FUNDAMENTALS OF Psychology

Michael W. Eysenck

FUNDAMENTALS OF Psychology

Michael W. Eysenck

Psychology Press
Taylor & Francis Group
an informa business

First published 2009 by Psychology Press,
an imprint of Taylor & Francis
27 Church Road, Hove, East Sussex, BN3 2FA

Simultaneously published in the USA and Canada
by Psychology Press
270 Madison Ave, New York, NY 10016

Psychology Press is an imprint of the Taylor & Francis Group,
an informa business

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data
Eysenck, Michael W.
Fundamentals of psychology / Michael W. Eysenck.
p. cm.
Includes bibliographical references and index.
ISBN 978–1–84169–371–2 (hbk)—ISBN 978–1–84169–372–9 (pbk.)
1. Psychology. I. Title.

BF121.E945 2009
150—dc22 2008000676

ISBN: 978–1–84169–371–2 (hbk)
ISBN: 978–1–84169–372–9 (pbk)

Cartoons by Sean Longcroft
Consultant for case studies and boxes: Evie Bentley

Cover design by Sandra Heath
Typeset in Sabon by Newgen Imaging Systems (P) Ltd
Printed and bound in Slovenia

Contents

About the author

Michael W. Eysenck is one of the best-known psychologists in Europe. He is Professor of Psychology in the psychology department at Royal Holloway University of London, where he was Head of Department between 1987 and 2005. He is especially interested in cognitive psychology (about which he has written several books) and most of his research focuses on the role of cognitive factors in anxiety within normal and clinical populations. He has published 36 books. His previous textbooks published by Psychology Press include *Psychology for AS Level (4th ed.)* (2008), *Psychology for A2 Level* (2001), *A2 Psychology: Key Topics (2nd ed.)* (2006), *Psychology: An International Perspective* (2004), *Psychology: A Student's Handbook (5th ed.)* (with Mark Keane) (2005), *Simply Psychology (3rd ed.)* (2007), *Fundamentals of Cognition* (2006), *Psychology: A Student's Handbook* (2000), *Perspectives on Psychology* (1994), and *Individual Differences: Normal and Abnormal* (1994). He has also written two research books for Psychology Press based on his research on anxiety: *Anxiety: The Cognitive Perspective* (1992) and *Anxiety and Cognition: A Unified Theory* (1997), as well as the popular title *Happiness: Facts and Myths* (1990). He is also a keen supporter of Crystal Palace football club and lives in hope that one day they will return to the Premiership.

Chapter 2

Contents

2 Historical and conceptual issues

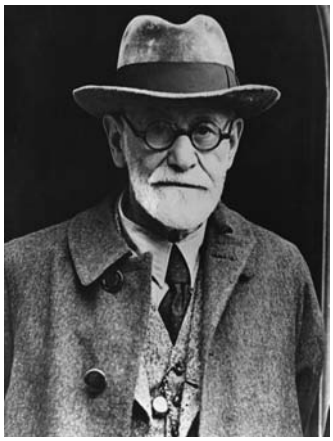
This chapter is divided into two major sections. The first such section is concerned with the history of psychology. It focuses on the major approaches to psychology that have been developed over the past century or so. The second section is devoted to major conceptual issues and debates in psychology. We will reserve discussion of those issues and debates until later in the chapter.

In Chapter 1, we saw how psychology is related to several other disciplines. For example, psychology has been influenced by physiology, genetics, biology, medicine, and anthropology. These influences help to explain the complexity and the richness of contemporary psychology, and shed light on the ways in which psychology has developed over the past century or so. However, the development of psychology has also been powerfully influenced by a relatively small number of theoretical approaches or "schools" of psychology.

The following five approaches are considered in this chapter: psychodynamic approach; behaviorism; humanism; cognitive psychology; and evolutionary psychology. They are considered in that order because it corresponds to the historical order in which the approaches were developed. The psychodynamic approach was developed by Sigmund Freud in Vienna at the start of the twentieth century. It was based mainly on a form of clinical therapy known as psychoanalysis. However, Freud extended the psychodynamic approach to account for childhood development and the development of personality. The behaviorist approach was developed by John Watson and other American psychologists from about 1912 onwards. This approach had its origins in animal research, and was mainly concerned with understanding the processes of learning under highly controlled conditions.

Humanism is sometimes known as the "third force" in psychology, with the psychodynamic and behaviorist approaches being the other two forces. It was developed by psychologists such as Carl Rogers and Abraham Maslow in the United States in the 1950s, and had its origins in philosophy. The humanist approach shared with the psychodynamic approach a major focus on therapy. The cognitive approach was developed mainly in the United States and the United Kingdom. This approach became increasingly influential from about the middle of the 1950s onwards. Cognitive psychology had some of its origins in the behaviorist approach, with its emphasis on controlled observation of behavior. However, the cognitive approach is much broader, since it considers a wide range of cognitive processes (e.g., attention; perception; reasoning; memory) as well as learning.

Finally, there is evolutionary psychology, which has been popularized by Steven Pinker (e.g., 1997). According to this approach, the process of evolution has served to shape our minds and behavior. As a result, much of human behavior is adaptive. That means it is well suited to the environment in which we find ourselves. This approach has proved controversial. In the eyes of many psychologists, it exaggerates the importance of



Sigmund Freud, 1856–1939.

genetic factors in influencing our behavior and de-emphasizes the role played by social and cultural factors.

PSYCHODYNAMIC APPROACH

Sigmund Freud (1856–1939) is the most influential figure in the entire history of psychology. He was Austrian, and trained in medicine before going on to specialize in neurology. His fame rests largely on his position as the founder of psychoanalysis. Note that psychoanalysis consists of two somewhat separate strands: (1) a complex set of theories about human emotional development; and (2) a form of treatment based in part on those theoretical ideas. Over the years, psychoanalysis was developed and extended by many others including his daughter Anna Freud, Karen Horney, and Erik Erikson. This entire approach is often described as "psychodynamic," and is discussed very well by Jarvis (2004).

Some of Freud's main contributions are discussed elsewhere in the book. His theory of psychosexual development (an approach to personality) is dealt with in Chapter 12, and his therapeutic approach is considered in Chapter 22. At a very general level, Freud assumed that the mind is divided into three parts. First, there is the id. This contains the sexual and aggressive instincts, and is located in the unconscious mind. Second, there is the ego. This is the conscious, rational mind, and it develops during the first 2 years of life. It works on the reality principle, taking account of what is going on in the environment. Third, there is the superego. This develops at about the age of 5 when the child adopts many of the values of the same-sexed parent (a process of identification). It is partly conscious and partly unconscious. It consists of the conscience and the ego-ideal. The conscience is formed as a result of the child being punished, and it makes the child feel guilty after behaving badly. The ego-ideal is formed through the use of reward. It makes the child feel proud after behaving well.

According to Freud, there are frequent conflicts among the id, ego, and superego. Most commonly, conflicts involve the id and the superego. The id wants to satisfy its basic motivational urges but the superego or conscience is opposed to that, and the ego tries to resolve the conflict. The ego protects itself by using various defense mechanisms (strategies designed to reduce anxiety). The main defense mechanism is repression, which involves forcing threatening thoughts and feelings into the unconscious. Other defense mechanisms are denial (refusing to accept the reality of a threatening event) and displacement (moving impulses away from a highly threatening object towards a less threatening one). Someone who has been made angry by their boss might show displacement by going home and kicking their cat.

Freud assumed that the mind exists at three levels: the conscious; the preconscious; and the unconscious. The conscious consists of those thoughts that are currently the focus of attention. The preconscious consists of information and ideas that could be retrieved easily from memory and brought into consciousness. The unconscious consists of information that is either very difficult or almost impossible to bring into conscious awareness.

Psychoanalysis as a form of therapy can be regarded as the first "talking cure." Freud argued that individuals experiencing traumatic events in childhood (e.g., sexual abuse) tend to repress their memories for those events by forcing them into the unconscious. Crucial to the success of therapy is allowing patients to gain access to their repressed feelings and thoughts, with the goal being to provide them with insight into the true nature of their problems. The retrieval of repressed memories can be facilitated by free association or by dream analysis. In free association, patients are asked to respond rapidly to various words presented to them with the first ideas that come into their minds. Freud regarded dream analysis as important because he argued that people's deep-seated feelings and concerns influence their dreams. People's reports of their dreams are typically fairly innocuous, but psychoanalysis can reveal the hidden meanings contained in them.

After Freud's death, neo-Freudians such as Anna Freud and Karen Horney developed ego analysis, which is based on the notion that therapy should focus on strengthening the ego so that it can achieve more gratification. Ego analysis makes use of free association and other techniques associated with psychoanalysis. However, it differs from psychoanalysis in that it focuses much more on the patient's *current* social and interpersonal problems than on their childhood experiences. It also differs in that ego analysts regard society as being a positive force in most people's lives, whereas Freud emphasized the ways in which society inhibits individuals.

Another neo-Freudian approach to therapy is based on Melanie Klein's object relations theory (discussed by Segal, 1964). The main focus is on early relationships and the effects that these relations have on later life. In essence, the therapist seeks to identify consistent relationship problems experienced by the client, and to find ways to improve matters.

Psychoanalyst Sigmund Freud and his daughter and fellow psychoanalyst Anna Freud arrive in Paris in 1938, after fleeing the Nazi occupation of their home country, Austria. They went on to London, where Sigmund died the next year. Anna did major work in the field of child psychology until her death in 1982.

Evaluation

- (+) Freud hugely expanded the scope of psychology. Before Freud, psychology was rather narrow, focusing on topics such as simple learning and associations of ideas. In contrast, Freud argued that psychology is relevant to virtually all human behavior, and history has proved him right.
- (+) Some of Freud's very general ideas have survived extremely well and are still generally accepted. For example, Freud argued that childhood experiences influence adult behavior and personality, that unconscious processes and motives influence our behavior, and that many of the behavioral symptoms of patients with anxiety disorders can be understood as attempts to reduce their anxiety level.
- (+) Freud developed the first systematic form of therapy for mental disorders based on psychological principles. Remarkably, psychoanalysis was as good as (or better than) most competing forms of therapy for more than 50 years after it was put forward.
- (+) Freud's theory of psychosexual development was the first systematic theory of personality.
- (+) As Williams (1987) pointed out, "Psychoanalysis has been society's most influential theory of human behavior . . . it profoundly altered Western ideas about human nature and changed the way we viewed ourselves and our experience."
- (−) Many of Freud's theoretical ideas are unscientific in that they lack falsifiability, i.e., the possibility of disproof. For example, we can't devise an experiment to prove (or disprove) the notion that the mind is divided into the id, ego, and superego.
- (−) Most of Freud's evidence for his ideas was obtained from clients during therapy. This evidence was probably contaminated—what patients said was influenced by what Freud had said previously and his known views. In addition, Freud may well have used his theoretical preconceptions to produce distorted interpretations of what patients said.
- (−) When Freud's specific ideas can be tested, they have generally been found to be wrong. For example, there is very little evidence supporting the existence of an Oedipus complex (young boys' sexual desire for their mother and consequent fear of their father). Another example is that Freud exaggerated the differences between males and females ("anatomy is destiny"), and has often been criticized for being sexist.

Freud's work was largely with middle-class women in Vienna in the 1890s and 1900s. How relevant do you think his ideas are to other cultures, particularly given the social changes during the twentieth century?

John Watson, 1878–1958.

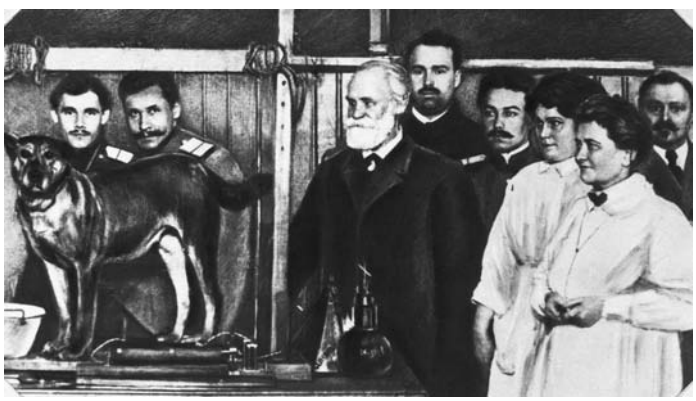
BEHAVIORISM

The behaviorist approach to psychology started in the United States in the early years of the twentieth century. The central figure in this approach was John Watson (1878–1958). According to Watson (1913):

> *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 method.*

Note that Watson believed that a major goal of psychology is to control behavior. This helps to explain the emphasis the behaviorists placed on the study of learning rather than on other aspects of psychological functioning. If you want to change someone's behavior, you need to provide the relevant learning experience.

Watson and the other early behaviorists were greatly influenced by the work of Ivan Pavlov (1849–1936) on classical conditioning in dogs (see Chapter 7). Dogs salivate when food is put in their mouths, and Pavlov found they could be trained to salivate to a neutral stimulus such as a tone. This tone was presented just before food on several occasions, so that the tone signaled the imminent arrival of food to the dog. Finally, Pavlov presented the tone on its own without any food, and found that this led to the dog salivating. This form of learning is known as classical conditioning.



Russian psychologist Ivan Pavlov, a dog, and his staff, photographed circa 1925–1936.

Why was Watson so impressed by Pavlov's work? First, Pavlov focused on observable stimuli and responses, and so his research seemed to be scientific. For example, the amount of learning could be assessed by the quantity of salivation produced by the tone. Second, Pavlov's work suggested that learning involves the formation of an association between a stimulus (e.g., a tone) and a response (e.g., salivation). Watson assumed that most (or all) learning was of this type.

Burrhus Fred Skinner (1904–1990) was the most influential behaviorist. His main assumption was that nearly all behavior is under the control of reward or reinforcement. Responses followed by reward will increase in frequency, whereas those not followed by reward will decrease in frequency. This is known as operant conditioning (see Chapter 7). The responses studied by Skinner were very simple (e.g., lever pressing; pecking), and it is unlikely that operant conditioning explains more complex forms of learning.

B.F. Skinner, 1904–1990.

Skinner seems to have favored the notion of equipotentiality, according to which virtually any response can be conditioned in any stimulus situation. This notion is simply incorrect. For example, Breland and Breland (1961) tried to train a pig to perform the (apparently) simple task of inserting a wooden token into a piggy bank for reward. However, the pig turned the token up with its snout, tossed it in the air, and so on. Thus, the pig behaved in ways that came "naturally" to it rather than those required to receive reward.

The behaviorists believed strongly (but wrongly!) that behavior is determined almost entirely by environmental factors and by learning. They argued that genetic factors are relatively unimportant: "There is no such thing as an inheritance of capacity, talent, temperament, mental constitution and characteristics. These things depend on training that goes on mainly in the cradle" (Watson, 1924).

The behaviorists' emphasis on *external* stimuli and responses was accompanied by a virtual ignoring of *internal* physiological (and other) processes. For example, Skinner (1980) argued that, "A science of behavior has its own facts . . . No physiological fact has told us anything about behavior that we did not know already." Even more dubiously, the behaviorists did not regard the brain as being of central importance. According to Murphy and Kovach (1972), "Though the brain remains a connecting station, it is for the

behaviorist no more intelligible to say that we think with the brain than to say that we walk with the spinal cord."

Behaviorism has influenced the development of psychology in two important ways. First, the behaviorists spelled out more systematically than had been done before exactly how psychology could achieve scientific status. In particular, they claimed that the careful observation of behavior in controlled settings is of fundamental importance to psychology, a claim that still seems valid one century later.

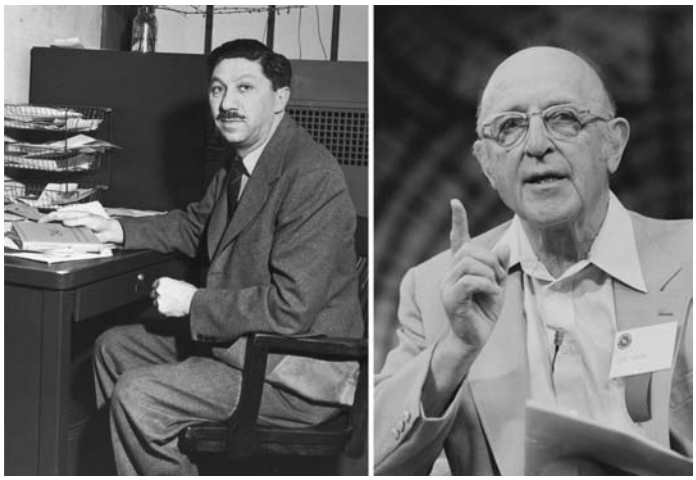
Second, behaviorism has had a powerful influence on the treatment of mental disorders through the development of behavior therapy (see Chapter 21). This form of therapy is based on the assumptions that abnormal behavior develops through conditioning, and that conditioning principles can be used to achieve recovery. How effective is behavior therapy compared to other psychological forms of treatment? Matt and Navarro (1997) considered 63 meta-analyses in which different types of therapy had been compared in what we might call a meta-meta-analysis. Behavior therapy and cognitive therapy seemed to be slightly more effective than psychodynamic or client-centered therapy. However, this probably exaggerated the value of behavior and cognitive therapy. Clients treated by behavior or cognitive therapy often had less serious symptoms, and behavior and cognitive therapists tended to use less stringent measures of recovery than did psychodynamic and client-centered therapists.

Evaluation

- (+) The behaviorists' general approach to psychology based on controlled experiments and observations of behavior has proved of lasting value.
- (+) Behavior therapy is an effective form of treatment for several mental disorders.
- (−) Skinner argued that we learn mainly by performing responses that are rewarded. In fact, however, much of our learning occurs through observing the behavior of other people (Bandura, 1977; see Chapter 7).
- (−) The most general problem with behaviorism is that it understated the impact of internal factors (e.g., past knowledge; goals) on behavior. According to Skinner, our behavior is controlled by *current* rewards and punishments. If that were true, then we would be like weather vanes, being blown about by changes in the rewards and/or punishments in the environment (Bandura, 1977). In fact, of course, much of our behavior is relatively consistent because we are controlled in part by various long-term goals (e.g., obtaining a psychology degree).
- (−) The behaviorists assumed that reward or reinforcement has a major impact on learning. However, they often blurred the distinction between learning and performance. If someone offered you a money reward every time you said, "The earth is flat," you might be persuaded to say it hundreds of times. Although the reward would have influenced your performance or behavior, it is most unlikely that it would have influenced your learning to the extent that you started to believe that the earth is actually flat. However, you would have learned a simple way of accumulating a lot of money!

HUMANISTIC APPROACH

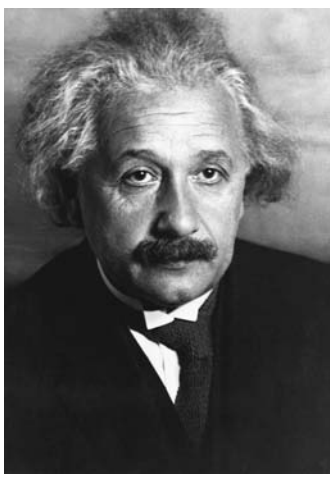
The humanistic approach to psychology was developed mainly by Carl Rogers and Abraham Maslow in the United States during the 1950s. Humanistic psychology "is concerned with topics that are meaningful to human beings, focusing especially upon subjective experience and the unique, unpredictable events in individual human lives" (Cartwright, 1979, pp. 5–6). Humanistic psychologists focus on issues such as personal responsibility, free will, and the



Abraham Maslow (left) and Carl Rogers (right), two of the main developers of the humanistic approach to psychology.

individual's striving towards personal growth and fulfillment. Of particular importance, humanistic psychologists favor a reliance on **phenomenology**, which involves reporting pure experience with no attempt at interpretation by the person doing the reporting. According to Rogers (1951, p. 133), "This kind of personal, phenomenological type of study . . . is far more valuable than the traditional 'hard-head' empirical approach. This kind of study, often scorned by psychologists as being 'merely self-reports,' actually gives the deepest insight into what the experience has meant."

As the above quotation suggests, humanistic psychologists did not subscribe to the scientific approach to psychology. Their anti-scientific approach was expressed forcefully by Maslow (1968, p. 13): "The uniqueness of the individual does not fit into what we know of science. Then so much the worse for that conception of science."



Maslow characterized Einstein as a famous individual who demonstrated "self-actualization"— including characteristics such as self-acceptance, resistance to cultural influences, empathy, and creativeness.

One of the main achievements of the humanistic approach is Maslow's hierarchical theory of motivation (discussed fully in Chapter 3). Maslow argued that previous theories of motivation were limited, because they focused only on basic motives such as sex, hunger, and thirst. He argued that most humans are also motivated by several other needs. Of particular importance is the need for self-actualization, which involves fulfilling one's potential in the broadest sense. Maslow (1954) identified Abraham Lincoln and Albert Einstein as two famous people who were self-actualized.

Another major achievement of the humanistic approach was Rogers' client-centered therapy, which was later called person-centered therapy. This form of therapy was based on the notion that the concept of "self" is of fundamental importance to an understanding of human behavior. Rogers (1967, p. 108) had this to say when discussing what mattered to his clients:

> *Below the level of the problem situation about which the individual is complaining—behind the trouble with studies or wife or employer . . .—lies one central search. It seems to me that at the bottom each person is asking "Who am I, really? How can I get in touch with this real self, underlying all my surface behavior? How can I become myself?"*

Rogers (1975) developed these ideas. He argued that the main goals of therapy should be to allow clients to develop a sense of personal agency and to become self-actualized by thinking about themselves in an honest and accepting way. These goals can be achieved provided the therapist consistently displays three qualities:

1. *Unconditional positive regard*: The therapist is always supportive.
2. *Genuineness*: The therapist is spontaneous and open.
3. *Empathy*: The therapist has a good understanding of the client's feelings and concerns.

There are two other important features of Rogers' approach to therapy. First, he was one of the first therapists to make available detailed information about what happened in treatment sessions (e.g., use of tape recordings). That made it easy for other therapists to identify key aspects of client-centered therapy. Second, most therapists modify the therapy they provide to take account of the specific disorder from which the client is suffering. In contrast, Rogers did not believe in the value of categorizing mental disorders. He believed that a single approach based on unconditional positive regard, genuineness, and empathy was nearly always appropriate.

Key Term

Phenomenology: an approach in which the focus is on the individual's direct reports of experience.

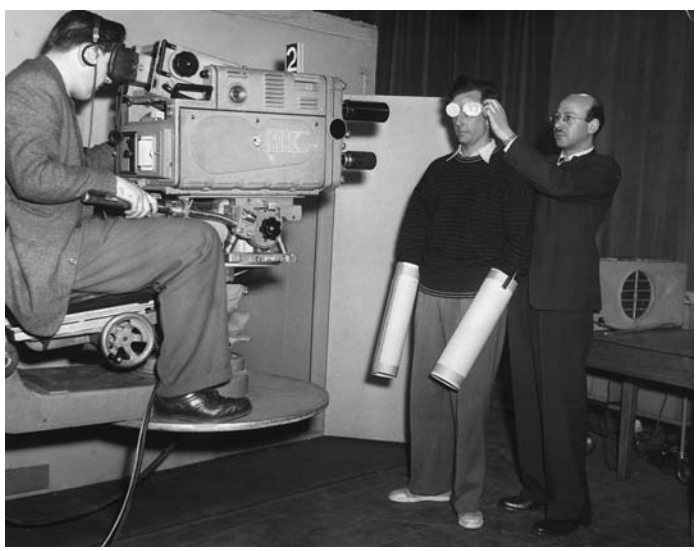
Evaluation

- + Humanistic psychology focused on issues of major concern to people (e.g., development of the self).
- + Major ingredients of client-centered (or person-centered) therapy such as therapist empathy, genuineness, and warmth or acceptance (related to unconditional positive regard) are predictive of therapeutic success (Orlinsky, Grave, & Parks, 1994).
- + A meta-analysis of studies on client-centered therapy indicated that the average client showed more improvement than 80% of individuals not receiving treatment (Greenberg, Elliott, & Lietaer, 1994). This suggests that client-centered therapy is moderately effective.
- − The emphasis on phenomenology means that humanistic psychologists haven't systematically explored unconscious processes and structures.
- − Client-centered therapy is reasonably effective when treating less severe disorders, but is of little value in treating severe mental disorders (Rudolph, Langer, & Tausch, 1980).
- − The refusal by humanistic psychologists to adopt a scientific approach to psychology has limited the value of humanistic psychology, and has meant that its current impact is modest.

COGNITIVE APPROACH

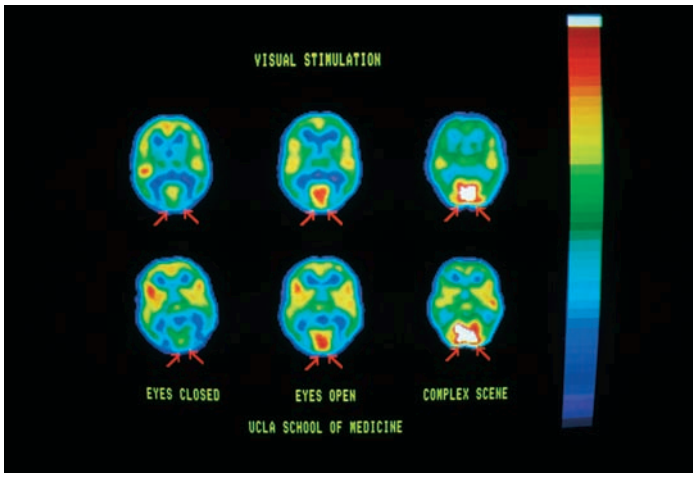
As we saw in Chapter 1, cognitive psychology developed in the 1950s under the influence of key figures such as Donald Broadbent, Herb Simon, and George Miller. One of the main reasons why the cognitive approach started to become influential at that time was a growing dissatisfaction with the behaviorist approach. Suppose that we want to understand cognitive abilities such as our mastery of language or the processes involved in problem solving. It is difficult to do that from the behaviorist perspective with its emphasis on observable behavior. What is needed is a focus on internal processes, which is what cognitive psychologists do. They study the main *internal* psychological processes involved in making sense of the environment and deciding what actions might be appropriate. These processes include attention, perception, learning, memory, language, problem solving, reasoning, and thinking. These processes are discussed in detail in Chapters 6–10 of this book and also by Eysenck (2006).

Research in cognitive psychology during the 1950s, 1960s, and much of the 1970s consisted almost entirely of laboratory experiments in which healthy participants (typically undergraduate students) performed various tasks under well-controlled or "scientific" conditions. Such research remains important to this day. It has contributed enormously to our understanding of human cognition and has had a massive influence on the cognitive neuropsychological and cognitive neuroscience approaches that followed (discussed below).



Cognitive psychology developed in the 1950s, largely taking the form of laboratory-based experiments performed under well-controlled conditions.

The cognitive approach expanded in the 1970s with the development of cognitive neuropsychology. There is an apparent paradox with cognitive neuropsychology because it involves studying brain-damaged patients in order to shed light on cognitive processes in intact individuals. It is based on the assumption that, "Complex systems often reveal their inner workings more clearly when they are malfunctioning than when they are running smoothly" (McCloskey, 2001, p. 594). As an example, McCloskey described how he only began to understand



An example of a PET scan. Cognitive neuroscience makes use of brain imaging such as this to study activation levels in different parts of the brain, and so increase our understanding of cognitive processes.

how his laser printer worked when it started misprinting things. Thus, we may develop an understanding of cognitive processing in intact individuals by focusing on the particular problems in cognition experienced by brain-damaged patients. For example, it has been found that some brain-damaged patients have very poor long-term memory but intact short-term memory, whereas others have poor short-term memory but intact long-term memory (Eysenck, 2006). This strongly suggests that there are separate short-term and long-term memory systems located in separate parts of the brain.

Since the early 1990s, there has been a phenomenal increase in **cognitive neuroscience**. This is a branch of cognitive psychology in which brain imaging is used in conjunction with behavioral measures in order to increase our understanding of the cognitive processes involved in performing a given task. You have almost certainly seen brightly colored pictures of the brain in action—such pictures are produced by using brain imaging to identify the activation levels in different parts of the brain when a task is performed.

The cognitive neuroscience approach can be very effective. For example, there has been controversy concerning the processes involved in visual imagery (imagining an object or scene with your eyes closed). The major possibilities are that visual imagery involves the same processes as visual perception or that it involves more abstract thinking based on our knowledge of objects and situations. Brain-imaging studies have shown that the same brain areas are generally activated during visual imagery and visual perception, including those brain areas involved in the early stages of visual perception (see Kosslyn & Thompson, 2003, for a meta-analysis).

As mentioned in Chapter 1, cognitive psychology has been very influential in the development of cognitive therapy (see Chapter 22). Cognitive therapy is based on the assumption that anxious and depressed patients have dysfunctional thoughts and beliefs about themselves and about the world. For example, Newmark, Frerking, Cook, and Newmark (1973) found that the statement, "One must be perfectly competent, adequate, and achieving to consider oneself worthwhile," was agreed to by 80% of anxious patients compared with 25% of nonpatients.

There are various forms of cognitive therapy, and it is often combined with behavior therapy to produce cognitive-behavior therapy. In essence, however, cognitive therapy is designed to replace dysfunctional thoughts and beliefs with more accurate and positive ones. This can be done by having patients challenge their dysfunctional thoughts. For example, snake phobics who greatly exaggerate the threateningness of snakes generally have more realistic beliefs about snakes after they have been persuaded to spend time in close proximity to them.

Evaluation

- Cognitive psychology has proved extremely effective in enhancing our understanding of human cognition. The development of cognitive neuropsychology and cognitive neuroscience has contributed greatly to this effectiveness.
- Cognitive psychology has benefited from extensive use of the experimental method. This has led to well-controlled experiments producing numerous replicable findings.
- As mentioned in Chapter 1, cognitive psychology has become increasingly influential in several other areas of psychology, including social psychology, developmental psychology, and abnormal psychology. Some of the fruits of that influence will be discussed in various chapters of this book.

Key Term

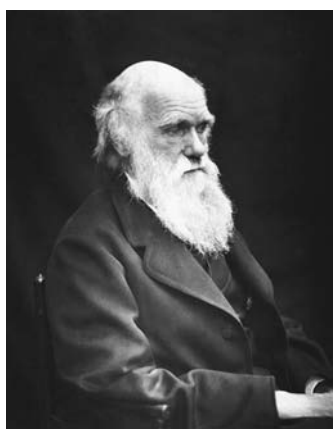
Cognitive neuroscience: an approach within cognitive psychology that involves combining brain-imaging data with behavioral measures to understand human cognition.

- (+) Cognitive therapy is generally effective and compares well against other forms of therapy (e.g., Matt & Navarro's, 1997, meta-analysis; see Chapter 22).
- (−) Laboratory research on cognitive processes may lack **ecological validity**, which is the extent to which the findings of laboratory studies apply to everyday life. In the real world, people typically try to have an impact on the environment. In contrast, the stimuli presented to participants in most cognitive experiments are determined by the experimenter's plan and are uninfluenced by the participants' behavior.
- (−) Measures of the speed and accuracy of task performance provide only *indirect* evidence about the internal processes.
- (−) Discovering that brain areas x and y are activated when people perform a given task does not directly tell us what cognitive processes occurred in those areas.
- (−) Many cognitive psychologists fail to take account of individual differences, and thus seem to assume that everyone's cognitive system is similar and is used in similar ways. However, there is increasing recognition that individual differences are important and need to be considered.

EVOLUTIONARY PSYCHOLOGY

As we saw in Chapter 1, Darwin's theory of natural selection assumes that evolution selectively favors some members of any given species over others. This is known as survival of the fittest, meaning that those individuals whose characteristics equip them best to cope with the environment will be most likely to reproduce. In recent decades, Darwin's influence has manifested itself in evolutionary psychology, an approach that focuses on the effects of natural selection on the development of the human mind. In the words of one of the leading evolutionary psychologists, Steven Pinker (1997, p. 42):

> *Natural selection . . . acts by designing the generator of behavior: the package of information processing and goal-pursuing mechanisms called the mind. Our minds are designed to generate behavior that would have been adaptive, on average, in our ancestral environment.*



Charles Darwin, 1809–1882.

Many of the key assumptions made by evolutionary psychologists are contained in the figure on the following page. **Inclusive fitness** is the notion that natural selection favors organisms that maximize replication of their genes directly by reproduction or indirectly by helping those with whom they share genes (e.g., immediate family). **Kin selection** is the notion that organisms are selected to favor their own offspring and other genetically related family members. **Differential parental investment** is the notion that females typically have a greater parental investment than males. Why is that the case? When a child is born, the mother typically devotes years of her life to looking after it. In contrast, the "costs" incurred by the father are often much less.

The other theoretical assumptions shown in the figure on the following page follow more or less directly from the assumptions just discussed. For example, it is assumed that cuckoldry (discovering their partner has had sex with someone else) causes more jealousy in males than in females. The explanation is as follows. Men can only justify their parental investment in a child provided it was actually fathered by them. If their partner is unfaithful, they cannot be sure that any child is actually theirs. In contrast, women always know for certain whether any given child is theirs regardless of whether their partner is faithful or not.

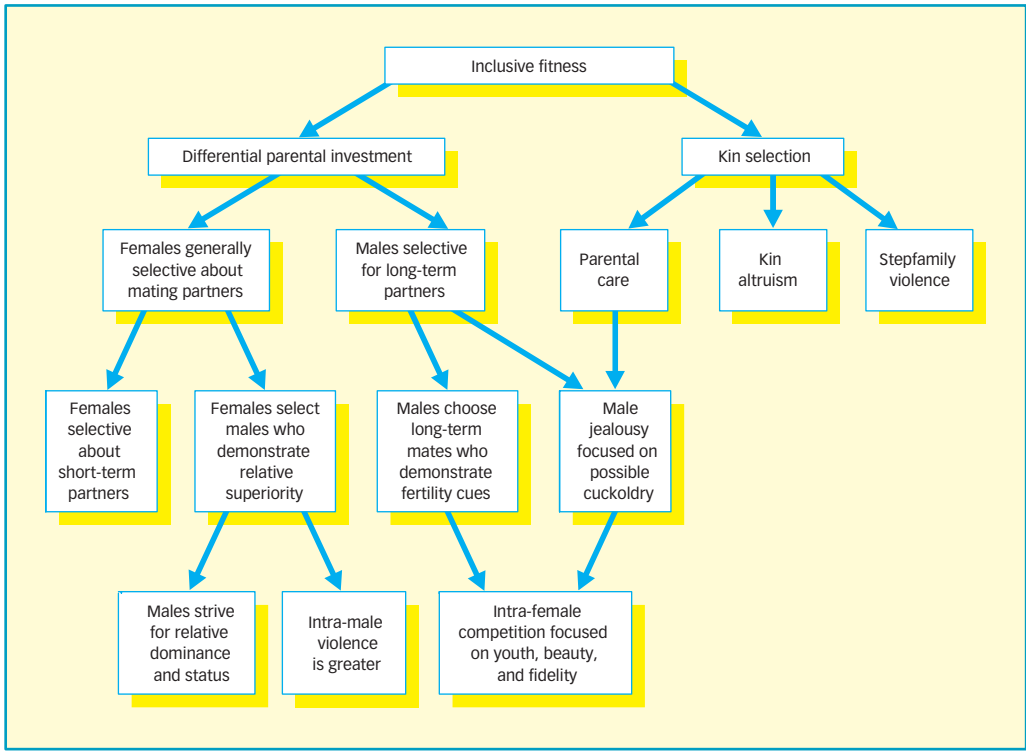
Key Terms

Ecological validity:
the extent to which the findings of laboratory studies are applicable to everyday settings and generalize to other locations, times, and measures.

Inclusive fitness:
the notion that natural selection favors individuals who maximize replication of their genes either directly via reproduction or indirectly by helping others who are genetically related to them.

Kin selection:
the notion that natural selection favors individuals assisting those genetically related to them.

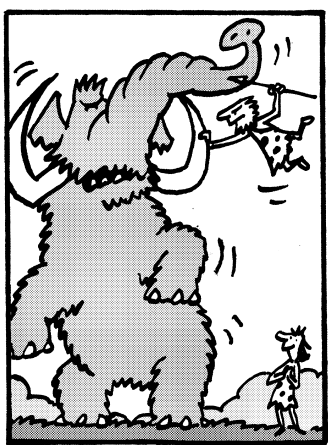
Differential parental investment:
the notion that females have greater parental investment than males, as a result of which they are more selective in their choice of mates.



The theoretical approach adopted by evolutionary psychologists, with the most general assumptions at the top and the most specific assumptions at the bottom. From Kenrick (2001). Copyright © American Psychological Association. Reproduced with permission.

It would be easy to assume that evolutionary psychologists believe that humans are *always* well-adapted to their environment. In fact, that assumption is false, because it can take thousands of generations for natural selection to produce substantial genetic changes. As Buss (1999, p. 29) pointed out, "We carry around a Stone-Aged brain in a modern environment. A strong desire for fat, adaptive in a past environment of scarce food resources, now leads to clogged arteries and heart attacks."

According to evolutionary psychologists, a central goal of our lives is to ensure the survival of our genes. However, this is by no means necessarily a *conscious* goal. What evolutionary psychologists actually believe was expressed by Pinker (1997, p. 44): "Our goals are subgoals of the ultimate goal of the genes, replicating themselves . . . As far as *we* are concerned, our goals . . . are not about genes at all, but about health and lovers and children and friends." Thus, the success most of us have in spreading our genes often occurs as a by-product of our goals in life rather than in a direct way.



Evidence that the sexual attitudes and behavior of men and women differ approximately as predicted by evolutionary psychology is discussed in Chapter 3. The prediction that we should be more willing to behave altruistically (unselfishly) towards close relatives than towards distant relatives or strangers was tested by Burnstein, Crandall, and Kitayama (1994; see also Chapter 18). They presented participants with scenarios in which individuals had problems, and asked whether they would be willing to help. As predicted, participants were much more willing to help close relatives than other people. This was especially the case with a serious emergency (a house was burning rapidly, and only one of the three people in the house could be saved).

Since Burnstein et al. (1994) used hypothetical situations, it is possible that the participants responded in socially desirable ways rather than in the way they would in real life. However, Essock-Vitale and McGuire (1985) obtained similar findings based on real-life data. Female participants described occasions on which they had received or given help. They were five or six times more likely to have helped their close kin (e.g., children) than less close kin (e.g., nephews or nieces).

According to evolutionary psychology, men should be more distressed than women if their partner enjoyed passionate sex with another person, whereas women should be more distressed by the thought of their partner forming a close emotional bond with another person. Buunk, Angleitner, Oubaid, and Buss (1996) obtained support for these predictions among men and women in the United States, Germany, and The Netherlands. However, this study focused on *hypothetical* rather than *actual* infidelity. Harris (2002) examined people's reactions to actual infidelity in their partners, and found no differences between men and women. Members of both sexes focused more on emotional than on sexual infidelity. These findings are totally inconsistent with the notion that evolutionary pressures have led men and women to respond very differently to sexual and emotional infidelity.

Parental care and altruism

"Bringing up baby" involves heavy costs to many animal parents: in mammals this includes biological investment in egg production, growth and development of the fetus in the womb, milk production after birth, time and effort spent in care and defense, etc. In birds there is a similar amount of investment in nest building, egg production, incubation, feeding, etc. These behaviors could be argued to be of no benefit to the parents directly, and so could come under the heading of altruism. This altruism is even more marked if the parents are assisted by other family members, i.e., others who share the same genes. Mumme (1992) observed a type of Florida jay whose older broods acted as helpers with younger offspring, with the result that the younger brood had a greatly increased survival rate.

Evaluation

- (+) Evolutionary psychology focuses on determinants of behavior (e.g., natural selection) that have been ignored by other approaches to psychology.
- (+) Evolutionary psychology has produced several original insights on topics such as altruism and mate selection.
- (−) Any type of behavior can be explained by claiming it is adaptive in an evolutionary sense if it is desirable (e.g., parenting) or maladaptive because of evolutionary time lag if undesirable (e.g., male violence). There is a danger of evolutionary psychologists providing unconvincing explanations of human behavior, many of which cannot be tested empirically.
- (−) Evolutionary psychology often seems to focus too much on evolutionary processes and not enough on the relevance of such processes for human behavior.
- (−) Numerous social and cultural factors are not considered fully by evolutionary psychologists. As a consequence, evolutionary psychologists tend to minimize the importance of cross-cultural differences.

ETHICAL ISSUES IN PSYCHOLOGY

Scientists often confront important and difficult ethical issues in the course of their work. For example, was it morally defensible for physicists to develop the atomic bomb during the 1940s? Should scientists participate in the development of chemical weapons that could potentially kill millions of people? All of these ethical questions are difficult to answer because there are good arguments for and against each program of research.

There are probably more ethical issues associated with research in psychology than in any other scientific discipline. There are various reasons why this is the case. First, all psychological experiments involve the study of living creatures (whether human or the members of some other species), and the rights of these participants to be treated in a caring and respectful way can be infringed by an unprincipled or careless experimenter.

Second, the findings of psychological research may reveal unpleasant or unacceptable facts about human nature, or about certain groups within society. No matter how morally upright the experimenter may be, there is always the danger that extreme political organizations will use research findings to further their political aims.

Third, these political aims may include social control. There is a danger that the techniques discovered in psychological research might be exploited by dictators or others seeking to exert unjustifiable influence on society or to inflame people's prejudices.

MILGRAM

We will start by considering two famous (or perhaps infamous) studies in psychology. First, there is Milgram's (1963, 1974) research on obedience to authority (see Chapter 19). He asked his participants to adopt the role of a teacher and to administer very strong (and potentially lethal) electric shocks to the learner, who was said to suffer from a heart condition. Approximately two-thirds of people agreed to administer these very strong shocks. In fact, the learner did not receive any shocks, but the teacher was unaware of that. At one point, the learner yelled, "I can't stand the pain," and later his response was an agonized scream.

The effects of this experiment on the teachers were dramatic, as Milgram (1974) pointed out. For example, as one observer reported, "I observed a mature and initially poised businessman enter the laboratory smiling and confident. Within 20 minutes he was reduced to a twitching, stuttering wreck, who was rapidly approaching a point of nervous collapse. He constantly pulled on his earlobe, and twisted his hands. At one point, he pushed his fist into his forehead and muttered: 'Oh God, let's stop it.' And yet he . . . obeyed to the end." Another participant was a housewife called Mrs. Elinor Rosenblum: "Every time I pressed the button, I died. Did you see me shaking? I was just dying here to think that I was administering shocks to the poor man."

You are probably thinking that Milgram's research was completely unethical, and such research certainly wouldn't be permitted in most countries today. However, Milgram had some arguments on his side. All of the participants were fully debriefed at the end of the experiment—the true purpose of the experiment was explained and they were told that the learner had not received any shocks. As many as 84% of the participants said they were pleased to have taken part, with only 1% expressing negative feelings. Approximately 80% of participants said that more experiments of this kind should be carried out, and 74% said that they felt they had learned something of personal importance.

ZIMBARDO

Zimbardo's (1973) Stanford Prison Experiment is another well-known study raising major ethical issues. In this study, a mock prison was set up with mock guards and mock prisoners. Some of the "guards" behaved very aggressively, and the overall level of violence in the prison increased over the days. After only 1 day in the prison, one of the prisoners became emotionally disturbed and starting screaming and crying uncontrollably. He had to be released. On the fourth day, two more prisoners showed symptoms of severe emotional disturbance and had to be released. Another prisoner developed a stress-induced rash all over his body, and also had to be released.

Zimbardo tried to minimize the after-effects of participation in his Stanford prison experiment by asking the participants to sign an informed consent form before the experiment began. Even so, some of the mock guards became very aggressive during the experiment, and four of the mock prisoners had to be released early.

Savin (1973) referred to the mock prison as a "hell." He argued that, "Professors who, in pursuit of their own academic interests and professional advancement, deceive, humiliate, and otherwise mistreat their students, are subverting the atmosphere of mutual trust and intellectual honesty without which . . . neither education nor free inquiry can flourish."

Zimbardo (1973) answered his critics. He pointed out that day-long debriefing sessions were held to discuss the moral conflicts involved in the study and to reassure participants. All the participants had signed an "informed consent" form that made it clear there would be an invasion of privacy, loss of some civil rights, and harassment. Questionnaires were sent to participants of the Stanford Prison Experiment at regular intervals after the study. The replies indicated that there was a large reduction in negative feelings about the experiment as time went by.

RESOLVING ETHICAL ISSUES

What can be done to resolve the ethical issues that arise from the fact that participants in experiments often have a power deficiency relative to the experimenter? Kimmel (1996) compared the ethical codes or guidelines produced by 11 different countries. Most of them focus on three basic principles:

1. Protection of individuals from physical harm
2. Protection of individuals from psychological harm
3. Confidentiality of the data obtained from individual participants.

There is general agreement that full informed consent (i.e., participants are told in detail what will happen in the experiment and agree to it) and avoidance of deception are important in ensuring that the first two principles are achieved. However, it is sometimes difficult to do this. Small children and patients with certain mental disorders may be unable to provide informed consent, in which case it is usual for a close relative to do so. The notion that deception should always be avoided in psychological research is too stringent, because it ignores the fact that many forms of deception are entirely harmless. For example, some memory researchers are interested in incidental learning, which involves people's ability to remember information they weren't asked to remember. This can only be done by deceiving participants as to the true purpose of the experiment until the memory test has been presented. Deception is justifiable if it is essential, not potentially damaging, and the research is important scientifically.

Another important factor in ethical research is that participants are explicitly told that they can withdraw from the experiment at any time without providing a reason. Finally, there should be a debriefing at the end of the experiment, with participants being given fairly detailed information about the nature of the research.

SOCIALLY SENSITIVE RESEARCH

So far we have focused mainly on the wellbeing of those who participate in experiments. However, much research raises issues of relevance to society as a whole. This is especially so with socially sensitive research, which was defined by Sieber and Stanley (1988, p. 49) as, "studies in which there are potential social consequences or implications either directly for the participants in research or the class of individuals represented by the research." Socially sensitive research can produce risks for many people other than those directly involved as participants. For example, McCosker et al. (2001) carried out a study in which women who had been abused were interviewed. Transcribers who had the task of typing up what had been said in the interviews often became distressed. As a result, arrangements were made for them to have immediate access to crisis counseling if required.

Application of findings

The research carried out by psychologists such as John Bowlby and Sir Cyril Burt, among others, had a profound effect on social policy. These studies examined the role of the mother in childcare, and the development of IQ, and resulted in policies such as encouraging mothers to stay at home rather than going out to work, and the introduction of the 11-plus examination. The studies posed ethical dilemmas for the researchers because their findings could be used to manipulate human behavior and life choices, as well as adding to the knowledge-base of science.

Sieber and Stanley (1988) argued that important ethical concerns can arise with respect to four major aspects of socially sensitive research:

1. *Deciding on the research question or hypothesis to be tested* Problems may arise if the issues studied are private or stressful (e.g., sexuality), are associated with stigmatization or fear (e.g., focusing on illegal behavior), or are regarded as relevant by extreme political groups (Lee, 1993). An example is research on homosexuality. Morin (1977) found in a review of studies on gays and lesbians published between 1967 and 1974 that 70% of these studies addressed issues such as whether homosexuals are mentally ill, ways in which homosexuality can be identified, and the causes of homosexuality. Focusing on such issues suggests that being homosexual was regarded almost like a disease that need to be "cured."

2. *The conduct of research and the treatment of participants* This has been covered already.
3. *The institutional context* If the institutional context is perceived to be prestigious, it may make participants feel powerless and thus affect their behavior. Milgram (1974) found there was much more obedience to authority when his research took place at Yale University rather than in a run-down office building.
4. *Interpretation and application of research findings* An infamous example is the research of Goddard (1913). He gave intelligence tests to immigrants arriving in New York, claiming that 87% of Russians were "feeble-minded," as were 79% of Italians. He reached this ludicrous conclusion by ignoring the obvious fact that most of these immigrants had a very limited command of the English language. In spite of the woeful inadequacy of this research, it influenced the American government to reduce the level of immigration from southern and eastern Europe.

Striking a balance

We have seen the potential dangers of socially sensitive research. However, such research (while it may generate uncomfortable evidence) can produce valuable knowledge that can be used for the benefit of society as a whole. It is important to strike a balance. The American Psychological Association did this in its *Ethical Principles in the Conduct of Research with Human Participants* (1982, p. 74):

> *On one side is an obligation to research participants who may not wish to see derogatory information . . . published about their valued groups. On the other side is an obligation to publish findings one believes relevant to scientific progress, an objective that in the investigator's views will contribute to the eventual understanding and amelioration of social and personal problems.*

BIASES IN PSYCHOLOGY

Psychologists have frequently been accused of bias in their theoretical ideas and in their research. Thankfully, there is probably substantially less bias in psychology than used to be the case. However, it is worth considering in some detail three types of bias still to be found within psychology: gender bias; cultural bias; racial bias.

GENDER BIAS

The greatest difficulty in considering gender bias is to distinguish genuine gender differences from culturally created ones. For example, there is a common view that women are more emotional than men. This is not simply bias, because women *on average* are more emotional than men. For example, females score significantly higher than males on measures of negative affectivity (a personality dimension relating to negative emotions such as anxiety and depression) (e.g., Denollet, 2005).

Hare-Mustin and Marcek (1988) argued that there are two kinds of gender bias: **alpha bias** and **beta bias**. According to them (p. 457), "Alpha bias is the tendency to exaggerate differences; beta bias is the tendency to minimize or ignore differences." We can see these biases in the work/family literature (Febbraro, 2003). The argument that women experience much greater work/family stress than men, and so male-dominated structures need to be transformed as a result, is an example of alpha bias. Beta bias is involved when it is claimed that multiple roles (e.g., parent, spouse, worker) increase the wellbeing of women in the same way as men.

Within Western cultures, alpha bias is more common than beta bias. For example, Freud argued that girls suffer from "penis envy" when they discover that they lack a penis. He also claimed that children's superego or conscience develops when they identify with the same-sexed parent. Girls don't identify with their mother as strongly as boys identify with their father, and so allegedly girls develop weaker superegos than boys. The evidence doesn't support Freud. Hoffman (1975) found that (if anything) girls were better than boys at resisting the temptation to do what they had been told not to do.

Key Terms

Alpha bias: the tendency to exaggerate differences between the sexes.

Beta bias: the tendency to minimize differences between the sexes.

Evolutionary psychology has often been criticized for its alpha bias. According to evolutionary psychologists, evolutionary processes explain why women typically have much more parental involvement than men in their offspring, and why men are more likely to commit adultery. There is some validity in these views, but it is also important to take account of major cultural changes. For example, Schmitt (2005) found that men scored higher than women on a questionnaire concerned with a preference for promiscuity and avoidance of emotional investment in all 48 countries studied. However, the gender difference was much smaller in those countries in which women had access to money and power.

There is some evidence for alpha bias in the diagnosis of mental disorders. Ford and Widiger (1989; see Chapter 21) argued that histrionic personality disorder (involving excessive emotionality) is regarded as a distortion of stereotypical feminine traits, whereas antisocial personality disorder (involving hostility and aggression) is a distortion of stereotypical masculine traits. Therapists were given case studies of patients with these personality disorders. Therapists were much more likely to diagnose histrionic personality disorder when the patient was allegedly female rather than male, and to diagnose antisocial personality disorder when the patient was male rather than female.

There is evidence of beta bias in experimental research, that is, a tendency to reduce or minimize gender differences. Male and female participants are used in most studies. However, there is typically no attempt to analyze the data to see whether there are significant sex differences, presumably because it is assumed that none would be found. Some sex differences probably occur simply because male experimenters treat their female participants differently from their male ones. Rosenthal (1966) reported that male experimenters were more pleasant, friendly, honest, and encouraging with female than with male participants. This led him to conclude: "Male and female subjects may, psychologically, simply not be in the same experiment at all."

Finally, we consider methodological gender bias: the design of a study biases the chances of the researcher obtaining some particular finding. Methodological gender bias is most likely to be found when the direction of gender differences depends on the precise measures of behavior that are taken. For example, Bjorkqvist, Lagerspetz, and Kaukianen (1992) found boys displayed much more physical aggression than girls, but girls showed more indirect aggression (e.g., gossiping). Armed with that knowledge, you could design a study apparently showing that boys are more aggressive than girls or vice versa!

What can be done? Bem (1993) used the concept of an "enculturated lens" to suggest that the view of gender we receive from our culture distorts how we see men and women. Bem (1993, p. 2) suggested that we should make those lenses:

> *visible rather than invisible, to enable us to look at the culture's gender lenses rather than through them, for it is only when Americans apprehend the more subtle and systemic ways in which the culture reproduces male power that they will finally comprehend the unfinished business of the feminists' agenda.*

In sum, researchers' growing awareness of alpha bias, beta bias, and methodological gender is contributing to a reduction in these biases. It is worth remembering that, even when there are gender differences in behavior, there is still nearly always a substantial overlap in the behavior shown by males and females.

CULTURAL BIAS

We discussed cross-cultural differences in Chapter 1. In that chapter, we focused on the major distinction between collectivistic cultures in which one's key responsibility is to the group, and individualistic cultures in which people have a strong sense of personal responsibility for their own lives. Here we focus on the various approaches taken by psychologists who are interested in cultural differences.

Berry (1969) distinguished between emic constructs and etic constructs. **Emic constructs** are specific to a given culture, and so vary across cultures. In contrast, **etic constructs**

Key Terms

Emic constructs: these are constructs that are meaningful within any given culture but vary considerably across cultures.

Etic constructs: these are constructs that are meaningful within most or all cultures.

refer to universal factors common to all cultures. For example, the notion of the "family" is an etic construct, whereas the "nuclear family" (just parents and children) is an emic construct. According to Berry, it is common in the history of psychology for what are actually emic constructs to be mistaken for etic constructs.

The study of intelligence can be used to illustrate the above point. In the past, many psychologists argued that the same abilities of problem solving, reasoning, memory, and so on define intelligence in every culture. However, much of the evidence refutes that argument. For example, Cole, Gay, Glick, and Sharp (1971) asked adult members of the Kpelle tribe in Africa to sort familiar objects into groups. In most Western societies, people would sort the objects into categories (e.g., foods, tools). What the Kpelle tribespeople did was to sort them into functional groups (e.g., a knife with an orange, because an orange can be cut with a knife). Thus, what is regarded as intelligent behavior can differ from one culture to another. By the way, the Kpelle tribespeople showed that they could sort the objects into categories when asked to do so—they didn't do this spontaneously because they thought it was a stupid way of sorting.

An **imposed etic** is a technique or theory rooted in a researcher's own culture that is used to study other cultures. Much cross-cultural research on intelligence and personality has been based on the use of imposed etics. We have already seen an example in the field of intelligence (study by Cole et al., 1971) and here is one from the field of personality. Western research led to the identification of the Big Five personality factors (conscientiousness; agreeableness; extraversion; neuroticism; and openness; see Chapter 12). Kuo-shu, Yang, and Bond (1990) asked Taiwanese students to describe several people they knew using adjectives relating to the Big Five personality factors and adjectives taken from Chinese newspapers. Five factors emerged from an analysis of data using the adjectives from Chinese newspapers: social orientation, expressiveness, competence, self-control, and optimism. There was some agreement between the two sets of factors (e.g., agreeableness correlated +.66 with social orientation), but the overall similarity was fairly low. This suggests that personality structure in Taiwanese culture differs from that in Western cultures.

There may be profound cultural differences in ways of regarding personality. The entire Western notion of semi-permanent personality characteristics determining behavior seems to be less applicable in collectivistic cultures in which it is assumed that individuals will change to fit in with group expectations. For example, it has been found that East Asians regard personality traits as much more flexible and changeable than do people from Western cultures (Norenzayan, Choi, & Nisbett, 1999).

Berry (1969) proposed an appropriate method for cross-cultural research based on a **derived etic**. Emic studies in each of several cultures are conducted by local researchers using local techniques, and the findings are then compared. We can see this approach in action in the area of diagnosing mental disorders. DSM-IV (APA, 1994), which is American-based, focuses mainly on mental disorders common in the Western world (see Chapter 21). However, there is a short appendix in DSM-IV on culture-bound syndromes that have been found in other parts of the world. This appendix is very incomplete, because it leaves out many disorders totally ignored by DSM-IV. Here are a few examples:

- *pa-fend* (fear of wind) found in China
- *amafufunyana* (violent behavior caused by spirit possession) found in South Africa
- *brain fag* (problems in concentrating and thinking produced by excessive study—one to avoid!) found in West Africa.

In sum, there are grounds for optimism concerning cultural bias. There has been a dramatic rise in the amount of cross-cultural research, and such research is increasingly sensitive to the substantial differences from one culture to another. For example, this increased sensitivity can be seen in research on intelligence, personality, and categories of mental disorder. However, as was pointed out in Chapter 1, a full understanding of cultural differences will involve moving beyond simple categorizations of cultures (e.g., into individualistic and collectivistic).

Key Terms

Imposed etic: this involves applying techniques and/or theories based on one culture to other cultures without considering differences among cultures; see **derived etic**.

Derived etic: this involves researchers in various cultures developing techniques that are appropriate within their culture and then comparing the findings; see **imposed etic**.

RACIAL BIAS

Racial bias is a particularly unpleasant form of cultural bias. Howitt and Owusu-Bempah (1990) studied racial bias by considering every issue of the *British Journal of Social and Clinical Psychology* between 1962 and 1980. They were dismayed at the way in which Western personality tests such as the 16PF were used inappropriately in non-Western cultures. They pointed out that, "There were no studies which attempted to explore, for example, the Ghanaian or Chinese personality structures in their own terms rather than through Western eyes" (Howitt & Owusu-Bempah, 1990, p. 399). Since 1990, however, several researchers have systematically tried to do precisely that (see Chapter 12 and a review by Triandis & Suh, 2002).

Owusu-Bempah and Howitt (1994) claimed to have found evidence of racism in the American textbook by Atkinson, Atkinson, Smith, and Bem (1993). They pointed out that Atkinson et al. tended to categorize Western cultures together, and to do the same for non-Western ones. Owusu-Bempah and Howitt's (1994, p. 163) central point was that Atkinson et al. (1993) evaluated other cultures in relation to the technological and cultural achievements of the United States and Europe: "Cultures that fall short of this arbitrary Euro-centric standard are frequently described as 'primitive,' 'undeveloped,' or, at best, 'developing.' Religion, morality, community spirit, etc., are ignored in this racist ideological league table."

Controversy concerning racial differences has been especially heated with respect to intelligence. The starting point for controversy is that the mean difference in IQ between white and black people in the United States (and other countries) is about 15 points (favoring white people). This is only an average figure, and about 20% of black people have a higher IQ than that of the average white person. Most psychologists have assumed that the difference between white and black people is due entirely to the environmental deprivation suffered by black people, an assumption supported by much evidence (e.g., Brooks-Gunn, Klebanov, & Duncan, 1996; Mackintosh, 1986). However, some psychologists (e.g., H.J. Eysenck, 1981; Jensen, 1969) have argued that genetic factors might be involved.

This controversial issue is of very little scientific interest in that it is unlikely to tell us anything about the processes involved in human intelligence. It is based on the incorrect assumption that white and black people form separate biological groups; indeed, the concept of "race" itself has no precise scientific definition. Furthermore, it is impossible to carry out definitive research. Even H.J. Eysenck (1981, p. 79) admitted, "Can we . . . argue that genetic studies . . . give direct support to the hereditarian position? The answer must, I think, be in the negative . . . none of the studies carried out on white people alone, such as twin studies, are feasible." Finally, research on racial differences in intelligence poses major ethical issues. Extreme groups such as the British National Party have used the findings to promote racial disharmony, which is totally unacceptable.

What many psychologists (including the author) regard as a particularly offensive example of racial bias is the research of Rushton (e.g., 1990) on racial differences. He compared three racial groups he described as mongoloids (Asians), caucasoids (white people), and negroids (black people). His central argument was that mongoloids are more

Racial bias has unfortunately long been evident in some areas of psychological research. To apply a standard Western personality test to a Ghanaian community, for example, is inappropriate, given its cultural specificity. To glean meaningful results would require exploring the Ghanaian personality structures on their own terms, not from a Western perspective.

advanced than caucasoids in evolutionary terms, and caucasoids are more advanced than negroids. He claimed that evolutionary development has led to **neoteny**, which is an increase in the duration of childhood. One aspect of neoteny is an extended period of brain development, which is useful because it allows the brain to shape itself to some extent to fit the environment. The "evidence" he provided is shown in the table in the box below.

Rushton's controversial relative ranking of the mongoloid, caucasoid, and negroid races on several measures. Based on Rushton (1990).

	Mongoloids	Caucasoids	Negroids
Brain weight and intelligence			
Cranial capacity	1448 cc	1408 cc	1334 cc
Brain weight at autopsy	1351 g	1336 g	1286 g
IQ test scores	107	100	85
Maturation rate			
Age of walking	Late	Medium	Early
Age of first intercourse	Late	Medium	Early
Lifespan	Long	Medium	Short
Personality and temperament			
Aggressiveness	Low	Medium	High
Cautiousness	High	Medium	Low
Dominance	Low	Medium	High
Impulsivity	Low	Medium	High
Sociability	Low	Medium	High
Reproductive effort			
Size of genitalia	Small	Medium	Large
Permissive attitudes	Low	Medium	High
Sexually transmitted diseases	Low	Medium	High
Social organization			
Law abidingness	High	Medium	Low
Marital stability	High	Medium	Low
Mental health	High	Medium	Low

Many of the "facts" contained in the table (e.g., alleged race differences in age of walking and in mental health) are open to dispute. However, the greatest criticism is that the so-called evidence can be explained in simple, uncontroversial ways. Many of the differences (even if genuine) can be explained on the basis of the greater affluence of mongoloids and caucasoids than negroids. For example, it would not be surprising if poverty and deprivation led to a short lifespan, aggressiveness, low levels of law abidance, and impaired mental health. Banyard (1999, p. 85) attacked Rushton's (1990) article as being "academically shallow but openly racist," which is fair comment.

Some recent research has focused on reducing racial bias in people taking part in experiments. Plant, Peruche, and Butz (2005) used a computerized situation in which white participants pretended they were police officers deciding rapidly whether to shoot at suspects who were black or white. There was a greater tendency to shoot at black suspects. However, extensive practice in which race was unrelated to the presence or absence of a gun eliminated that racial bias. Thus, at least some aspects of racial bias can be altered fairly easily.

In sum, there is much less racial bias in psychological research now than was the case in years gone by. That is wholly desirable. Racial bias poses very serious ethical issues, and can be exceptionally dangerous when racially biased research is used by political extremists for their own ends.

Key Term

Neoteny: an extended period or duration of childhood resulting from evolution.

FREE WILL VS. DETERMINISM

The issue of free will versus determinism has occupied philosophers and psychologists for centuries. According to those who believe in determinism, people's actions are totally

determined by the external and internal forces operating on them. An example of an *external* force would be the influence of parents when rewarding certain behaviors. An example of an *internal* force could be hormones influencing the way in which someone behaves.

Those who believe in free will argue that matters are more complicated. Most of them accept that external and internal forces exist. However, they argue that people have free will because each individual nevertheless has some ability to choose his/her own behavior. Note that the typical positions adopted by advocates of determinism and of free will are not that far apart—determinists argue that behavior is totally controlled by external and internal forces, whereas those favoring free will argue that behavior is mostly controlled by external and internal forces but with the addition of free will.

The distinction between free will and determinism can be seen if we consider the following question: "Could an individual's behavior in a given situation have been different if he/she had willed it?" Believers in free will answer that question "Yes." In contrast, advocates of determinism respond "No." Some of the main arguments for and against these positions are discussed next.

DETERMINISM

Determinists argue that a proper science of human behavior is only possible if psychologists adopt a deterministic account, according to which everything that happens has a definite cause. Free will, by definition, doesn't have a definite cause. If free will is taken into account, it becomes impossible to predict human behavior with any precision. In Chapter 1, we saw that an important aspect of the scientific approach to psychology is that it involves carrying out controlled experiments in which we manipulate certain variables (e.g., difficulty of the learning material) to observe their effects on behavior (e.g., speed of learning). It is simply not possible to manipulate free will in that way.

According to some determinists, it is often possible with other sciences to make very accurate predictions from a deterministic position (e.g., forecasting planetary motion). If determinism is regarded as not applicable to psychology, then psychology is either a very different science from physics, chemistry, and so on, or it is not really a science at all.

Chemistry can be said to be an example of a deterministic science, in that certain results can be accurately predicted. Mixing chemical "a" and chemical "b" will produce chemical "c," for example.

Hard vs. soft determinism

We can distinguish between hard determinism and soft determinism. **Hard determinism** as it applies to psychology is based on two key assumptions. First, no action or behavior is free if it must occur. Second, every human action has antecedent causes that ensure that that *particular* action is performed rather than any other. The conclusion from these assumptions is that all human actions are determined and none of them is free. Those who believe in hard determinism include B.F. Skinner and Sigmund Freud.

Hard determinism has been applied extensively in other sciences (especially physics). It seemed appropriate in the eighteenth and nineteenth centuries when most physicists believed they would eventually be able to make very precise and accurate predictions about everything relevant to physics. However, what happened in the twentieth century suggested that they were unduly optimistic. According to chaos theory (Hilborn, 1999), very small changes in initial conditions can produce major changes later on. For example, theoretically the flap of a butterfly wing in one part of the world could ultimately change the whole weather system in a different part of the world. Such a chain of events doesn't lend itself to prediction, and so we can't show that an approach based on hard determinism is appropriate.

Many (probably most) psychologists favor an alternative position labeled **soft determinism** by William James. According to this position, it is accepted that all human

Key Terms

Hard determinism: the notion that all of our actions are totally determined by a combination of causes; see **soft determinism**.

Soft determinism: the notion that all behavior has a cause, but some forms of behavior are more constrained by the current situation than are others.

actions have a cause. However, it is assumed that there is a valid distinction between behavior highly constrained by the situation (that appears involuntary) and behavior only modestly constrained by the situation (that appears voluntary). For example, a child may apologize for swearing because he/she will be punished if an apology isn't forthcoming (highly constrained behavior) or because he/she is genuinely upset at causing offence (modestly constrained behavior). The underlying causes are more obvious when behavior is highly constrained by situational forces.

Evidence consistent with the views of William James was reported by Westcott (1988). Canadian students indicated how free they felt in various situations. They experienced the greatest feeling of freedom in situations involving an absence of responsibility or release from unpleasant stimulation (e.g., a nagging headache). In contrast, they felt least free in situations in which they recognized that there were limits on their behavior (e.g., when they had to curtail their desires to fit their abilities).

There are various limitations with soft determinism. First, there is excessive reliance on our subjective beliefs—the fact that some actions feel voluntary whereas others feel involuntary doesn't necessarily mean they are really different. Second, it can be argued that soft deterministsw want to have their cake and eat it—actions are free if they are voluntary, but those actions are still caused. This could be regarded as a confusing blend of free will and determinism.

Behaviorist and Freudian approaches

Determinism is espoused by more approaches in psychology than is free will. The behaviorists believed strongly in determinism. Skinner argued that virtually all of our behavior is determined by environmental factors. He claimed that we repeat behavior that is rewarded, and we don't repeat behavior that isn't rewarded. Other behaviorists argued that we can predict how someone will respond given knowledge of the current stimulus situation and that individual's previous conditioning history.

Skinner (1971) developed his ideas about hard determinism most fully in his book, *Beyond Freedom and Dignity*. He argued that common beliefs about free will and personal moral responsibility (which he called "dignity") were wrong and should be abandoned. According to Skinner, the way to change human behavior is by structuring the environment so that people are rewarded for behaving in desirable ways (i.e., operant conditioning) rather than by focusing on meaningless notions like freedom and dignity.

Bandura (1977, p. 27) pointed out a serious limitation with Skinner's approach: "If actions were determined solely by external rewards and punishments, people would behave like weather vanes, constantly shifting in radically different directions to conform to the whims of others." In fact, we often behave in line with long-term goals.

What is missing from Skinner's approach? Skinner focused excessively on the notion that the external environment determines behavior. However, our behavior also determines the external environment—if you don't like a television program you are watching, you switch to another channel or turn the television off. In addition, our personality helps to determine the environment in which we find ourselves and it also influences our behavior. Thus, there are multiple determinants of behavior, but Skinner largely ignored most of them.

Freud was a strong believer in hard determinism, claiming that none of our behavior "just happens" or is a result of free will. He even argued that trivial phenomena, such as missing an appointment or calling someone by the wrong name, had definite causes within the individual's motivational system. Of particular importance is what is known as the **Freudian slip**—a motivated but involuntary error in which someone says or does something revealing their true desires. Motley et al. (1983) obtained evidence of Freudian slips. Male participants had to say out loud pairs of words such as *tool–kits*, some of which could be turned into sexually explicit words. When the experimenter was an attractive female, participants tended to make Freudian slips—for example, saying *cool–tits* instead of *tool–kits*.

Key Term

Freudian slip: an error in speech or action that is motivated by unconscious desires.

Freud's emphasis on determinism and rejection of free will may well owe something to the fact that he focused on individuals suffering from mental disorders (especially anxiety disorders). Such individuals are presumably highly motivated to change their

behavior and eliminate the disorders but are often unable to do so—this seems somewhat difficult to explain if they possess free will.

Determinism vs. Free will

Determinism	**Free will**
Behaviorism	Humanistic approach
Freudian psychodynamics	

Do you think the cognitive psychologists fit into one or other of these lists? Can you explain your answer?

Testability

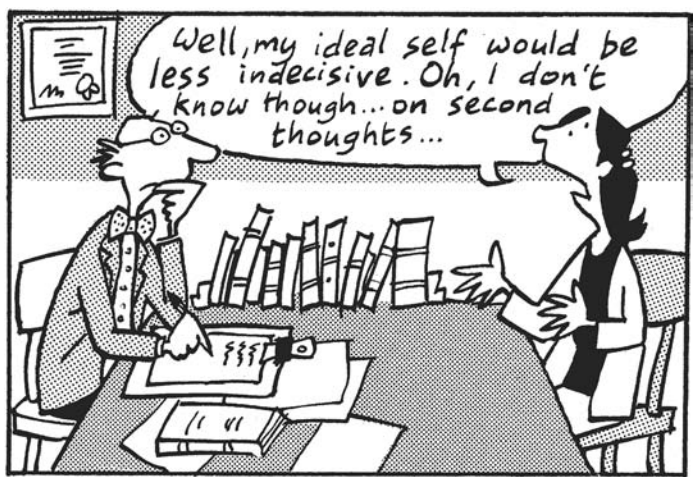
Determinism (whether soft or not) cannot really be submitted to a proper test. If it could be, then the issue of free will versus determinism would have been settled, and so would no longer exist as an issue! If all behavior is determined by internal and external forces, then in principle it should be possible to predict behavior accurately from a knowledge of these causal factors. In fact, we usually only have very limited knowledge of the internal and external forces influencing an individual's behavior. Thus, it remains only an article of faith that human behavior can eventually be predicted accurately.

Free will

Most people feel that they possess free will, in the sense that they can freely choose what to do from various options. Most people also have feelings of personal responsibility, because they feel in at least partial control of their behavior. Free will fits with society's view that people should accept responsibility for their actions and should expect to be punished (e.g., sent to prison) if they break the law.

Humanistic approach

Humanistic psychologists such as Carl Rogers and Abraham Maslow believed in free will. They argued that people exercise choice in their behavior, and they denied that people's behavior is at the mercy of outside forces. Rogers' client-centered therapy is based on the assumption that the client has free will. The therapist is called a "facilitator" precisely because his/her role is to make it easier for the client to exercise free will so as to maximize the rewardingness of the client's life. Humanistic psychologists argue that regarding human behavior as being determined by external forces is "de-humanizing" and incorrect.



Rogers claimed that we are motivated to minimize the discrepancy between our self-concept and our ideal self (the self-concept we would most like to possess). If we have free will and our behavior isn't determined by external forces, it might be expected that we would have little difficulty in doing this. The fact that there are millions of people with mental disorders who have a substantial discrepancy between the two suggests that free will either doesn't exist or is often very ineffective in producing highly desired changes.

Causality

Believers in free will have to confront various problems. First, it is hard to define precisely what is meant by free will. Second, determinism is based on the assumption that all behavior has one or more causes, and it could be argued that free will implies that behavior is random and has no cause. However, very few people would want to argue for such an extreme position. Anyone whose behavior seemed to be random would probably be classified as mentally ill or very stupid. If free will doesn't imply that behavior has no cause, then we need to know how free will helps to cause behavior. Third, most sciences are based on the assumption of determinism. It is possible that determinism applies to the natural world but doesn't apply to humans. If so, then there are enormous implications for psychology that have hardly been addressed.

Evaluation and summary

- It is not clear that it makes much sense to talk about "free will," because this assumes there is an agent (i.e., the will) that may or may not operate in an unrestrained way. As

the philosopher John Locke (1632–1704) pointed out, "We may as properly say that the singing faculty sings and the dancing faculty dances as that the will chooses."

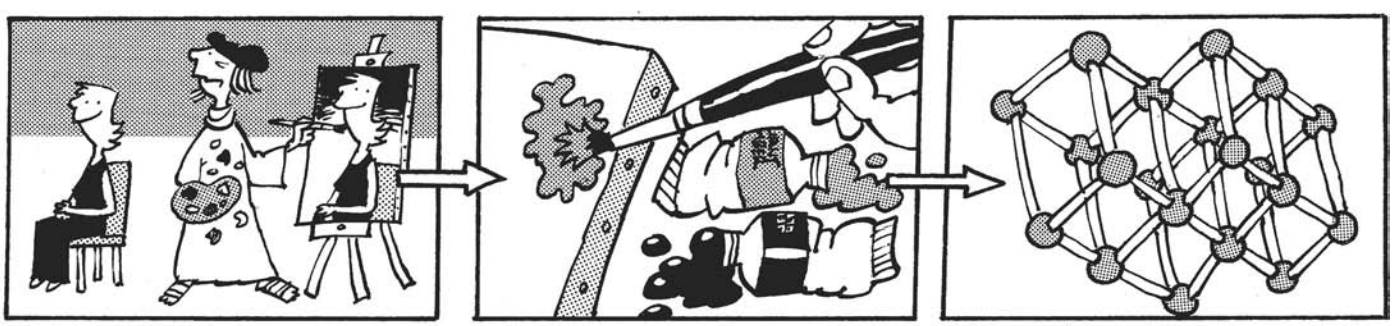
- The issue is philosophical rather than scientific, as it is impossible to design an experiment to decide whether or not free will influences human behavior. As William James (1890, p. 323) put it, "The fact is that the question of free will is insoluble on strictly psychological grounds." Thus, we can never know whether an individual's behavior in a given situation could have been different if he/she had so willed it.
- There is more common ground between advocates of determinism and free will than is generally realized. Most psychologists accept that heredity, past experience, and the present environment all influence our behavior. Although some of these factors (e.g., the environment) are external to the individual, others are internal. Most of these internal factors (such as character or personality) are the results of causal sequences stretching back into the past. The dispute then narrows to the issue of whether a solitary internal factor (variously called free will or self) is somehow immune from the influence of the past.
- There is little real incompatibility between determinism and free will at all. According to deterministists, it is possible in principle to show that an individual's actions are caused by a sequence of physical activities in the brain. If free will (e.g., conscious thinking and decision making) forms part of that sequence, it is possible to believe in free will and human responsibility at the same time as holding to a deterministic position. This would not be the case if free will is regarded as an intruder forcing its way into the sequence of physical activities in the brain. However, there are no good grounds for adopting this position. Thus, the entire controversy between determinism and free will may be somewhat artificial.

REDUCTIONISM

According to Reber (1993), **reductionism** "is the philosophical point of view that complex phenomena are best understood by a componential analysis which breaks the phenomena down into their fundamental, elementary aspects." Within the context of psychology, the term "reductionism" refers to several somewhat different theoretical approaches. First (and most importantly), there is the belief that the phenomena of psychology can potentially be explained within the framework of more basic sciences or disciplines (e.g., physiology; biochemistry) (physiological reductionism). Second, there is the assumption that complex forms of behavior can be explained with reference to relatively simple forms of behavior such as stimulus–response associations (experimental reductionism). Third, there is the notion that the complexities of human cognition can be compared to computer functioning (machine reductionism). Fourth, there is the assumption that human behavior can be understood with reference to other, less complex, species (animal reductionism). We will consider each of these types of reductionism in turn.

Key Term

Reductionism: the notion that psychology can ultimately be reduced to more basic sciences such as physiology or biochemistry.



Reductionism: the analysis of complex things into simple constituents.

PHYSIOLOGICAL REDUCTIONISM

According to physiological reductionism, we need to consider psychology in the light of other scientific disciplines. Scientific disciplines can be regarded as being organized in a hierarchical way, with the more general sciences at the top and the more specific and precise ones at the bottom. Some reductionists argue that sciences towards the top of the hierarchy will eventually be replaced by those towards the bottom. Here is an example of such a hierarchy:

- Sociology: The science of groups and societies.
- Psychology: The science designed to understand human and animal behavior.
- Physiology: The science of the functional working of the healthy body.
- Biochemistry: The science of the chemistry of the living organism.

Physiological and psychological explanations

Neurology and biochemistry underlie all behavior. What happens when a person sees a sunset? The physiological explanation would be that light reflected from the landscape forms an image on the retina, which is converted into a neural signal and transmitted to the brain, and so on. No one disputes that this is true, and the process is absolutely essential, but does it give a full and adequate explanation of what is going on? A psychological explanation would probably include the personal and social relevance of the experience, which many would argue are of equal value.

Of particular importance, all psychological processes are accompanied by physiological processes. Understanding those physiological processes (especially those associated with brain activity) might assist us in understanding human behavior. At the very least, psychological theories need to be consistent or compatible with relevant findings from physiology (and biochemistry).

There are various problems with physiological reductionism. First, much human behavior does not seem to lend itself to an explanation in terms of basic physiological processes. For example, if you wanted to predict how various people were going to vote in a forthcoming election, you wouldn't engage in a detailed physiological examination of their brains! Second, psychology typically describes the *processes* involved in performing some activity, whereas physiology focuses more on the *structures* involved (Valentine, 1992). Thus, psychologists are interested in *what* and *how* questions, whereas physiologists are interested in *where* questions. Third, there are no cases in which psychological phenomena have been fully understood on the basis of findings from disciplines such as physiology or biochemistry. What has happened is that findings from disciplines such as physiology have often added to our understanding. Examples include research on sexual motivation and hunger (see Chapter 3).

EXPERIMENTAL REDUCTIONISM

According to experimental reductionism, complex psychological phenomena can be reduced to simple constituent parts. The behaviorists were reductionists in this sense. They argued that many complex forms of behavior (e.g., use of language; problem solving) can be explained by assuming that they involve the use of numerous stimulus–response units and by assigning key importance to rewards or reinforcements. It is generally accepted that our behavior is influenced by rewards, but few now believe that that influence is as great as was believed by the behaviorists.

Experimental reductionism has often not fared well. It has been found consistently that simple explanations of behavior in virtually all areas of psychology have proved inadequate, and have had to be replaced by more complex ones. For example, Skinner (1957) tried to explain the complexities of language acquisition by arguing that children produce words and sentences that are rewarded or reinforced. As we will see in Chapter 10, the processes involved in language are so complex that Skinner's reductionist approach falls well short of providing a satisfactory explanation.

Experimental reductionism has proved most successful when it comes to designing experiments. As we saw in Chapter 1, use of the experimental method consists of designing well-controlled experiments. This typically involves ignoring much of the complexity of everyday life in order to expose participants to very limited situations under laboratory conditions. The advantages and disadvantages of experimental reductionism can be seen clearly if we consider two forms of validity. First, there is **internal validity**, which refers to the validity of an experiment within the context in which

Key Term

Internal validity: the validity of an experiment in terms of the context in which it is carried out, including the extent to which its findings can be replicated; also the extent to which research findings are genuine and can be regarded as being caused by the **independent variable**; see **external validity**.

it is carried out. Well-controlled experiments that produce findings that other researchers can replicate or repeat possess high internal validity. Second, there is **external validity**, which refers to the applicability of the findings from an experiment to other, everyday situations. In essence, well-controlled experiments based on experimental reductionism generally have high internal validity, but this is often achieved at the expense of external validity.

MACHINE REDUCTIONISM

Humans often try to understand the unknown in terms of the known. One way of doing that is by trying analogies or comparisons between what is known and what is not known. For example, numerous theorists have tried to understand the functioning of the brain or mind (especially its memory system) by comparing it to a wide variety of objects (this is machine reductionism). As Roediger (1980) noted, the brain has been conceptualized as a switchboard, a gramophone, a tape recorder, a library, a conveyor belt, and an underground or subway map. In recent decades, however, cognitive psychologists have most often drawn an analogy between the human brain and computers. This has two large and obvious advantages over previous analogies. First, computers are very flexible and versatile, and can be programmed in progressively more sophisticated ways to approximate more closely human information processing. Second, computers are capable of very complex functioning. For example, a chess program called Deep Blue managed to beat the then world chess champion Garry Kasparov in May 1997.

The ever more sophisticated and human-like cognitive capabilities of computers are exemplified by the computer program Deep Junior that in 2003 played a 6-game match against Garry Kasparov that resulted in a 3–3 tie with the ex-world chess champion.

Newell and Simon (1972) provided a successful example of machine reductionism with their approach to understanding problem solving (see Chapter 9). They started by asking people to think aloud while they solved various problems. Newell and Simon used the information so acquired to devise a computer program called General Problem Solver that solves problems in ways resembling those used by humans. However, there are some differences. General Problem Solver is better than humans at remembering past moves on a problem, but it is worse than humans at forward planning.

In spite of the successes of the computer analogy to human thinking, there are some serious limitations of this approach. First, computer programs often function in ways very different from those of people. The chess program Deep Blue plays chess outstandingly well. However, it does so by considering several million moves every second, which is radically different from the thought processes of human grandmasters.

Second, the claim that the functioning of some computer programs closely resembles that of neurons in the brain is hotly disputed (see Eysenck & Keane, 2005). More specifically, the brain contains huge numbers of interconnected neurons, and it is argued that the basic processing units within connectionist networks (a type of computer program) resemble biological neurons. However, the number of such processing units is typically a tiny fraction of the number of neurons in the human brain. In addition, each neuron in the human brain is connected to only about 3% of neurons in the surrounding square millimeter of cortex (Churchland & Sejnowski, 1991), which is substantially less than the massive interconnectivity often found within connectionist networks.

Third, human cognitive functioning involves an interplay between a cognitive system (the Pure Cognitive System) and a biological system (the Regulatory System)

Cognitive science

The precision of detail needed to mimic human thought processes using computers is demonstrated by a story that may or may not be an account of a real experiment. A group of cognitive scientists wanted to see if a computer-controlled robot could be programmed to mimic a human being building a pile of wooden bricks. However, the first few attempts failed because someone forgot to include the effects of gravity in the computer program, and the robot tried to begin the pile at the top! No human being would make such a mistake; we all understand about gravity from a very early age, but remembering to include every single item of such knowledge in a computer program is a huge task.

Key Term

External validity: the validity of an experiment outside the research situation itself; the extent to which its findings are applicable to everyday life and generalize across populations, locations, measures, and times; see **internal validity**.

(Norman, 1980). Much of the activity of the Pure Cognitive System is determined by the various needs of the Regulatory System, including the need for survival, for food and water, and for protection of oneself and one's family. Computer programs focus on the Pure Cognitive System and virtually ignore the key role played by the Regulatory System.

Fourth, it is difficult to imagine computers having consciousness or experiencing emotion, and I am not aware of any computer programs showing either of these characteristics. This pessimistic conclusion has been challenged by some experts. Sloman (1997) argued that it should be possible to design a machine that could fall in love. According to him, what we would need to do is the following: "Read what poets and novelists and playwrights say about love, and ask yourself: what kinds of information processing mechanisms are presupposed." For example, if X is in love with Y, we would expect X to find it hard to think of anything except Y. Personally, I will be amazed if anyone ever succeeds in devising a machine that can fall in love.

CONCLUSIONS

There are many forms of reductionism, including physiological reductionism, experimental reductionism, and machine reductionism. All of these forms of reductionism have proved useful, but they all suffer from important limitations. Physiological findings can enhance our understanding of psychological phenomena, but cannot replace the need for psychological explanations. Experimental reductionism permits the designing and carrying out of well-controlled experiments, but often fails to ensure that the findings obtained generalize to everyday life. Machine reductionism based on the computer analogy has provided useful insights into human thinking, but it is limited in part because motivational and emotional factors are generally ignored.

Chapter Summary

Psychodynamic approach

- Psychoanalysis consists of various theories about human emotional development but is also a form of therapy.
- According to Freud, the mind is divided into three parts (id, ego, and superego) that are often in conflict with each other.
- Psychoanalysis as a form of therapy is designed to allow patients to achieve insight into the true nature of their problems. Many of these problems stem from traumatic events in childhood.
- Many of Freud's general ideas are still generally accepted. However, most of his more specific ideas are either untestable or have been disproved.

Behaviorism

- The behaviorists claimed that most behavior could be explained in terms of environmental rather than genetic factors.
- According to Skinner, learning and behavior are under the control of reward or reinforcement.
- The behaviorists had a lasting influence on psychology through their emphasis on careful observation of behavior in controlled settings and the development of behavior therapy.
- The behaviorists greatly underestimated the impact of internal factors (e.g., past knowledge; goals; heredity) on behavior.

Humanistic approach

- Humanistic psychologists favored the use of phenomenology (reporting of pure experience) and were skeptical of the scientific approach.
- Maslow argued that the need for self-actualization (fulfilling one's entire potential) is of central importance to many people.

- Rogers developed client-centered therapy, which required the therapist to display unconditional positive regard, genuineness, and empathy.
- Humanistic psychologists focused on issues of major concern to people, and client-centered therapy is moderately effective in treating less severe disorders.
- Client-centered therapy is ineffective in treating severe disorders, and the unscientific nature of humanistic psychology has seen its influence wane considerably.

Cognitive approach

- Cognitive psychologists carry out well-controlled laboratory experiments to understand processes such as attention, perception, learning, language, and problem solving.
- Two major determinants of cognitive psychology are cognitive neuropsychology (studying cognition in brain-damaged patients) and cognitive neuroscience (using brain imaging to identify the brain areas associated with specific cognitive processes).
- Cognitive psychology (in conjunction with cognitive neuropsychology and cognitive neuroscience) has proved very effective at enhancing our understanding of human cognition. It led to the development of cognitive therapy, which is an effective form of treatment for anxiety disorders and depression.
- The behavioral and brain-imaging data collected by cognitive researchers provide only indirect measures of underlying cognitive processes. The use of laboratory experiments raises issues concerning ecological validity.

Evolutionary psychology

- According to evolutionary psychologists, natural selection favors individuals who maximize replication of their genes. This is achieved in part by helping those with whom we share our genes.
- Evolutionary psychologists also assume that the greater parental investment of females than of males has led to various gender differences (e.g., in sexual attitudes and behavior).
- As predicted by the theory, most people are more willing to help close relatives than other people. Predicted differences in sexual attitudes and behavior between males and females have also been reported (see Chapter 3).
- It is difficult to test most of the hypotheses of evolutionary psychologists, and they underestimate the importance of social and cultural factors.

Ethical issues in psychology

- Milgram's research on obedience to authority and Zimbardo's Stanford prison experiment are now regarded as unethical, in part because of the stress and discomfort experienced by the participants.
- Full informed consent, avoidance of deception, and the participant's right to withdraw at any point are all very important features of ethical research.
- Ethical issues are posed by socially sensitive research that can have damaging consequences for people not directly involved in the experiment.
- What is ethically acceptable depends in part on the likely scientific value of the proposed research.

Biases in psychology

- Gender bias can involve exaggerating gender differences (alpha bias) or minimizing them (beta bias). Alpha bias is found in the work of Freud and evolutionary psychologists.
- There is also methodological gender bias—the design of an experiment can bias the nature of the gender differences likely to be found.
- Much cultural bias occurs because researchers mistakenly believe that emic constructs (culture-specific) are actually etic ones (universal).
- Cross-cultural research on intelligence and personality has often involved the use of imposed etics (use of culture-specific tests).

- The claim that black people are genetically less intelligent than white ones is an example of racial bias. The issue is of little or no scientific interest, and raises serious ethical issues.
- Rushton claims that mongoloids are more evolutionarily developed than caucasoids, who in turn are more developed than negroids. This claim is unsupported by evidence and is racist.

Free will vs. determinism

- Determinists (e.g., Freud; Skinner) argue that behavior is totally controlled by external and internal factors, whereas advocates of free will claim that behavior is also controlled by free will.
- Soft determinists claim that there is a valid distinction between behavior highly constrained by the situation and behavior only modestly constrained by the situation.
- Determinism seems more consistent than free will with the scientific approach, but it cannot be submitted to a proper test.
- It is difficult to define "free will" precisely. If free will means that we can freely choose our own behavior, it is hard to see why millions of people (e.g., those with mental disorders) feel unable to control their behavior.
- If free will forms part of the sequence of physical activities in the brain causing an individual's actions, then it would be possible to believe in free will and in determinism at the same time.

Reductionism

- According to physiological reductionism, more general sciences such as sociology and psychology will eventually be replaced by more specific sciences such as physiology and biochemistry.
- Physiological findings have often enhanced our understanding of psychological phenomena, but that does not eliminate the need for psychological explanations.
- According to experimental reductionism, complex psychological phenomena can be reduced to simple constituent parts by producing simple explanations or by carrying out simple experiments.
- Simple explanations of complex phenomena (e.g., by the behaviorists) are generally oversimplified. Simple, well-controlled experiments often have good internal validity but poor external validity.
- According to machine reductionism, human functioning can be understood with reference to machines (especially computers).
- Computers can function in flexible, complex ways. However, their functioning is often very different to that of humans, they lack consciousness, and they are generally uninfluenced by motivational and emotional factors.

Further Reading

- Glassman, W.E. (1995). *Approaches to psychology* (2nd ed.). Buckingham, UK: Open University Press. This book provides a good overview of historically important theoretical approaches in psychology.
- Jarvis, M. (2000). *Theoretical approaches in psychology*. London: Routledge. This is a very readable introduction to theoretical approaches that have been influential in the history of psychology.
- Valentine, E.R. (1992). *Conceptual issues in psychology* (2nd ed.). London: Routledge. Liz Valentine provides a balanced approach to some of the key conceptual and philosophical issues within psychology.

Subject index

Page numbers in **bold** indicate glossary definitions.