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The nature of psychology

- Psychology is the scientific study of behaviour and the mind. Psychologists systematically gather and evaluate empirical evidence to answer questions about how people behave, think and feel.
- Psychology's systematic approach yields more accurate knowledge about behaviour than everyday casual observations and conventional folk wisdom, which have generated many misconceptions and myths about human nature.
- Descriptions, explanation, control and application are the main goals of psychological science. Basic research reflects the quest for knowledge for its own sake. Applied research focuses on solving practical problems.
- Because psychologists study biological, psychological, and environmental and social factors that affect a wide array of behaviours, psychological science intersects with many other disciplines.

Perspectives on behaviour

- Several major perspectives have shared psychology's scientific growth. In the late 1800s, Wundt and James helped found psychology. Structuralism, which examined the basic components of consciousness, and functionalism, which focused on the purposes of consciousness, were psychology's earliest schools of thought.
- The psychodynamic perspective proposes that unconscious motives, conflicts and defence mechanisms influence our behaviour. Freud emphasised how unconscious sexual and aggressive impulses and childhood experiences shape personality. Modern psychodynamic theories focus on how early family relationships and our sense of self unconsciously influence our behaviour.
- The behavioural perspective emphasises how the external environment and learning shape behaviour. Watson and Skinner believed that psychology should study only observable stimuli and responses, not unobservable mental processes. Cognitive behaviourists believe that learning experiences influence our thoughts, which in turn influence our behaviours.
- The humanistic perspective emphasises personal freedom and choice, psychological growth and self-actualisation. Humanism has contributed to research on the self, the process of psychotherapy and today's positive psychology movement.
- The cognitive perspective, embodied by the subfield of cognitive psychology, views humans as information processors who think, judge and solve problems. Cognitive neuroscience examines brain processes that occur as people perform mental tasks.
- The sociocultural perspective examines how social environment and cultural learning influence our behaviour and thoughts. Cultural psychologists study how culture is transmitted to its members and examine similarities and differences among people from various cultures.
- The biological perspective examines how bodily functions regulate behaviour and psychological characteristics. Behavioural neuroscientists study brain activity and hormonal influences, behaviour geneticists examine the role of heredity and evolutionary psychologists seek to explain how evolution has biologically predisposed modern humans toward certain ways of behaving.

Using levels of analysis to integrate the perspectives

- Factors of influence behaviour can be organised into three levels of analysis. The biological level examines brain processes, hormonal and genetic influences and evolutionary adaptations. The psychological level focuses on mental processes and psychological motives. The environmental and social level examines physical and social stimuli, including cultural factors, that shape our behaviour and thoughts.
- Biological, psychological, and environmental and social factors contribute to depression and also interact with one another. Interaction means that the way in which one factor (e.g. personal setback) influences behaviour depends on the presence of another factor (e.g. a weak or strong biological vulnerability to develop depression).

Psychology today

- Modern psychologists work in many settings. They teach, conduct research, perform therapy and counselling, apply psychological principles to enhance human welfare and help shape public policy.

Scientific principles in psychology

- The scientific process proceeds through several steps: (1) identifying a question of interest (2) formulating a tentative explanation and a testable hypothesis (3) conducting research to test the hypothesis (4) analysing the data, drawing a tentative conclusion and reporting one's findings to the scientific community; and (5) building a body of knowledge by asking further questions, conducting more research and developing and testing theories.
- In everyday life, we typically use hindsight to explain behaviour. Hindsight is flawed because there may be many possible explanations and no way to assess which is correct. Psychologists prefer to test their understanding through prediction, control and theory building.
- A good theory organises known facts, gives rise to additional hypotheses that are testable, is supported by the findings of new research and is parsimonious.
- An operational definition defines a concept or variable in terms of the specific procedures used to produce or measure it.
- To measure behaviour, psychologists use self-reports and reports from others who know the participants, directly observe behaviour, use unobtrusive measures, analyse archival data, administer psychological tests and measure psychological responses.

Ethical principles in research

- Psychological researches follow extensive ethical guidelines. In human research, key standards include obtaining informed consent, ensuring the participants' right to privacy, minimising potential risks to participants and minimising the use of deception.
- Animals must be treated humanely. As in human research, the risks to which they are exposed must be justified by the potential importance of the research.
- Before human or animal research can be conducted, it must be approved by ethics review boards.

Methods of research

- Descriptive research describes how organisms behave. Case studies involve the detailed study of a person, group or event. They often suggest ideas for further research but are a poor method for establishing cause and effect relations.
- Naturalistic observation can yield rich descriptions of behaviour in real-life settings and permits examination of relations between variables. Researches try to avoid influencing the participants they observe.
- Surveys involve administering questionnaires or interviews to many people. Many surveys study a sample that is randomly drawn from a larger population.
- Representative samples allow researchers to estimate the responses of the entire population. Unrepresentative samples can lead to inaccurate estimates.
- Correlational research measures the relation between naturally occurring variables.
- A positive correlation means that higher scores on one variable are associated with higher scores on a second variable.
- A negative correlation occurs when higher scores on one variable are associated with lower scores on a second variable.
- Casual conclusions cannot be drawn from correlation data.
- A well-designed experiment is the best way to examine cause and effect relations.
- Experiments have three essential characteristics: (1) one or more variables – called independent variables – are manipulated, (2) their effects on other variables – called dependent variables – are measured and (3) extraneous factors are controlled so that cause and effect conclusions can be drawn.
- The independent variable is viewed as the cause: the dependent variable, as the effect.
- In some experiments, different participants are randomly assigned to each condition. In other experiments, the same participants are exposed to all the conditions, but the order in which the conditions are presented is counterbalanced.
- Researchers can study several casual factors within one experiment by simultaneously manipulating two or more independent variables.