress

Figure 3.4   Moderation.

variables *partially* mediate others. In a partial mediation, the correlation between *x* and *z* would decrease, but still be significant, when *y* is considered.

A different causal path can be tested through *moderational* models (Baron & Kenny, 1986), which consist in independent effects of two or more variables on another (see Figure 3.4). Unlike mediation, **moderation** has uncorrelated predictors. For example, let us assume that gender (*x*) and smoking (*y*) are *not* significantly related (i.e., number of cigarettes smoked is not a function of whether individuals are male or female), but that both variables are related to stress (*z*). In that case, the effects of gender on stress may be *moderated* by the number of cigarettes smoked: men will stress more if they are smokers, and so will women, whereas smokers will stress more if they are men, and so will non-smokers.

In Figure 3.4, both predictors are related to the outcome (although the connector from *y* has been pointed towards the $x \rightarrow z$ path to emphasize the moderation). However, third

moderation the independent effects of two or more variables on another variable

variables can moderate a relation even if they do not exert a main effect on the outcome. In fact, it is often the case that the effects of the moderating variable go in the *opposite* direction than the other predictor. For example, exercise may moderate the relationship between smoking and health, such that non-smokers who do not exercise may be as unhealthy as smokers who exercise, and vice versa.

Although SEM provides an ideal access to testing mediational and moderational effects, these can also be tested through regressions (i.e., by entering each predictor in different steps or blocks first, and then regressing one predictor onto another). Unlike regressions, SEM can simultaneously treat the same variable as predictor and criterion. Furthermore, SEM enables us to include *latent variables* at the same time by identifying factors underlying a set of measured variables. This approach follows the same rationale illustrated in Figure 2.6 and the sequence of steps discussed in sections 2.7 and 5.5 – also illustrated in Figure 5.2. Needless to say, the technicalities and mathematical aspects of SEM are covered in relevant sources (Bentler, 1995, 2002; Bollen, 1989; Jöreskog, 1978) and the website www.utexas.edu/its/rc/tutorials/stat/amos/.

3.3 PERSONALITY AND SOCIAL BEHAVIOR

Although almost every form of behavior has social implications, psychologists have used the terms *prosocial* and *antisocial* to refer to a relatively specific set of behavioral outcomes. Prosocial behaviors include altruism, volunteerism, community involvement, and social services, whereas antisocial behaviors include crime, substance abuse, and truancy. Predictably, there has been wider interest in antisocial than in prosocial behavior, though recent years have seen an upsurge in studies examining the positive social correlates of personality (Ozer & Benet-Martinez, 2006).

The most important personality correlates of prosocial behavior are Extraversion and Agreeableness (Carlo, Okun, Knight, & de Guzman, 2005). Studies suggest that extraverted and agreeable individuals have a general tendency to help others and are more motivated to engage in altruistic behaviors, such as volunteering and charity work. Penner, Fritzsche, Craiger, and Freifeld (1995) identified two salient components underlying prosocial behavior, namely *empathy* and *helpfulness*, and found the former to be strongly correlated with Agreeableness and the latter with Extraversion (see also Penner, 2002).

On the other hand, studies on the personality correlates of antisocial behavior have identified low Conscientiousness and low Neuroticism as the major predictors. The fact that antisocial behavior was more related to these traits than to Extraversion emphasizes the idea that prosocial and antisocial behavior are not two opposite extremes of the same dimension but, rather, two different factors (though negative correlations would be expected) (Krueger, Hicks, & McGue, 2001). The effects of Conscientiousness on antisocial behavior seem widespread. Low Conscientiousness predicts adolescent conflicts (Ge & Conger, 1999), substance abuse (Walton & Roberts, 2004), criminal acts (Wiebe, 2004), and even suicide attempts (Verona, Patrick, & Joiner, 2001). These findings are consistent with the interpretation
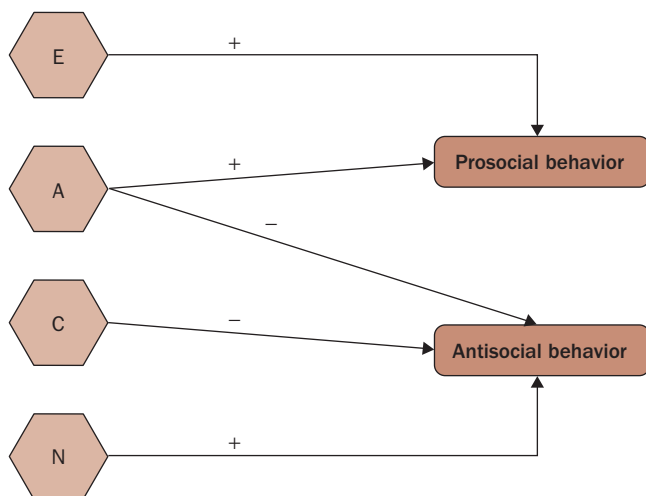
Figure 3.5 Personality and social behavior.
E = Extraversion, A = Agreeableness, C = Conscientiousness,
N = Neuroticism.

of Conscientiousness as a negative correlate of Psychoticism (Eysenck & Eysenck, 1985; Eysenck, 1992) and highlight the fact that conscientious individuals have a higher sense of morality and self-control, which is the tendency to suppress impulsive, risk-taking, and physical behaviors. (See Figure 3.5.)

The Big Five personality traits have also been examined with regard to political attitudes, which are undoubtedly important predictors of social behavior. The strongest personality correlate of political attitudes is Openness to Experience, which negatively associated with *conservatism* and *authoritarianism* (a construct put forward by Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950).

For instance, Riemann, Grubich, Hempel, Mergl, and Richter (1993) and Van Hiel and Mervielde (1996) report correlations in the order of $r = -.57$ and $-.42$, respectively, between Openness and conservatism in European samples. Similar results have been reported for larger US samples. For example, McCrae (1996) reported a correlation of $r = -.35$ between Openness and authoritarianism, whilst Trapnell (1994) reported more variable correlations of Openness with conservatism (from $r = -.18$ to $r = -.64$) on one hand, and authoritarianism ($r = -.29$ to $r = -.63$) on the other. Some predicted a quadratic relationship between Openness and political ideology, such that extreme attitudes (both left and right) are associated with lower Openness scores (Greenberg & Jonas, 2003; Wilson, 1973). Thus higher Openness would be associated with moderate political views and more critical attitudes towards authority: "questioning authority is a natural extension of an open individual's curiosity" (McCrae & Costa, 1997, p. 837). However, Stone and Smith (1993, p. 154) argue that political psychologists tend to "base their case on intuitive evidence . . . concerning apparent similarities between regimes of the far left and far right, rather than on a system review of the empirical data on any personality and ideology."

There is also evidence for the negative relationship between Openness and prejudice, including racial discrimination. Thus, having an open mind would predispose people to be more tolerant towards other groups and perceive them as equal. Such

findings are interesting because racial attitudes and prejudice have always been explained in terms of general social processes, such as in-group versus out-group membership. However, strong individual difference factors seem to operate.

3.4 PERSONALITY AND ROMANTIC RELATIONSHIPS

Although the study of personality and romantic relationships represents a relatively small area within individual differences, it is growing steadily and in the past ten years an increasing number of studies have provided evidence for the idea that personality traits have longstanding effects on our love life, affecting choice, compatibility, congeniality, and level of romantic attachment. Reviewers have recently noted that "attraction of a suitable partner, propensity to establish a relationship intended to be permanent, and maintenance of that relationship may have related aetiologies and that these aetiologies may have their roots in personality" (Johnson, McGue, Krueger, & Bouchard, 2004, p. 285). On the other hand, it has been argued that "satisfying close relationships constitute the very best thing in life" (Berscheid, 1999, p. 260) and have implications for both mental and physical health (Gottman, 1998). Hence the importance of examining whether personality variables improve or impair romantic relationships, which ones are involved, and to what extent.

The best evidence for the effects of personality traits on romantic relationships derives from longitudinal studies. For example, Newman, Caspi, Moffitt, and Silva (1997) found that temperament measures at the age of 3 predict relationship quality at the age of 21. Likewise, Robins, Caspi, and Moffitt (2002) showed that positive emotionality measured at age 18 predicted quality of relationship at age 26. Despite these impressive findings, the literature is small and few longitudinal designs examined the role of all Big Five personality dimensions, with most studies comparing between positive and negative emotionality (see section 9.6).

One important aspect of interpersonal relationships is marriage. Although the connotation of marriage differs widely across eras, religions, and cultures, its positive implications seem to be ubiquitous. Married individuals tend to live safer (Bachman, Wadsworth, O'Malley, Johnson, & Schulenberg, 1997), healthier (Horwitz, White, & Howell-White, 1996), wealthier (Gray, 1997), and longer (Hu & Goldman, 1990) lives. As with many other correlates of personality traits (see chapter 7), these aspects of interpersonal relationships seem to have a large genetic component. For instance, McGue and Lykken (1992) found that divorce rates tend to be similar across generations and can therefore be explained in terms of inherited differences.

At the same time, developmental studies highlight the importance of upbringing, in particular implicit observation and imitation of parental relationships (Amato & Booth, 2001), as a constituent of romantic relationships. Along these lines, Conger, Cui, Bryant, and Elder (2000) reported that supportive upbringing during childhood predicted less hostile relationships in adulthood. In fact, a recent study (Donnellan, Larsen-Rife, & Conger, 2005) has shown that parenting styles can predict romantic relationships even when the personality (of the child) is taken into

account. But which personality traits predict marital satisfaction and stability?

The most consistent predictor of romantic relationships is undoubtedly Neuroticism, which is negatively correlated with marital satisfaction and a number of similar indicators. Whereas this correlation has often been interpreted as a mere artifact of neurotics' negative self-bias (neurotics are more pessimistic and thus generally more likely to report negative ratings of anything), there is wide consensus on the fact that Neuroticism is actually detrimental for relationships (Bouchard, Lussier, & Sabourin, 1999). Furthermore, a recent study defined competence in romantic relationships as "the set of behaviors that enable an individual to form an enduring romantic union that is mutually satisfying to both partners" (Donnellan et al., 2005, p. 563) and considered Neuroticism the most important threat to these behaviors. The authors concluded that neurotics' predisposition to easily experience anger, distress, and anxiety is "relatively destructive for relationships" (p. 572). Evidence for the role of other personality variables is lacking.

Studies have also examined whether being together in a marital relationship increases similarity between partners' personalities, that is, whether couples tend to become more similar as they spend more time together. Interestingly, and consistent with theories of personality traits and behavior-genetic evidence, the data show little longitudinal variability in partners' personalities, suggesting that couples tend to maintain the same degree of similarity across time (Caspi & Herbener, 1992; Tambs & Moum, 1992).

3.5 PERSONALITY AND PERFORMANCE

Performance correlates of personality have long been hypothesized across a variety of settings. In fact, human performance constitutes a major domain of research within experimental psychology (Matthews, Davies, Westerman, & Stammers, 2000). In one of the first attempts to conceptualize the relationship between personality and broad performance, Eysenck hypothesized that individual differences in cerebral arousability may explain both personality traits and performance. The basic three

assumptions were that (1) extravert and introvert, and neurotic and stable, individuals differ in their levels of arousal; (2) performance is best at an intermediate level of arousal; and (3) individuals are motivated to seek an intermediate level of arousal (see chapter 9). Studies have generally supported all three assumptions. Introverts and neurotics tend to be more aroused than extraverted and stable individuals, people perform best when they are moderately aroused, and there is a general tendency to revert to these levels of moderate arousal when higher or lower levels are reached. However, the prediction of specific performance outcomes requires a much more refined account of the processes and variables involved. Two aspects of performance that received salient attention in the context of individual differences and personality traits are educational and occupational attainment.

3.5.1 Personality and educational performance

Personality traits have been increasingly explored in relation to educational performance. Typically, studies of this sort have examined correlations between personality inventories and measures of school or university achievement, such as final exam or continuous assessment (e.g., essays, participation in class, attendance) grades (see Figure 3.6).

As early as 1915, Webb conceptualized *persistence of motives* as an important personality trait for the prediction of academic outcomes, and a similar concept was later put forward by Alexander (1935) under the label *factor X*. However, the emergence of ability and IQ tests (see chapter 5) meant differential psychologists were largely focused on cognitive performance factors when it came to predicting individual differences in learning and educational attainment. Whereas IQ tests are still the best and most widely used individual difference predictor of academic performance (Deary, Whiteman, Starr, Whalley, & Fox, 2004; Gottfredson, 2002), the idea that "the energy output of the individual student varies independently of ability" (Stanger, 1933, p. 648) has been backed up systematically since the consolidation of the Big Five as the major personality dimensions, no doubt because of the improved reliability of such measures.
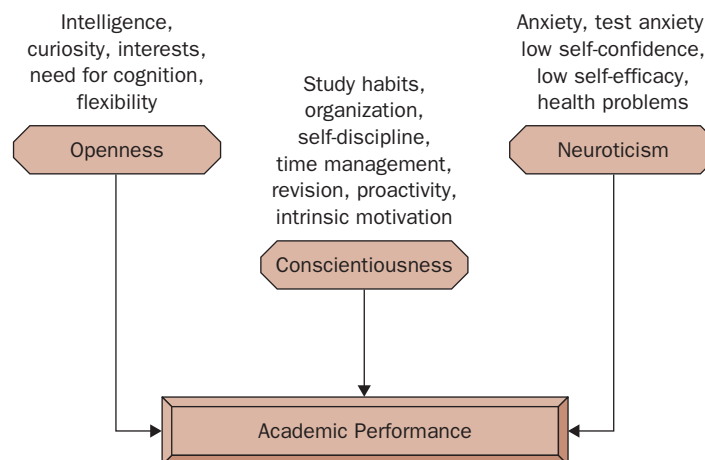

Figure 3.6   Personality and academic performance.

The most consistent personality correlate of exam and continuous assessment performance is Conscientiousness. This is not surprising as conscientious individuals are more organized, motivated, responsible, and proactive than their less conscientious counterparts. Thus several behaviors that may lead to improved academic performance, such as attending class, doing homework, and revising for exams, may be a natural consequence of higher Conscientiousness. Likewise, less conscientious individuals may be more likely to miss or be late for class, forget to complete assignments, and be more careless about revision and preparation for exams (Chamorro-Premuzic & Furnham, 2003a, b, 2005).

There is also evidence for the idea that Neuroticism is detrimental for academic performance, particularly when assessed via exams. It is likely that the relationship between Neuroticism and exam performance is mediated by state anxiety (Spielberger, 1972a), such that higher Neuroticism (trait anxiety) increases the chances of experiencing stress and anxiety under test conditions (see also Zeidner, 1998). The tendency to worry is an inherent characteristic of high Neuroticism and interacts with external stressors (e.g., exams, deadlines, presentations) to enhance the subjective component of stress, affecting the individual's perception of the stressor and his/her ability to copy with it (Lazarus & Folkman, 1984; Matthews et al., 2000). Accordingly, Neuroticism may tap into individual differences in **self-efficacy** or the extent to which an individual believes he/she can successfully master goals. For example, neurotic students will be more likely to have fears of failing an exam, which may in turn increase their experience of stress, which in turn would lead to poor exam performance (Halamandaris & Power, 1999). It is also quite common for neurotic students to divert their attention from the actual test, which may lead to difficulties in understanding test instructions.

> **self-efficacy** individuals' belief about the extent to which they can successfully carry out the appropriate behaviors to control and influence important life events

A third factor that has been identified as relevant with regard to educational outcomes is Openness to Experience. It seems that Openness would enable individuals to have a wider use of strategies and learning techniques, e.g., critical evaluation, in-depth analysis, flexibility, and so on. In addition, meta-analytic studies (notably Ackerman & Heggestad, 1997) revealed that Openness to Experience is moderately correlated with *crystallized intelligence* (see chapter 5), which is a well-known correlate of academic performance. However, several studies have failed to find significant associations between Openness and exam grades (for a review see Chamorro-Premuzic & Furnham, 2005), and even more failed to control for cognitive ability, so that it is not clear whether Openness may explain unique variance in academic performance (beyond cognitive ability).

There is also some evidence for the link between academic performance and Extraversion, although findings have been variable. It has been suggested (Furnham & Chamorro-Premuzic, 2005) that the relationship between Extraversion and academic performance may be moderated by type of assessment. For example, tasks that highlight social interaction, such as oral or viva voce exams, as well as participation in class, may be easier for extraverts. On the other hand, tasks requiring long-term intellectual investment, i.e., revising for long hours, may be advantageous to introverts. Other moderating variables in the relationship between Extraversion and academic performance may include age and level of education. Thus extraverts may have an advantage over introverts in primary school and the early years of secondary school, but introverts may outperform extraverts thereafter (Entwistle & Entwistle, 1970; Eysenck & Cookson, 1969; Sanchez-Marin, Rejano-Infante, & Rodriguez-Troyano, 2001). The link between age and Extraversion is intriguing, and there have been suggestions that academically more able students tend to become more introverted over time, whereas their counterparts become more extraverted (preferring social activities to studying or reading).

3.5.2 Personality and job performance

The validity of personality traits as predictors of job performance has been increasingly explored in the past twenty years, since an early meta-analysis by Schmitt et al. (1984) reported correlations between personality traits and job performance in the region of $r = .20$.

Consensus on the Five Factor personality traits has enabled researchers to explore the avenues between personality and job performance in a more organized and systematic fashion. Thus six meta-analyses in just over a decade (Barrick & Mount, 1991; Judge, Heller, & Mount, 2002; Judge & Illies, 2002; Salgado, 1997; Schmidt & Hunter, 1998; Tett, Jackson, Rothstein, & Reddon, 1999) provided robust data to assess the importance of personality traits in the workplace. These studies indicate that Conscientiousness is the strongest and most consistent personality correlate of job performance, whereas the relationship of other traits with job performance seems weaker and moderated by various factors, in particular characteristics of the job.

Schmidt and Hunter (1998) reported job performance to be correlated with Conscientiousness in the vicinity of $r = .31$ (see Table 3.1), which suggests that personality inventories are not as useful at predicting job performance as are work samples, IQ tests, or structured interviews but better than references (letters of recommendation) and a wide range of other factors (e.g., age, graphology, interests, years of education, and job experience) often used as predictors. It is unsurprising to find Conscientiousness to be significantly associated with job performance, as conscientious

Table 3.1   The prediction of job performance (JP)

Predictor	Correlation with JP
Work sample test	$r = .54$
Intelligence tests	$r = .51$
Interview (structured)	$r = .51$
Integrity tests	$r = .41$
Interview (unstructured)	$r = .38$
Conscientiousness	**$r = .31$**
References	$r = .26$

Source: Adapted from Schmidt & Hunter (1998); bold added.

Table 3.2   Personality and job performance

Personality trait	Number of studies	Sample size	True validity
Neuroticism	37	5,671	−.13
Extraversion	39	6,453	.10
Openness	35	5,525	.08
Agreeableness	40	6,447	.11
Conscientiousness	45	8,083	.20

Source: Adapted from Hurtz & Donovan (2000).

individuals are described as being competent, organized, dutiful, achievement-striving, and self-disciplined (Costa & McCrae, 1992). Judge, Higgins, Thoresen, and Barrick (1999) found that Conscientiousness is also significantly correlated with job satisfaction, which emphasizes the important motivational aspects of this trait: people who are more satisfied with their jobs can be expected to perform better, which would in turn increase their satisfaction with the job.

Another personality trait that has been quite consistently, albeit not as strongly, correlated with job performance is Neuroticism. In general, studies have found that Emotional Stability (low Neuroticism) is beneficial for performance in most job settings, a finding that has been attributed to the self-confidence, resilience, and calmness of emotionally stable individuals as well as the higher anxiety, angry hostility, and vulnerability of neurotic individuals (Costa & McCrae, 1992). Indeed, some studies suggested that the effects of Emotional Stability on job performance may be as general as those of Conscientiousness (Hough, Eaton, Dunnette, Kamp, & McCloy, 1990; Salgado, 1997).

However, other studies reported lower correlations between Neuroticism and job performance and suggest that, when one looks at the wider picture, the Big Five seem to have modest predictive validity in the workplace (Hurtz & Donovan, 2000). The question remains as to whether these correlations (see Table 3.2) are indicative of the true importance of personality traits in the workplace or whether the reliability of both personality and job performance measures is insufficient to reflect their importance at work.

3.6 PERSONALITY AND HEALTH

Differential psychology has also examined the validity of personality traits as predictors of different indicators of psychological and physical health (see also chapter 4).

An interesting historical connection is that between personality and blood pressure. As seen in section 2.4, the notion of temperament has been associated with individual differences in physiological factors since the time of Hippocrates and is represented by **somatogenic** approaches, which regard physical factors as the cause of psychological differences

> **somatogenic** describes an approach that views physical factors as the cause of psychological differences in personality

in personality (Shontz, 1975). Along these lines, studies have found that injuries that lead to cerebral vascular changes can directly cause behavioral changes (Elias & Elias, 1993). On the other hand, **psychogenic** or psychosomatic approaches view the association between personality and physical factors as indicative of the influence of the former on the latter (Alexander, 1939). For in-

> **psychogenic** of psychological (rather than physiological) origin

stance, hypertension, which is the diagnostic label for elevated blood pressure of unknown origins, can be understood as a direct cause of individual differences, such as particular reactions to conflicts, frustration, and repression (Shontz, 1975). Thus, Jorgensen, Blair, Kolodziej, and Schreer (1996) note that "persons with [hypertension] have been described as passive, unassertive, submissive, and prone to suppress anger and hostility" (p. 294) (see also Johnson & Spielberger, 1992). Studies on subjective evaluations also suggest that low self-efficacy can induce physiologic activation and psychological distress (Bandura, 1986). However, the relationship between personality and blood pressure is likely to represent a reciprocal causality between psychological and physiological factors and to confound a variety of moderating variables such as age, gender, and socioeconomic status (Jorgensen, Blair, Kolodziej, & Schreer, 1996).

Personality traits have also been reported to predict broad indicators of physical health, such as absence of illness and longevity (Caspi et al., 2005). Contrada, Cather, and O'Leary (1999) (see Figure 3.7) conceptualized three ways by which personality may influence health outcomes:

1. *Intrinsic characteristics* of personality traits may be associated with psychological processes that have negative physical outcomes. For example, low Agreeableness, in particular its minor dimensions of anger and mistrust, may lead to higher activation of the sympathetic nervous system and in turn enhance the chances of coronary artery disease (Smith & Spiro, 2002).
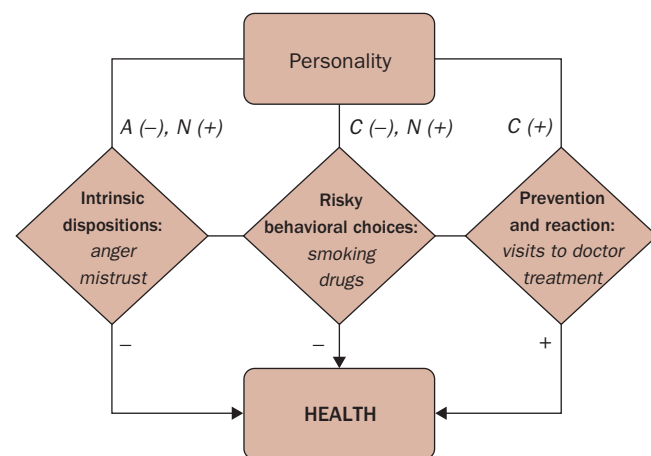

Figure 3.7   Personality and health: three types of influence.
A = Agreeableness, N = Neuroticism, C = Conscientiousness,
+ = positive influence, − = negative influence.

Table 3.3   Big Five correlates of MMPI-2 scales[a]

Indicators of psychopathology	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness
Depression	.64	−.57	−.23	−.18	−.51
Paranoia	.38	−.32	−.02	−.29	−.39
Schizophrenia	.70	−.44	−.11	−.39	−.51
Obsessiveness	.68	−.35	−.12	−.29	−.48
Antisocial	.41	−.15	−.08	−.48	−.34
Addiction	.42	−.16	−.02	−.30	−.33
Negative treatment	.67	−.54	−.27	−.38	−.56
Family problems	.61	−.30	−.06	−.43	−.41

[a] N = 1,342. MMPI-2 = Minnesota Multiphasic Personality Inventory.
Source: Adapted from Quirk et al. (2003).

2. *Risky behavioral choices*, such as smoking, unhealthy diet, and substance abuse, which may threaten individuals' health. Unhealthy behaviors are more typical in individuals with low Conscientiousness scores.

3. *Prevention of and reaction to* health problems. For example, conscientious individuals will be more likely to visit the doctor if they sense health problems and take a more proactive approach to treatment of illness (e.g., take all prescribed medication, adopt beneficial behaviors).

After "invading" the world of occupational and educational psychology, the Big Five personality traits seem to be increasingly explored in connection with clinical settings. The overarching question here is whether normal personality dimensions have predictive validity in regard to mental health problems. In contrast to psychiatric or psychopathological scales – which are designed specifically to predict mental illness – personality inventories such as the NEO-PI-R (Costa & McCrae, 1992) assess general individual differences. However, since most forms of mental disorders develop from healthy personalities, general trait models like the Five Factor framework may be important to anticipate psychopathological vulnerability or *diathesis*. For example, Meehl's (1962, 1989) diathesis-stress model (see chapter 4) of schizophrenia postulates that anxiousness, submissiveness, introversion, and eccentricity are pre-morbid personality factors. There is also support for the idea that high Neuroticism and low Extraversion combine in a variety of psychiatric populations (Zuckerman, 1999). Furthermore, traits may predict mental illness prognosis including individuals' responses to treatment (American Psychiatric Association, 1994; Quirk, Christiansen, Wagner, & McNulty, 2003). Thus psychological disorders may eclipse individual difference factors that, if considered, facilitate personalized interventions.

An interesting question is whether the relationship between normal personality traits and psychological disorders is indicative of common etiological factors. For instance, interaction between biological dispositions and environmental constraints may cause both introversion (social withdrawal) and clinical depression and could be manifested in terms of both depressive symptoms and "changes" in responses to general personality questionnaire items such as "I make friends easily" or "I enjoy being part of a crowd" (Schelde, 1998). This is also consistent with recent findings (e.g.,

Ruchkin, Koposov, Klinteberg, Oreland, & Grigorenko, 2005) of the common genetic basis (specifically, activity of the MAO enzyme on neurotransmitters) for novelty-seeking and externalizing psychopathology.

In a recent study, Quirk et al. (2003) reported high correlations between the Big Five personality traits and several indicators of psychopathology as measured by the Minnesota Personality Inventory (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). As shown in Table 3.3, Neuroticism was found to be a consistent predictor of psychopathological factors, whereas the other four main personality dimensions were negatively related to these scales. Indeed, the authors concluded that although the NEO-PI-R was not designed to explain mental illness (and does not include assessment of delusions or hallucinations), it "holds promise for providing information relevant to clinical concerns such as self-perception, interpersonal functioning, treatment response, and outcome prediction" (p. 323).

3.7 PERSONALITY AND HAPPINESS

The final section on personality correlates concerns what is arguably the most valuable outcome variable of all, namely, happiness. Although it seems unnecessary to explain the importance of happiness, it has been shown to have benefits for marital quality, income, productivity, sociability, and creativity, among other things (Lyubomirsky, Tucker, & Kasri, 2001). There is consistent evidence for the idea that Extraversion and Emotional Stability (low Neuroticism) predispose individuals towards happiness (Furnham & Cheng, 1997, 1999). Furthermore, happiness is generally associated with higher levels of self-esteem, which is also a function of high Extraversion and low Neuroticism. As one would expect, there are also strong cultural influences on happiness that moderate its relationship with personality traits (see Figure 3.8).

People will suffer many losses (e.g., death of relatives, friends, and partners) and experience a number of other adverse life events (e.g., unemployment, divorce, stress, health problems). At the same time, they will experience important positive events, such as graduation, engagement, marriage, promotion, and children. These events may represent objective causes of happiness or upset, yet, the subjective component of happiness is equally
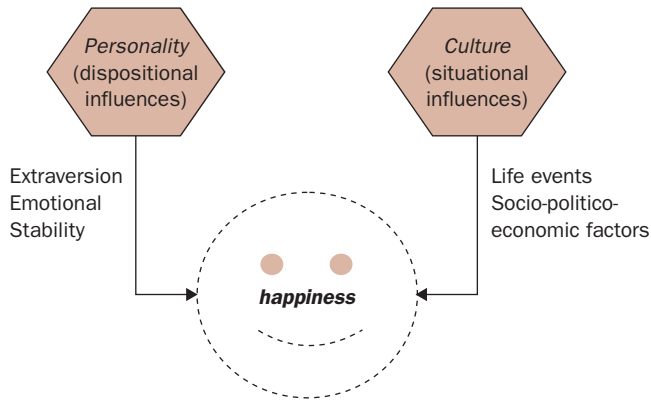
Figure 3.8   Personality, culture, and happiness.

important and, over longer periods of time, personality traits are pervasive indicators of happiness.

In recent years, there has been a renewed interest in the relationship between personality and *subjective well-being*, which refers not only to happiness but also to fulfillment and life satisfaction. This triad (group of three) represents the key aspect of intrapersonal or **positive psychology** and shows a significant overlap with internal dispositions such as high Extraversion and low Neuroticism. On the other hand, the "wider picture" is completed by economic and social well-being, which, together with subjective well-being, are indicative of quality of life (see Figure 3.9).

> **positive psychology** studies constructs such as happiness, fulfillment, and life satisfaction in contrast to "negative" emotions such as fear, anger, or sadness

The stability of subjective well-being over time is testimony to its dependence on dispositional or trait variables. Thus Diener, Oishi, and Lucas (2003) argued that health, income, educational background, and marital status account for only a small amount
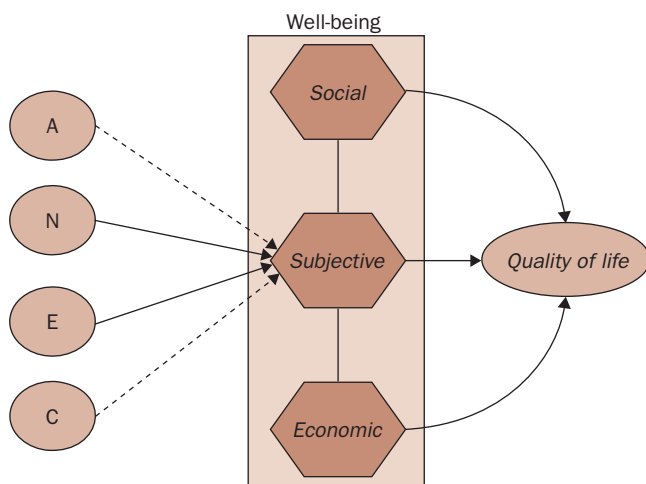

Figure 3.9   Personality and subjective well-being: the "bigger picture." A = Agreeableness, N = Neuroticism, E = Extraversion, C = Conscientiousness.

of the variance in well-being measures. They claim that research instead shows that subjective well-being "is fairly stable over time, that it rebounds after major life events, and that it is often strongly correlated with stable personality traits" (p. 406). Three different avenues by which dispositions influence happiness are:

1. *Baseline affect*: levels of positive affect are generally higher in extraverted than introverted, and stable than neurotic, individuals (see also chapter 9 on mood).
2. *Emotional reactivity*: individual differences affect the degree to which people react to specific life events, that is, whether and to what extent they are emotionally affected by positive and negative life episodes.
3. *Information-processing*: individual difference factors predict people's interpretation of events, in particular whether they regard events as negative or positive. Thus there are positive or negative *biases* (the former are self-serving, whereas the latter are self-handicapping).

3.8 CURRENT DEVELOPMENTS OUTSIDE THE DISPOSITIONAL PARADIGM

Most of this book is concerned with the dispositional or trait approach to personality. Although traits are no doubt the "global currency" in personality research, other approaches exist and should not be neglected. Thus the forthcoming sections will examine the current status of non-dispositional approaches, including some of the "grand theories" of personality that have dominated the field in the past.

3.8.1 Psychoanalysis and personality theory

Despite drifting away from the scientific approach to personality more than 50 years ago, **psychoanalysis** is still one of the most popular and arguably *the* most famous personality theory, no doubt thanks to the fame of its inventor, Sigmund Freud (1856–1939). Psychoanalytic theories are often called **psychodynamic** because they conceptualize personality as the result of a dynamic conflict between unconscious and conscious psychological forces (dynamic because they are in permanent struggle). This conflict gives rise to a variety of behavioral and psychological outcomes, such as symptoms, dreams, and fantasies.

> **psychoanalysis** a therapeutic method and theory, developed by Freud, based on the idea that unconscious motivations and needs influence behavior

> **psychodynamic theories** deal with the processes underlying dynamic conflicts between unconscious and conscious psychological forces

Although psychoanalysis had a substantial influence on social and human sciences during the twentieth century, its impact on

modern personality psychology has been marginal, particularly outside psychopathology. Today, most personality researchers regard psychoanalysis as an obscure, outdated, and pseudo-scientific branch of psychology, preferring to exclude it from the individual difference curricula. But what are the fundamental claims of psychoanalytic theory?

Psychoanalysis is both a *theory* and therapeutic *method* (some information on the clinical applications of psychoanalysis can be found in section 4.4.1). In fact, rather than a single theory, psychoanalysis is represented by a group of related theories that are sometimes incompatible, though they more or less adhere to the same core principles. Thus, regardless of the specific psychoanalytic "school" (e.g., Freudian, Lacanian, Jungian), psychoanalysts tend to accept the following propositions:

1. Most of the thoughts, feelings, and motives underlying behavior are *unconscious* or unknown to the individual. This means people are rarely aware of the true reasons they choose to behave as they do, and that there is often no choice at all. Instead, people are "fooled" by apparent motives.
2. Unconscious and conscious motives operate *in parallel*, so that, in the same situation, an individual can be consciously motivated to do *x* (e.g., hate, hit, remember) but unconsciously motivated to do *y* (e.g., love, kiss, forget).
3. *Nurture*, in particular the child's experience with his/her parents, has a fundamental and long-lasting impact on the development of his/her personality. Thus personality is largely acquired: "The child is father to the man."
4. An individual's *representations* of others, i.e., how friends, family members, and colleagues are regarded, affects that person's relations with them as well as psychopathological reactions (e.g., symptom formation). Thus psychoanalysis seeks to show how unconscious factors determine interpersonal relations, which in turn determine mental health.
5. The normative *development* of personality requires the progressive transition from instinctual (i.e., aggressive and sexual) to social behavioral motives. Thus psychological disorders are indicative of maturational deficits or a "regression" to infantile sexuality.

The major problem with the above propositions is that they cannot easily be tested, at least not by the empirical methods that have constituted the mainstream approach in scientific psychology since the 1930s, particularly after the rise of the behaviorist paradigm in the United States (see section 3.8.2). On the other hand, the validity of psychometric self-reports quickly undermined the importance of core psychoanalytic notions such as the unconscious. If people's self-descriptions can accurately reflect individual differences in actual behavior (which is what this chapter has shown), the idea that these differences have unconscious motives seems of little importance. Thus scientific and psychoanalytic approaches to personality were quickly regarded as antonymous.

Whereas few personality researchers today explain individual differences in terms of psychoanalytic principles, these are often compatible with empirical findings. For example, the idea that consciousness and behavior are the result of a constant trade-off between different autonomous subsystems of the mind is widely accepted and explains how individuals may learn implicitly or without awareness of the underpinning cognitive and affective psychological processes.

Like psychoanalysis, dispositional approaches posit that personality is largely developed during childhood and that traits remain relatively unchanged after adolescence or early adulthood. Thus, in a recent mainstream personality review, Triandis and Suh (2002) argue that "when parents accept their children (there is much hugging, comforting), the children become sociable, emotionally stable, have high self-esteem, feel self-adequate, and have a positive world view. When parents are rejecting (hitting, using sarcastic language, humiliating, neglecting), their children become adults who are hostile, unresponsive, unstable, immaturely dependent, and have impaired self-esteem and a negative world view" (p. 135) (see also Rohner, 1999). There has been a recent increase in psychoanalytic articles submitted to leading empirical journals, such as the *Journal of Personality* (e.g., Cramer & Davidson, 1998; Norem, 1998) and *Psychological Bulletin* (Westen, 1998).

3.8.2 Behaviorism and personality theory

The **behaviorist** approach to personality has a longstanding history and, like psychoanalysis, applies to a variety of areas beyond personality theory. In fact, when the behaviorist approach was founded in the United States by John Watson (1878–1958), the aim was not the development of a theoretical framework that would account for individual differences in personality but the creation of an entirely novel form of psychology, one that could distance itself from speculation and concerns about unobservable "mental processes" and replace subjective evaluation with objective experimentalism. In the words of Watson (1913):

> **behaviorism** the study of observable behavior that explains human behavior not in terms of internal psychological processes but as a result of conditioning, or learning how to respond in specific ways to appropriate stimuli

> Psychology as the behaviorist views it is a purely objective experimental branch of natural science. Its theoretical goal is the prediction and control of behavior. Introspection forms no essential part of its methods, nor is the scientific value of its data dependent upon the readiness with which they lend themselves to interpretation in terms of consciousness. The behaviorist, in his efforts to get a unitary scheme of animal response, recognizes no dividing line between man and brute. The behavior of man, with all of its refinement and complexity, forms only a part of the behaviorist's total scheme of investigation. (p. 158)

Thus behaviorism attempted to replace the construct of mind with observable variables such as behavior, and assumed that behavior was entirely caused by external stimuli rather than internal psychological processes. Behaviorists were also more concerned with producing behavioral *change* than with

understanding behavior per se. In doing so, they focused on the role of learned associations as determinants of behavioral outcomes and attempted to both identify existing associations and create novel ones. Hence the label "learning theories" is often applied to behaviorist approaches.

According to behavioral theories, personality could be explained simply as the sum of all learned associations, though strictly speaking a behaviorist would never employ the term "personality" as it is a latent and theoretical abstraction.

The evolution of behaviorism followed different paths. On one hand, B. F. Skinner (1904–90) developed *radical behaviorism*, expanding the theory into a philosophical and political system. This line of behaviorism proposed that "everything important in psychology . . . can be investigated in essence through the continued experimental and theoretical analysis of the determiners of rat behavior at a choice point in a maze" (Tolman, 1939, p. 34), and that "the variables of which human behavior is a function lie in the environment" (Skinner, 1977, p. 1). On the other hand, less radical versions of behaviorism proposed that "in order to characterize behavioral patterns, propensities, or capacities, we need not only a suitable behavioristic vocabulary, but psychological terms as well" (Hempel, 1966, p. 110). Thus moderate behaviorist approaches aimed at resurrecting unobservable variables such as memories, emotions, and perceptions to expand the theoretical and explanatory scope of behaviorism.

Ironically, a large part of the behaviorist movement evolved into the paradigm of **cognitive psychology**, which focused on the study of unobservable, internal, mental constructs. Furthermore, cognitive psychologists would revindicate subjectivity to emphasize the importance of beliefs and establish a clear-cut differentiation between human and non-human learning. Although associations between environmental stimuli and behavioral responses may provide a basic explanation of how organisms learn, human learning is much more dependent on individuals' beliefs about behavioral reinforcements than on the reinforcements themselves. This idea was emphatically conceptualized in Bandura's (1986) theory of *self-efficacy*, which refers to an individual's beliefs about his/her capacities to influence specific outcomes, and about the self-fulfilling prophecies of such beliefs.

> **cognitive psychology** the study of unobservable mental constructs such as perception, thinking, memory, and language

Even from a strict behaviorist perspective, there are valid epistemological arguments that apply to our understanding of personality traits. For example, the idea that mental states are empirically validated only insofar as they relate to observable behavioral outcomes is very much applicable to the psychometric assessment of personality. Thus the psychometric method of *inferring* individual differences in thought and emotionality from observable behavior may be considered a reminiscence of the behaviorist paradigm. In fact, psychometric approaches to personality are much closer to behaviorist than psychoanalytic theories, though early trait taxonomies have also been influenced by clinical observations.

3.8.3 Phenomenological personality theories

Phenomenological approaches to personality, also known as *humanistic* or *existential*, are a theoretical hybrid between psychology and philosophy. Indeed, the term **phenomenology** refers to a philosophical paradigm, which explains why phenomenological approaches to personality have been more influenced by philosophical than psychological theories.

> **phenomenology** the study of things (phenomena) as they are perceived or represented

Phenomenology is not only a rich and comprehensive theoretical framework but also a type of epistemology (philosophy of science), in that it defines and conceptualizes the relationship between subject and object of knowledge, that is, how the world is perceived or represented. To the extent that life is experienced and interpreted in a unique and subjective manner, it argues, emphasis should be placed on *individuality*, and no two individuals have the same perception of the world. Thus Kohler (1947, p. 3) argued: "There seems to be a single starting point for psychology, exactly as for all the other sciences: The world as we find it, naively and uncritically." In fact – and you may have realized this even before studying phenomenology – two different people will experience the same event in different ways. Philosophically, this leads to the position of *subjectivity*. Psychologically, it is the maximal expression of individual differences, which is arguably why phenomenology deserves to be seriously considered in any book on the subject. Indeed, phenomenology takes the concept of personality to a different level because it equates personality with individuality.

Two other concepts that constitute the theoretical skeleton of phenomenological approaches to personality are *freedom* and *self-determination*. Thus phenomenology posits that all human beings are free to choose and create their lives, making life a self-determined enterprise. This idea was highly influential in determining the theoretical layout of personality approaches in the 1960s and 1970s, and represented the central message of humanistic psychology largely associated with Carl Rogers (1902–87), Abraham Maslow (1908–70), and George Kelly (1905–66). In brief, humanistic personality theories argued that:

● Individuals, just like an opening flower, have a natural tendency towards personal improvement and self-perfection. Thus every person has the potential for *self-actualization* or self-realization.
● *Actualization* is the capacity to enhance the organism, gain autonomy and be self-sufficient (Rogers, 1959). In simple terms, to actualize oneself means to *grow*.
● If individuals are unaware of their potential for self-actualization or find obstacles that stop them from unleashing this potential, (humanistic) psychologists can guide them and help them overcome obstacles.
● Self-actualized people tend to enjoy life and be happy, whereas failure to unleash one's potential for growth can lead to mental health problems (Kasser & Ryan, 1993; Ryan, Rigby, & King, 1993).

- Failure to self-actualize may also lead to a state of *reactance* (Brehm & Brehm, 1981), which is the feeling that our freedom of choice has been taken away.
- Self-actualization leads to congruence between one's *ideal* and *actual* self (Rogers, 1961). Conversely, incongruity between one's aspirations and reality causes anxiety.

Perhaps the most significant contribution of the humanistic paradigm has been the application of phenomenological/constructivist principles to the study of *cross-cultural* issues. Accordingly, reality is subjectively constructed within the range of social meanings available in each culture. This theoretical position emphasizes and praises individuality, positing that individuals can only be understood in terms of their own personal experiences (rather than by imposing a "universal" system of meaning) (see Rogers, 1951; Kelly, 1955).

3.8.4 Social-cognitive theories of personality

The *social-cognitive* paradigm (for a review of the literature see Cervone & Shoda, 1999) is itself a ramification of late behaviorist theories, though its emphasis is largely on subjective processes. For example, Higgins's (1999) research is concerned with *self-comparative* processes by which individuals contrast their aspirations (what or who they would like to become) with their self-views (who they think they are). The bigger the difference or contrast between individuals' self-views and aspirations, the higher the likelihood of experiencing anxiety and even depression.

In a similar vein, Baldwin (1999) referred to *relational* **schemas** as a representational form of self-image that arises from social interaction. Interestingly, these schemas are not only self-fulfilling (in that they may affect information-processing and behavior), but may also fluctuate according to the situation, notably depending on the representation of other individuals.

schema knowledge structure that guides individual expectations and beliefs, helps make sense of familiar situations, and provides a framework for processing and organizing new information

Thus you may behave like a "daughter" at home and in the company of your parents, but act like a "girlfriend" in the company of your boyfriend. The implications of this argument are that individuals may have several, and often plenty of, relational schemas, an idea that is in direct conflict with trait theories of personality (as representational schemas lead to inconsistencies not only in behavior but also in self-perception). However, some social-cognitive theorists have raised concerns and formulated direct criticisms of such fragmented notions of the self, positing that "there is only one self that can visualize different futures and select courses of action" (Bandura, 1999, p. 194).

Recent social-cognitive theories have also focused on self-perceptions with regard to intellectual competence, in particular whether individuals believe intelligence to be a fixed *entity* (innate, and thus unaffected by efforts and hard work) or *incremental* in nature (and thus dependent on one's level of intellectual investment and effort to succeed) (see Dweck, 1997; Grant &

Dweck, 1999). Individuals who hold incremental beliefs about intelligence tend to set higher goals and work much harder to accomplish them, regardless of their actual level of intelligence. Conversely, people who think intelligence is a fixed entity tend to have self-defeating cognitions and strive less for success. Furthermore, whilst entity beliefs are usually associated with performance goals, incremental beliefs tend to emphasize learning goals, hence they are of an intrinsic rather than extrinsic nature (see also chapter 9).

Although research has only recently begun to examine the relationship between entity/incremental beliefs and well-established personality traits (Furnham, Chamorro-Premuzic, & McDougall, 2003), Dweck's theory represents a promising prospect for unifying trait and social-cognitive theories as well as shedding light on the developmental effects of personality on intellectual competence (Chamorro-Premuzic & Furnham, 2006). Although some social-cognitive psychologists have explicitly rejected the prospect of integrating their theories with trait approaches, believing both paradigms to be not only incompatible but also in direct theoretical opposition (Cervone, 1999; Cervone & Shoda, 1999), others have emphasized the complementary potential of these two paradigms. Thus Mischel (1999) notes that:

> Personality psychology has been committed since its beginnings to characterizing individuals in terms of their stable and distinctive qualities. Other personality theorists and researchers have focused instead on the processes that underlie these coherences and that influence how people function. These two goals . . . have been pursued in two increasingly separated (and warring) sub-disciplines with different agendas that seem to be in conflict with each other . . . [but] both goals may be pursued in concert with no necessary conflict or incompatibility because . . . dispositions and processing dynamics are two complementary facets of the same phenomena and the same unitary personality system. (pp. 55–6)

3.8.5 Biological approaches to personality theory

Biological approaches aim to identify observable links between physical (anatomical and physiological) and psychological variables. Thus biological theories of personality are concerned with the relationship between psychometrically assessed personality traits and the nervous system. This means that trait and biological approaches are not mutually exclusive but complementary. Insofar as psychometrically obtained scores (e.g., on Neuroticism or Extraversion) correlate with measures of anatomical or physiological variables, one may assume that personality traits are simultaneously expressed in physical and psychological ways.

In recent years, there has been much progress in identifying biological correlates of personality traits. For instance, anatomical studies have shown that general areas in the brain such as the *frontal lobes* are associated with the execution of planning and behavioral guidance (Damasio, 1994), whilst the *amygdala* seems to play a role in determining levels of aggression and emotionality (Buck, 1999). On the other hand, physiological studies have

recently indicated that the hormone testosterone is relevant in regard to social interaction – for instance, determining whether someone will behave in an agreeable or aggressive manner – and sexual behavior (Dabbs, Alford, & Fielden, 1998; Dabbs, Strong, & Milun, 1997). Not only hormones but also neurotransmitters such as serotonin and dopamine seem to have solid links with emotion regulation and sociability (Zuckerman, 1999). This is consistent with the finding that recreational drugs, such as MDMA, tend to alter levels of serotonin and dopamine.

3.8.6　Behavioral genetics

Studies of heritability, limited parental influence, structural invariance across cultures and species, and temporal stability all point to the notion that personality traits are more expressions of human biology than products of life experience.
(McCrae, Costa, Ostendorf, Angleitner, Hrebickova, et al., 2000, p. 177)

Another approach to personality research and theory is represented by the so-called *behavior-genetic* movement (discussed extensively in chapter 7). This area of research assesses the impact of genetic (inherited) and non-genetic (environmental) factors, not only on personality traits but also on intellectual abilities. Here, I shall only summarize the implications of recent behavior-genetic findings on personality theory and research.

Behavior-genetic research has provided compelling evidence in support of the hypothesis that those general dispositions used to describe, classify, and compare individuals we refer to as personality traits are, to a great and observable extent, biologically transmitted and inherited (Plomin, Chipuer, & Loehlin, 1990). There are two important similarities between behavior-genetic and biological approaches discussed above. First, both attempt to explain psychological outcomes in terms of physical causes. Second, both rely on psychometrically assessed traits (therefore complementing the dispositional approach to personality). This emphasizes once again the importance of trait approaches to personality as a ubiquitous method and framework at the center of personality theory. Given that personality traits are latent constructs, we can only test hypotheses regarding the causes of personality traits in an indirect manner, that is, once we have inferred traits from psychometric sources. In fact, this has been often highlighted as a weakness of behavioral genetics, if only because the field would be more accurately labeled "trait genetics" (Funder, 2001).

As you will note from chapter 7, there is evidence for the heritability of both personality and intelligence. However, estimating the extent to which individual differences may be affected by genes is only a first step towards addressing psychologically more important questions. A fundamental question for psychologists and educators is what happens with the non-genetic or environmental causes of individual differences. For instance, studies suggest with quite remarkable consistency that even the *shared environment* (e.g., family, parenting, early experiences at home) has little impact on an individual's personality (Harris,

1995; Rowe, 1997; Scarr, 1992). However, critics have argued that specific behavioral outcomes are substantially more influenced than broad personality traits by shared environment (Turkheimer, 1998). In any case, the most fertile area of behavior-genetic research seems to involve the identification of interactive effects between environmental and genetic variables, notably the question of how personality-related choices that affect the environment may be genetically predetermined.

3.8.7　Evolutionary and cultural approaches to the study of personality

The *evolutionary* approach to the study of personality, also known as *sociobiology*, is based on the identification of the biological variables underlying personality and behavior and how these evolved from other species. As such, evolutionary approaches are more concerned with similarities than differences between individuals and should not, accordingly, be considered part of individual differences. It is clear, however, that identification of the most basic aspects underlying human behavior, thought, and emotionality will also provide information on individual differences. Evolutionary theories are therefore useful to mark the boundaries of individual differences and, more importantly, to scrutinize the biological roots of the major psychological aspects of human behavior.

In the same way evolutionary theory explains an animal's (human or non-human) attempt to defend its territory, protect its offspring, and compete against others for available resources, sociobiologists posit that a number of behaviors often regarded as cultural or social, such as women's tendency to prefer wealthy men, and men's tendency to prefer faithful women, are influenced by biological instincts rather than learned cultural norms (Buss, 1989). Furthermore, studies (e.g., Gosling & John, 1999) have shown that "human" personality dimensions such as Extraversion and the minor trait of dominance can be accurately used to describe and predict individual differences in animals too.

Evolutionary theories are also useful to explain findings derived from other types of designs, such as consequential or genetic studies. For instance, research into the personality correlates of interpersonal relationships and marital status suggests that there are mediating gender differences underlying the relationship between personality and propensity to marry. These differences can be interpreted in evolutionary or sociobiological terms, such that, for men, marriage desire would be an expression of dominance, whilst for women it would be an attempt to obtain affiliation and protection (Buss, 1987; Johnson et al., 2004).

It is important to bear in mind that, at the other end of the line from evolutionary studies, *cultural* approaches to personality traits argue quite emphatically for cross-cultural differences in personality. These differences would affect not only the distribution of scores at levels of each trait, but also the very validity of dispositional and situational frameworks. Thus, according to Triandis and Suh (2004, p. 137), "traits exist in all cultures, but account for behavior less in collectivist than in individualist cultures. Situational determinants of behavior are important universally, but more so in collectivist than in individualist cultures."

At the same time, cultures may prescribe and set the parameters in which personality may be expressed. Collectivistic cultures tend to be more *homogeneous*, which is itself in contradiction with the expression of individual differences. Conversely, individualistic cultures (as the name clearly suggests) praise individuality and are therefore more *heterogeneous*. These cross-cultural differences are even noticeable during the developmental stage of adolescence, which is commonly associated with rebellious attitudes and defiance of authority. In homogeneous countries such as Singapore, adolescents tend to conform to cultural norms, rejecting the use of alcohol, cigarettes, or drugs and maintaining a moral sexual practice (Ball & Moselle, 1995).

Evolutionary and cultural approaches are not always incompatible. Cultural effects can be understood as the result of evolutionary changes. For example, it is likely that homogeneous/collectivistic societies may have evolved from *farming* cultures, whilst heterogeneous/individualistic societies may have evolved from *hunting* cultures (Berry, 1976). Evolution may therefore play a key role in shaping socialization patterns, which in turn affect the expression of individual differences (Maccoby, 2000). However, the distinction between farmers and hunters is out of date, at least when it comes to characterizing today's modern world. Developed countries represent information rather than hunting or farming societies, and this implies a higher order of complexity in the expression of values, attitudes, and individual differences such as personality traits.

3.9 SUMMARY AND CONCLUSIONS

This chapter has covered three main topics, namely, methodological approaches to the study of personality, validation of personality traits as predictors of real-life outcomes, and alternative approaches to the psychometric/dispositional approach to personality (notably, grand theories of personality). As seen:

1. A great deal in the evolution of personality research has been achieved by the incorporation of correlational designs and similar statistical methods introduced by Pearson. Most dispositional studies are done on large datasets and use sophisticated procedures for data analyses, such as regressions, tests of mediation and moderation, and structural equation modeling (SEM), which enable researchers to test personality theories against a variety of real-life outcomes.
2. Personality traits, such as the Big Five, have been found to be valid predictors of academic and occupational performance, psychological and physical health, and even happiness. Each

of these outcomes has been the focus of different personality researchers and will probably one day represent an entire area of research. Recent reviews such as Ozer and Benet-Martinez (2006) illustrate the importance of personality across different settings, indicating that the Big Five have behavioral consequences in every aspect of our lives. In simple terms, personality matters.

3. Personality researchers have not been confined solely to the study of traits or validation of the Big Five. Indeed, it is only in the last two decades or so that dispositional approaches started to dominate the field of personality. Until then, personality was largely associated with "grand theories" of psychology, such as psychoanalytic, behaviorist, and evolutionary paradigms. Unlike trait approaches, grand theories tend to highlight similarities rather than differences between individuals and are concerned with universal aspects of human behavior.

The theories of personality covered in chapters 1 and 2 have focused on normal behaviors, or what may be considered general aspects of individual differences. However, individuals also differ in regard to psychological health. The causes and consequences of such differences will be examined in chapter 4.

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