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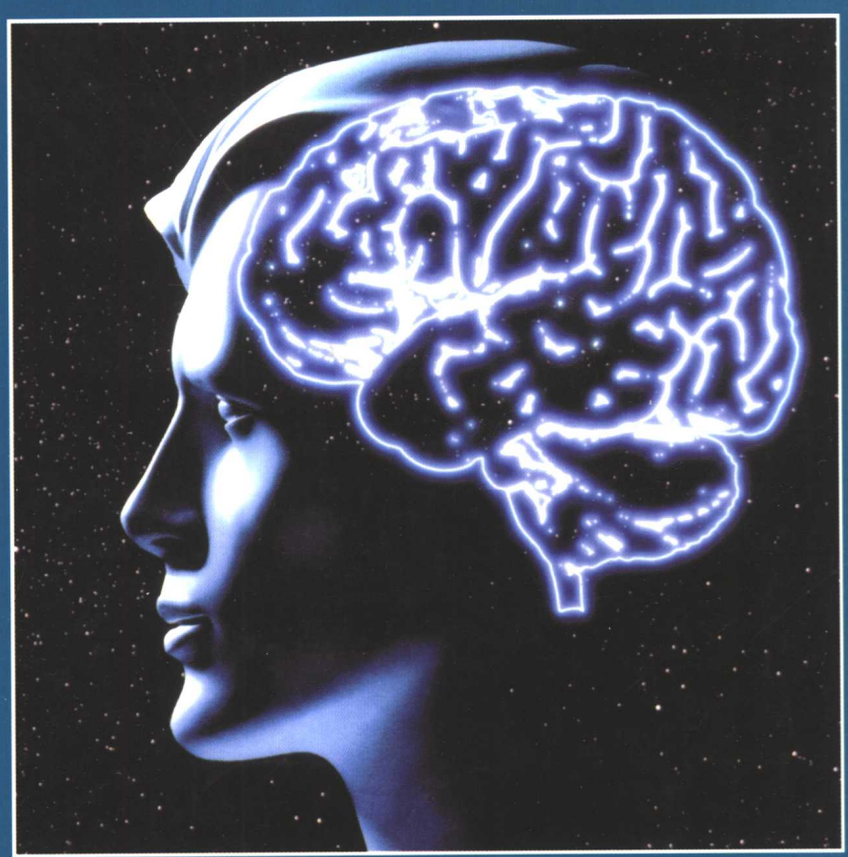
专业英语基础丛书

Advanced PSYCHOLOGY through diagrams

心理学专业英语基础（图示教程）



Grahame Hill

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耿文秀　注释

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through diagrams

Grahame Hill

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出 版 前 言

1999年出版的《大学英语教学大纲(修订本)》明确提出，“学生在完成基础阶段的学习任务，达到四级或六级后，都必须修读专业英语”。这是大纲修订组在对用人单位进行了广泛调查的基础上，结合英语学习的规律，对大学英语教学提出的新要求。因此，目前国内急需一套内容全面、语言地道的专业英语教材和读物。

《牛津专业英语基础丛书》原版由牛津大学提供，包括物理学、化学、生物学、人体生物学、商务、地理学、心理学、经济学等8种。该丛书原为英国A-level(相当于大学预科)考试的复习用书。书中以图表的形式，归纳整理了学科的主要知识。其中不仅包括常用的专业词汇和句型，还有连贯的短文，十分适合作为大学生专业英语的自学教材。

为了方便读者使用，本社约请了复旦大学、华东理工大学、华东师范大学、上海理工大学、上海财经大学等高校有关专业既有专业特长，又精通英语的教授对该丛书作了详细的注释，并给难读的单词加注了音标。

本丛书既能帮助大学生复习巩固专业知识，又能提高专业英语水平，还可以作为有关专业的人员提高专业阅读和翻译能力的教材或读物。

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Perspectives in Psychology

Approaches to psychology

Controversies in psychology

Ethical issues in psychology

What is psychology?

DEFINITIONS

The word 'Psychology' is derived from two Greek roots: 'Psyche', meaning 'mind' or 'soul' and 'Logos', meaning 'study of'. Psychology, therefore, literally means 'study of the mind'. However, a more recent definition by Atkinson et al (1991) suggests that psychology is:

'The scientific study of behaviour and mental processes'

Just giving this simple definition, however, is a bit misleading, since psychologists now and throughout their history have not only disagreed about the definition of psychology, but have also strongly disagreed about *what* should be studied in the subject and *how* it should be studied.

THE HISTORY OF PSYCHOLOGY

WHERE DID PSYCHOLOGY COME FROM?

Psychology developed from three main areas of study:

PHILOSOPHY

- Many of the problems which psychology has investigated were first most clearly outlined by Greek philosophers such as Socrates, Plato, and Aristotle in the 5th century BC. Two more recent philosophical influences on the development of psychology as a science were:

1 **Empiricism** - which argued that humans should only measure data that is *objectively observable*, such as behaviour.
2 **Positivism** - which argued that the *methods* and principles of *science* should be applied to human behaviour.

BIOLOGY

Biology has had two important influences:

1 Evolution - Darwin's suggestion that humans have *evolved* from other animals. The discoveries in *genetics* that followed from his evolutionary theory have had many important implications for the study and understanding of behaviour.
2 Physiology - the discoveries, mostly by the medical profession, of the structure and function of the brain, nervous, and endocrine systems have significantly contributed to the understanding of behaviour.

PHYSICS

- A subject that because of its great success has been adopted as the ideal model by scientists in psychology, who have borrowed its *scientific methods* and *principles*.
- Physicists, such as Fechner, started applying their subject to human behaviour and experience (psychophysics) in the nineteenth century, with some success.

WHEN DID PSYCHOLOGY START?

The date **1879** is usually said to be the start of psychology as a **separate scientific discipline**, since it was when Wilhelm Wundt created the first psychology laboratory in Leipzig. Wundt is, therefore, regarded as the 'founding father' of psychology, although Americans tend to suggest that William James should have this honour since his 1890 book (which took 12 years to write) entitled *Principles of Psychology* was a major landmark in psychology's literature and he began teaching a course on the relationship between physiology and psychology at Harvard University in 1875.

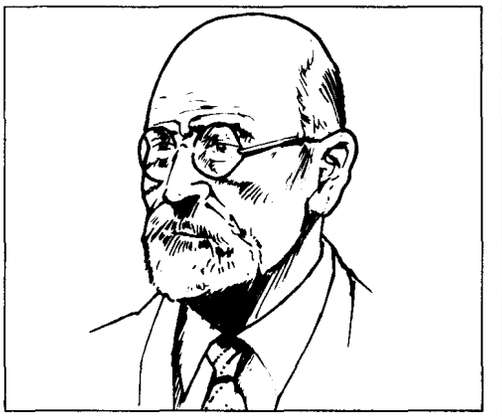
HOW DID PSYCHOLOGY DEVELOP?

- **Structuralism** - was the first approach to investigating psychology, pioneered by Wundt himself, who thought that the object of psychological investigation should be the *conscious mind*, and that it should be studied by *introspection* (looking inwards at one's own mental experience) in order to *break it down* into its component parts (such as images, sensations and feelings) like the science of chemistry had done with chemicals. One structuralist, Titchener, claimed there were a total of 46,708 basic sensations that combined to form the structure of the human mind, but the approach was very limited in its ability to explain and was replaced by functionalism.
- **Functionalism** - the approach William James advocated. James was influenced by Darwin's views and argued that the workings of the mind are functional, to survive and adapt, so we should investigate *what behaviour and thoughts are for*. Many of James's insights remain valid today, but functionalism was superseded by the next two very powerful approaches that both started around the turn of the century.
- **Psychoanalysis** - was in fact a method of *therapy* developed by Sigmund Freud in Austria, but in many major books, such as *The interpretation of dreams* (1900), Freud began describing in detail an underlying theory of the human mind and behaviour that has had an enormous (and controversial) impact on psychology. Freud argued that the proper object of psychological investigation should be the *unconscious mind*, and that our behaviour is determined by processes of which we are not aware.
- **Behaviourism** - Behaviourists, such as John Watson, were extremely critical of all the approaches that concerned themselves with 'minds', and proposed that psychology should only investigate *observable behaviour* if it wanted to be an objective science. This approach dominated experimental psychology until the 1950s, when a strong resurgence of interest in the 'mind' developed in the form of the cognitive and the humanistic approaches, which suggested that behaviourism ignored all the most important and interesting things that go on in our heads.
- **Cognitive psychology** - aims to investigate the mind by using *computer information processing* ideas to arrive at testable *models* of how the brain works, and then applying *scientific methods* to confirm these models. The cognitive approach has enjoyed much success and is a very dominant one in psychology today.
- The **Humanistic approach**, however, has had less of an impact on psychology, since it has deliberately adopted a *less scientific* view of the human mind by arguing that psychology should focus on each *individual's conscious experience* and *aims* in life.
- The **Biological approach** has advanced *evolutionary, physiological,* and *genetic* explanations for human behaviour throughout the history of psychology.

The psychoanalytic approach to psychology

ORIGINS AND HISTORY

- The psychoanalytic approach was started and developed mainly by **Sigmund Freud,** a Viennese doctor who specialised in neurology. Freud became interested in hysteria - the manifestation of physical symptoms without physical causes - and became convinced that **unconscious mental causes** were responsible not just for this disorder but for all disorders and even 'normal' personality. Freud developed techniques for **treating** the unconscious causes of mental disorders and built up an underlying explanatory **theory** of how human personality and abnormality develop from childhood.
- Freud's theory and approach were influenced by the technology of the time (such as the steam engine), and his early work with Charcot, the Parisian hypnotist, and Breuer the pioneer of the cathartic method. Freud's psychoanalytic approach had a great impact on psychology and psychiatry, and was developed in different ways by other psychoanalysts such as Jung, Adler, Klein, Anna Freud (his daughter), and Erickson.



Sigmund Freud (1856-1939)
'...I set myself the task of bringing to light what human beings keep hidden within them... the task of making conscious the most hidden recesses of the mind is one which it is quite possible to accomplish.'

ASSUMPTIONS

Psychoanalysis proposes:

- **Unconscious processes** - the major causes of behaviour come from that part of the mind which we have no direct awareness of.
- **Psychic determinism** - all we say and do has a cause (usually unconscious), even slips of the tongue or 'Freudian slip'.
- **Hydraulic drives** - behaviour is motivated by the two basic instinctual drives, the sex drive from Eros the life instinct, and the aggression drive from Thanatos the death instinct. The drives create psychic energy which will build up (like steam in a steam engine) and create tension and anxiety if it cannot be released in some form.
- **Psychodynamic conflict** - different parts of the unconscious mind are in constant struggle as the rational ego and moralistic superego seek to control the id expressing its sexual and aggressive urges.
- **Stages of development** - personality is shaped as the drives are modified by different conflicts at different times in childhood.

METHODS OF INVESTIGATION

Freud used the **case study** method when treating his clients (seeing them individually several times a week for many months), and **deeply** analysed and **interpreted** all they said and did. Two techniques Freud used for investigating the unconscious were:

- **Free association** - involving the uninhibited expression of thought associations, no matter how bizarre or embarrassing, from the client to the analyst.
- **Dream analysis** - the 'royal road to the unconscious'. The analyst attempts to decode the symbols and unravel the hidden meaning (the latent content) of a dream from the dreamer's report (the manifest content).

AREAS OF EXPLANATION

Freud used his theory to explain a vast number of topics, such as:

- **Personality development** - due to fixation/defence mechanisms.
- **Moral/gender development** - the result of the Oedipus complex.
- **Aggression** - caused by hydraulic drives and displacement.
- **Abnormality** - the consequence of early trauma and repression.
- **Memory** - Forgetting caused by repression.

+ Slips of the tongue, the shaping of civilisation and customs, etc.

PRACTICAL APPLICATIONS

The purpose of psychoanalysis was as a therapy to treat mental disorder. Once the unconscious cause of disorder was identified through dream interpretation, etc., then a cure could be effected through catharsis - discharging the repressed emotions associated with problems by getting them 'out in the open' to be discussed/resolved.

STRENGTHS

- Freud's ideas made a large impact on psychology and psychiatry and are still discussed and used today, around a 100 years after he started developing them.
- Freud regarded case studies like 'Little Hans' and 'Anna O' as firm empirical support for his theory, and thought his belief in determinism and detailed collection of data were scientific.
- Freud's theory has had some experimental support in certain areas, such as repression and fixation.
- Psychoanalysis has enormous explanatory power and has something to say on a huge variety of topics.

WEAKNESSES

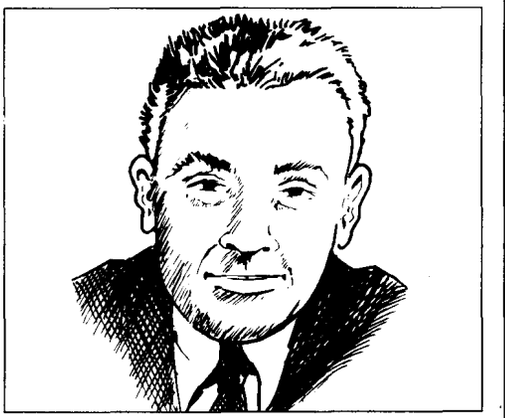
Many psychologists today reject psychoanalysis because:

- It has been accused of being **unrefutable** (incapable of being proved wrong) and so **theoretically unscientific** - it seems to explain everything but predicts very little.
- Freud's methods have been regarded as unscientific because he based his theory on studying an 'abnormal' sample of people, using the case study method and techniques that were not fully objective and, therefore, open to bias.
- Much experimental research carried out on Freudian hypotheses has failed to support his theory and ideas.
- The success of psychoanalytic therapy has been criticised.

The behaviourist approach to psychology

ORIGINS AND HISTORY

- The behaviourist approach was influenced by the philosophy of **empiricism** (which argues that knowledge comes from the environment via the senses, since humans are like a 'tabula rasa', or blank slate, at birth) and the physical sciences (which emphasise scientific and objective methods of investigation).
- **Watson** started the behaviourist movement in 1913 when he wrote an article entitled 'Psychology as the behaviourist views it', which set out its main principles and assumptions. Drawing on earlier work by Pavlov, behaviourists such as Watson, Thorndike and Skinner proceeded to develop theories of **learning** (such as classical and operant conditioning) that they attempted to use to explain virtually **all** behaviour.
- The behaviourist approach dominated experimental psychology until the late 1950s, when its assumptions and methods became increasingly criticised by ethologists and cognitive psychologists. The behaviourist theories have been modified to provide more realistic explanations of how learning can occur, for example by psychologists such as Bandura with his social learning theory.



John Watson

'Give me a dozen healthy infants... and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select - doctor, lawyer... and yes, even beggarman and thief.'

ASSUMPTIONS

The behaviourists believed:

- the majority of all behaviour is **learned** from the **environment** after birth (behaviourism takes the nurture side of the nature-nurture debate), and so
  a psychology should investigate the **laws** and **products** of learning
  b behaviour is **determined** by the environment, since we are merely the total of all our past learning experiences, freewill is an illusion.
- only **observable** behaviour not minds should be studied if psychology is to be an objective science, since we cannot see into other people's minds, and if we ask them about their thoughts they may lie, not know, or just be mistaken.

METHODS OF INVESTIGATION

The behaviourists adopted a very nomothetic approach, using strict laboratory experimentation, usually conducted on animals such as rats or pigeons. Animals were tested because the behaviourists believed:

- the laws of learning were universal
- there was only a quantitative difference between animals and humans
- animals are practically and ethically more convenient to test

AREAS OF EXPLANATION

The behaviourists' discoveries concerning the laws of learning were vigorously applied to explain many aspects of behaviour, such as:

- **Language acquisition,** e.g. Skinner's theory.
- **Moral development,** e.g. conditioned emotional responses of guilt and conscience.
- **Attraction,** e.g. Byrne & Clore's reinforcement affect model.
- **Abnormality,** e.g. the classical conditioning of phobias and their treatment.

+ aggression, prejudice, gender role identity, etc.

PRACTICAL APPLICATIONS

- The behaviourist learning theory approach has produced may practical applications for education (such as programmed learning) and the treatment of those suffering behavioural disturbances (such as systematic desensitisation for phobias, behaviour shaping for autism, and token economies for institutionalised patients).
- Operant conditioning principles have been used in training animals to perform tasks, from circus animals to guide dogs.
- Watson applied behaviourist theory to both child rearing and advertising, while Skinner offered many suggestions regarding the large scale manipulation of behaviour in society in his books such as *Beyond Freedom and Dignity* and *Walden Two*.

STRENGTHS

Behaviourism contributed to psychology in many ways:

- Behaviourism was very scientific and its experimental methodology left a lasting impression on the subject.
- It provided strong counter-arguments to the nature side of the nature-nurture debate.
- The approach is very parsimonious, explaining a great variety of phenomena using only a few simple (classical and operant) principles.
- Behaviourism has produced many practical applications, some of which have been very effective.

WEAKNESSES

Behaviourist views have been criticised by other approaches for a number of reasons.

- Ethologists argued that the behaviourists ignored innate, built-in biases in learning due to evolution, but also disagreed with the behaviourists' use of animals and laboratory experimentation, saying that there is a biologically qualitative difference between humans and other animals and that experiments only demonstrate artificial, not natural learning.
- Cognitive psychologists think that behaviourism ignores important mental processes involved in learning; while the humanistic approach disliked their rejection of conscious mental experience.

The humanistic approach to psychology

ORIGINS AND HISTORY

- The humanistic movement developed in America in the early 1960s, and was termed the third force in psychology since it aimed to replace the two main approaches in the subject at that time, behaviourism and psychoanalysis. Influenced by gestalt psychology's idea of studying **whole units,** and existential philosophy with its belief in **conscious free will,** humanists argued that behaviourism's artificial and dehumanising approach and psychoanalysis's gloomy determinism were insufficient to provide a complete psychology.
- The humanistic approach aimed to investigate all the uniquely **human** aspects of **experience** such as love, hope, creativity, etc. and emphasised the importance of the individual's interaction with the environment. Humanists, such as **Maslow,** believed that every individual has the need to **self-actualise** or reach their potential, and **Rogers** developed client-centred therapy to help individuals in this process of self-actualisation.

Carl Rogers
'Humanistic psychology has as its ultimate goal the preparation of a complete description of what it means to be alive as a human being.' Bugental (1967)

ASSUMPTIONS

Bugental (1967), the first president of the American Association for Humanistic Psychology, described some of its fundamental assumptions:

- A proper understanding of human nature can only be gained from **studying humans,** not other animals.
- Psychology should research areas that are **meaningful** and important to human existence, not neglect them because they are too difficult. Psychology should be **applied** to enrich human life.
- Psychology should study **internal experience** as well as external behaviour and consider that individuals can show some degree of **free will.**
- Psychology should study the **individual** case (an idiographic method) rather than the average performance of groups (a nomothetic approach).
- In general, humanistic psychologists assume that the **whole person** should be studied in their environmental **context.**

METHODS OF INVESTIGATION

Humanists take a phenomenological approach, investigating the individual's conscious experience of the world. For this reason they employ the idiographic case study method, and use a variety of individualistic techniques such as

- flexible open ended interviews.
- the Q-sort technique, where the participant is given one hundred different statements on cards, such as 'I don't trust my emotions' or 'I have an attractive personality' which they have to sort into piles for personal relevance

AREAS OF EXPLANATION

The humanistic approach has been applied to relatively few areas of psychology compared to other approaches. The main areas of explanation have been in

- **personality/self identity,** e.g. Rogers's self theory
- **motivation,** e.g. Maslow's hierarchy of needs and self-actualisation
- **abnormality,** e.g. due to imposed conditions of worth by others or the inability to accept the true self. Humanists are against the nomothetic classification of abnormality

PRACTICAL APPLICATIONS

The humanistic approach's primary application has been to therapeutic treatment for anybody suffering 'problems with living'. Some humanistic therapies include

- client-centred therapy - whereby the client is encouraged to develop positive self-regard and overcome mismatch between their perceived self, true self, and ideal self
- gestalt therapy - developed by Fritz Perls, the aim is to help the client become a 'whole' (gestalt) person by getting them to accept every aspect of themselves

STRENGTHS

The humanistic approach has contributed to psychology by

- re-emphasising the need to study consciousness and human experience for a complete study of the subject
- serving as a valuable agent of criticism against the extremes of the earlier major approaches
- highlighting the value of more individualistic and idiographic methods of study, particularly in the areas of personality and abnormality
- emphasising the importance of self-actualisation, responsibility, freedom of choice, and social context in therapy

WEAKNESSES

Humanistic psychology has not, however, had the significant impact on mainstream academic psychology that the other approaches have. This is probably because humanists deliberately take a less scientific approach to studying humans since

- their belief in free will is in opposition to the deterministic laws of science
- they adopt a more idiographic approach, seeking the more unique aspects of individuals, rather than producing generalised laws of behaviour that apply to everyone
- the issues they investigate, such as consciousness and emotion, are amongst the most difficult to objectively study

The cognitive approach to psychology

ORIGINS AND HISTORY

- The cognitive approach began to revolutionise psychology in the late 1950s and early 1960s, to become the dominant paradigm in the subject by the 1970s. Interest in mental processes had been gradually resurrected through the work of people like Tolman and Piaget, but it was the arrival of the **computer** that gave cognitive psychology the terminology and metaphor it needed to investigate human minds.
- Cognitive psychology compares the human mind to a computer, suggesting that we too are **information processors** and that it is possible and desirable to study the **internal mental processes** that lie between the stimuli we receive and the responses we make. Cognition means 'knowing' and cognitive processes refer to the ways in which knowledge is gained, used and retained. Therefore, cognitive psychologists have studied perception, attention, memory, thinking, language, and problem solving.
- Cognitive psychology has influenced and integrated with many other approaches and areas of study to produce, for example, social learning theory, cognitive neuropsychology, and artificial intelligence.

Jerome Bruner

'...cognition refers to all those processes by which sensory input is transformed, reduced, elaborated, stored, recovered and used... cognition is involved in everything a human being might possibly do.'
Neisser (1966)

ASSUMPTIONS

Cognitive psychologists assume that

- mental processes **can** and **should** be investigated scientifically
- **models** of psychological functions can be proposed
- **research** on these models can be carried out to confirm, refute or modify them by testing observable behaviour and conscious report
- cognitive processes **actively** organise and manipulate information that we receive - humans are not merely passive responders to their environment

METHODS OF INVESTIGATION

Cognitive psychologists mostly employ a nomothetic approach to discover human cognitive processes, but have also adopted idiographic techniques at times:

- Laboratory experimentation - for example, many subjects have been exposed to memory tests under strictly controlled conditions.
- Case study - Piaget studied the cognitive development of his children using the clinical interview method.

AREAS OF EXPLANATION

Cognitive psychologists have sought to explain:

- **memory,** e.g. Atkinson and Shiffrin's multi-store model of the input, storage and loss of information, etc.
- **perception,** e.g. Gregory's theory on the role of mental processes in influencing/organising visual stimuli
- **attention,** e.g. Broadbent's filter model
- **artificial intelligence,** e.g. Rumelhart and McClelland's parallel distributed network models
- **social cognition,** e.g. the effects of stereotypes on interpersonal perception
- **cognitive development,** e.g. Piaget's stage theory of cognitive development

PRACTICAL APPLICATIONS

Cognitive psychology has had a broad range of applications, for example to

- **memory** - to help improve memory through mnemonic devices or to aid the police in eyewitness testimony
- **education** - Piaget' theory has been applied to improve educational techniques
- **therapy** - such as the use of Ellis's rational emotive therapy to restructure faulty thinking and perceptions in depression, for example. When combined to form cognitive-behavioural techniques, effectiveness is improved
- **personality assessment** - e.g. Kelley's personal construct measurement

STRENGTHS

Cognitive psychology is probably the most dominant approach today:

- It investigates many areas of interest in psychology that had been neglected by behaviourism; yet, unlike psychoanalysis and humanism, it investigates them using more rigorous scientific methods.
- In contrast to the biological approach, it bases its explanations firmly at a functional, psychological level, rather than resorting to reductionism to explain human behaviour.
- The approach has provided explanations of many aspects of human behaviour and has had useful practical applications.
- The cognitive approach has combined with other approaches to strengthen its explanations and usefulness, e.g. cognitive neuropsychology.

WEAKNESSES

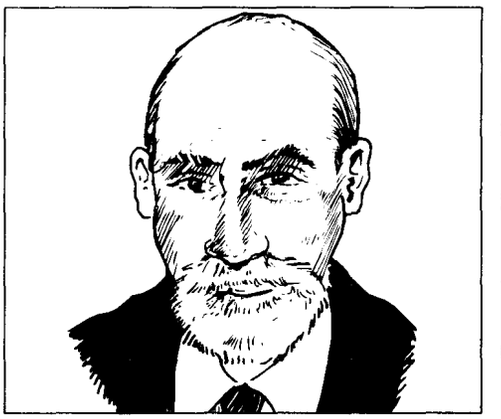
Cognitive models have been accused of being

- over simplistic - ignoring the huge complexity of human functioning compared to computer functioning
- unrealistic and over hypothetical - ignoring the biological influences and grounding of mental processes
- too cold - ignoring the emotional life of humans, their conscious experience and possible use of freewill

The biological approach to psychology

ORIGINS AND HISTORY

- Sometimes known as the physiological, biopsychological, neurophysiological, nativist (considering nature rather than nurture) or innate approach.
- The biological approach to psychological matters has integrated with and run parallel to the rest of psychological thought since early Greek times - the Greek physician Galen suggested that personality and temperament may be linked to the levels of body fluids such as blood and bile in the body.
- As knowledge of human anatomy, physiology, biochemistry, and medicine developed, important insights for human behaviour and experience were gained. Penfield for example mapped the role of various areas of the cerebral cortex through microelectrode stimulation with conscious patients. Sperry investigated the effects of splitting the cerebral hemispheres on consciousness and psychological function.
- The field will progress still further as the technology to isolate the effects of genes and scan the living brain develops.



Roger Sperry
'All that is psychological is first physiological' Anon.

ASSUMPTIONS

Biologically orientated psychologists assume that

- all that is psychological is first physiological - that is since the mind appears to reside in the brain, all thoughts, feelings and behaviours ultimately have a physical/biological cause
- human genes have evolved over millions of years to adapt behaviour to the environment. Therefore, much behaviour will have a genetic basis
- psychology should, therefore, investigate the brain, nervous system, endocrine system, neurochemistry, and genes
- it is also useful to study why human behaviour has evolved in the way it has, the subject of evolutionary/sociobiological theory

METHODS OF INVESTIGATION

The biological approach mainly adopts a nomothetic approach to generalise biological influences on behaviour to all humans with similar physiology, but finds the use of particular 'special case studies' very useful.

Most common techniques include

- laboratory experimentation - stimulating, giving drugs to, or removing parts of the body to see what effect it has on behaviour
- laboratory observations - controlled observations of physical processes, e.g. sleep

AREAS OF EXPLANATION

Biopsychological researchers have contributed to an understanding of

- **gender development** - e.g. the influence of genetic and hormonal predispositions on gender behaviour and identity
- **aggression** - e.g. investigating the role of the limbic system
- **abnormality** - e.g. the dopamine hypothesis and enlarged ventricle theory of schizophrenia
- **memory** - e.g. brain scans of areas involved during memory tests or the effect of brain damage on memory
- **motivation** - e.g. the role of the hypothalamus in homeostasis
- **awareness** - e.g. biological theories of sleep, dreams and body rhythms

PRACTICAL APPLICATIONS

Biopsychology's main applications have been to

- **localisation of function** - e.g. the effect on behaviour of brain damage to certain areas such as language control centres on the left side of the brain
- **therapy** - such drug treatment, psychosurgery, or electroconvulsive therapy for mental disorders such as schizophrenia or depression

STRENGTHS

Biopsychology has contributed to psychology in many ways:

- The approach is very scientific, grounded in the hard science of biology with its objective, materialistic subject matter and experimental methodology.
- It provides strong counter-arguments to the nurture side of the nature-nurture debate.
- Biopsychology's practical applications are usually extremely effective, e.g. the treatment of mental disorder.

WEAKNESSES

- Reductionism - the biopsychological approach explains thoughts and behaviour in terms of the action of neurones or biochemicals. This may ignore other more suitable levels of explanation and the interaction of causal factors.
- The approach has not adequately explained how mind and body interact - consciousness and emotion are difficult to study objectively.
- Over simplistic - biopsychological theories often over-simplify the huge complexity of physical systems and their interaction with environmental factors.

The reductionism debate in psychology

REDUCTIONISM

HOLISM & INTERACTIONISM

ASSUMPTIONS

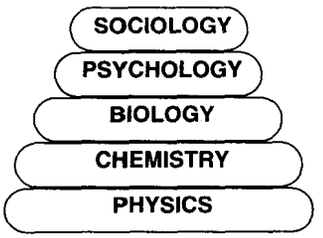
Reductionism involves explaining a phenomenon by **breaking** it **down** into its **constituent parts** - **analysing it.** Reductionism works on the scientific assumption of **parsimony** - that complex phenomena should be explained by the **simplest underlying principles** possible.

Holism looks at same/higher level explanations. Interactionism shows how **many aspects** of a phenomenon or **levels** of explanation can **interact together** to provide a **complete** picture. Both approaches involve taking a gestalt approach, assuming that ***'the whole is greater than the sum of its parts'.***

EXAMPLES IN PSYCHOLOGY

There have been many reductionist attempts to explain behaviour in psychology, for example:

- Structuralism - one of the first approaches to psychology pioneered by Wundt and Titchener involved trying to break conscious experience down into its constituent images, sensations, and feelings.
- Behaviourism - assumed that complex behaviour was the sum of all past stimulus-response learning units.
- Biopsychology - aims to explain all at the psychological or mental level in terms of that at the physiological, neurochemical or genetic level. Ultimately, psychology would be replaced by biology and the other natural sciences lower down on the reductionist ladder.



A simple reductionist hierarchy of explanation.

Other approaches have proposed higher level holistic and/or interactionist explanations of human behaviour, for example:

- **Humanistic psychology** - investigates all aspects of the individual as well as the effect of interactions between people. Gestalt therapy developed by Fritz Perls aims to enable people to accept and cope with all aspects of their life and personality.
- **Social psychology** - looks at the behaviour of individuals in a social context. Group behaviour may show characteristics that are greater than the sum of the individuals which comprise it (or *less* in the case of social loafing!).
- **Psychoanalysis** - Freud adopted an interactionist approach, in that he considered that behaviour was the result of dynamic interaction between id, ego, and superego.
- **Abnormal psychology** - mental disorders are often explained by an interaction of biological, psychological, and environmental factors. Schizophrenia may be due to a genetic predisposition triggered by environmental stress. An eclectic approach to therapy is often taken using drugs and psychotherapy.
- **Perception** – illusions show that humans perceive more than the sum of the sensations of the retina.

FOR

- Reductionist explanations in psychology adopt a very **scientific** and **analytical** approach, which has worked very well with the natural sciences.
- By breaking phenomena down into smaller simple components (as behaviourism did with stimulus-response units) these constituent parts are often more **easily tested.**
- By explaining behavioural phenomena in terms of their underlying physical basis, psychology gains the scientific **support** and **credibility** of these well established and robust sciences, and **unifies** with them to provide a **consistent** picture of the universe.

- The interactionist approach can **integrate** many **different levels** of explanation to provide a more **complete** and **realistic** understanding of behaviour.
- Holism does **not ignore** the **complexity** and the **'emergent properties'** of higher level phenomenon. For example, there may be aspects of crowd behaviour that could not be explained in terms of the individuals in that crowd.
- **Functional** explanations are only possible at higher levels - examining the social reasons **why** we show a certain aggressive behaviour is often more useful than providing a detailed neuronal, hormonal and physiological explanation of the act.

AGAINST

- **Oversimplification** - reductionist explanations often ignore many important interactions and the emergent properties of phenomena at higher levels. The whole may be greater than the sum of its parts.
- **Value of explanation** - higher level explanations may be less detailed and more useful than lower level ones. The **meaning** of an action, such as a hand wave, is only gained from its situation (e.g. greeting or drowning) not its underlying physiological description.
- **Validity of reductionism** - Rose (1976) argues that different levels of discourse cannot be substituted for each other. This raises the problem of the relationship between the **mind** and the **brain** - is a feeling of pain the same as the activation of nerve cells in a particular part of your brain? A neurologist may follow the 'neuronal path' of a pin prick up the arm and into a reception area of the brain, but the neurologist would have to rely on your conscious (psychological level) verbal report to know whether you ***felt*** pain or not.

- There is a great **practical difficulty** in investigating the integration of explanations from different levels. Research into mental disorders is beginning to understand the interaction of environmental, psychological, and biological explanations of disorders like depression.
- Holistic explanations of psychological phenomena that assume the mind is not the same as the body, tend to **ignore** the huge **influence** of biology on behaviour.
- Holistic explanations tend to get more **hypothetical** and divorced from physical reality the higher they go up the reductionist ladder. Higher level theories appear to **lack** the **predictive** power of the physical sciences (although there is a corresponding increase in the complexity of the systems investigated).

The nature-nurture debate in psychology

APPROACH

NATURE

Roots of the approach - nativist philosophy, biology (physiology and genetics), evolutionary theory.
Causes of behaviour - genetic determinism, inherited influence, maturational blueprint, neurochemical and hormonal influences, brain activity.
Methods employed - gene/chromosome mapping, twin and adoption studies, brain scanning, brain stimulation or damage studies, drug testing.
Implications - due to biological determinism, behaviour can only be changed through physical means, such as selective breeding (eugenics), gene therapy, brain surgery, or drugs.
Criticisms - reductionist, may neglect environmental influences.

NURTURE

Roots of the approach - empiricism philosophy, behaviourism, social psychology.
Causes of behaviour - the mind is regarded as a 'tabula rasa' (blank slate) at birth; therefore, knowledge and behaviour are the result of experience and learning from the environment.
Methods employed - use of classical and operant conditioning techniques to affect behaviour, manipulation of social environment to change behaviour.
Implications - due to environmental determinism, behaviour can only be easily changed through manipulating reinforcement and environmental conditions. Anybody could be trained to do anything.
Criticisms - reductionist, may neglect innate influences.

AREAS OF EXPLANATION

NATURE

Perception - Research conducted by Fantz, Bower, and Gibson and Walk on new-born babies indicated pattern detection, size constancy and depth perception are innate abilities.
Aggression - The ethologist Lorenz and psychoanalyst Freud believed aggression is an innate drive. Bio-psychologists have examined the role of hormones and brain areas in aggression.
Sex-role behaviour - Bio-psychologists propose gender identity is a direct result of genetic and hormonal influences.
Abnormality - The biomedical approach has isolated genetic and neurochemical causes of mental disorders.
Language acquisition - Chomsky proposed language is gained through the use of an innate language acquisition device.

NURTURE

Perception - Research into perception by Hebb on cataract removal and Turnbull on cross-cultural differences indicated that perceptual identification is a learnt ability.
Aggression - Social learning theory argues that aggression is learnt from the environment through observation and imitation. Social psychologists study conformity to aggressive norms.
Sex-role behaviour - Cultural relativism and learning theory argue that gender is socially constructed and reinforced.
Abnormality - The environment plays a role in the development of phobias, post-traumatic stress disorder, and anorexia.
Language acquisition - Skinner argued that language is learnt from other people via natural behaviour shaping techniques.

INTERACTIONISM

While some researchers have aimed to investigate the relative contributions of innate and environmental factors in psychology, it is now accepted that the two influences form a **continuum** and interact so thoroughly with each other that they are virtually inseparable. Even seemingly direct genetic influences, such as those on the physical development of the brain, are affected by environmental factors from the inside of the womb to the pollution of the atmosphere. Many genes could impose a **susceptibility** to develop in certain ways or provide a 'norm of reaction' - a genetic potential that may or may not be realised by environmental circumstances. In a similar way, environmental experiences are **mediated** by not only innate abilities but even by the physical structure of the body, e.g. what gender or skin colour it has.

EXAMPLES OF NATURE-NURTURE INTERACTION IN PSYCHOLOGY

Perception - Blakemore and Cooper showed restricted environmental experience could physically affect the visual cortex of the brain.
Cognitive development - Piaget suggested that innate schemata develop and expand through interaction with the environment to adapt the child to its surroundings, although development was always limited by biological maturation.

Abnormality - Many mental disorders, such as schizophrenia, may have a genetic predisposition - those with an inherited susceptibility may be more likely to develop the disorder if they experience certain stressful environmental conditions. Animal studies have looked at the effect of aversive environmental stimuli upon the brain's neurotransmitters to explain depression.

Sex-role behaviour - The Biosocial approach proposes that factors such as the physical sex and innate temperament of a new born baby elicits sex typing behaviour from the people around it, leading to a self-fulfilling prophecy in terms of its gender identity.

THE STANDING OF THE DIFFERENT APPROACHES IN PSYCHOLOGY

NATURE ← → NURTURE

BIOPSYCHOLOGY	PSYCHOANALYSIS	COGNITIVE PSYCHOLOGY	HUMANISM	BEHAVIOURISM
Focuses on genetic, physiological, hormonal and neurochemical explanations of behaviour.	Focuses on instinctual drives of sex and aggression, expressed within the restrictions imposed by society via the ego and superego.	Focuses on innate information processing abilities or schemata that are constantly refined by experience.	While accepting basic physiological needs, the focus is upon the person's experience of their social and physical environment.	Focuses on the acquisition of virtually all behaviour from the environment via conditioning.