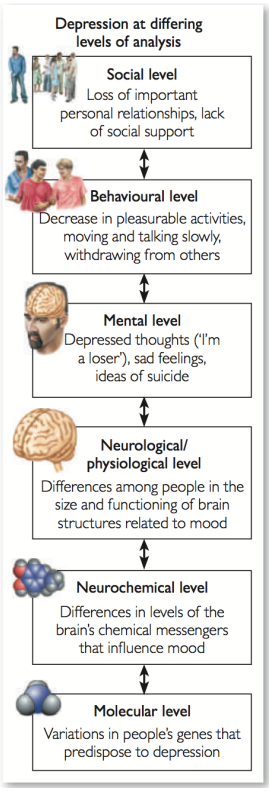
PSYCHOLOGY

WEEK 1
SCIENCE AND PSEUDOSCIENCE IN PSYCHOLOGY
WHAT IS PSYCHOLOGY?

Definition: the scientific study of the mind (higher order functioning), brain and behaviour.



Multiple levels of analysis
- multiple determinants
  - inter-relationships
  - different for each individual
  - influenced by others
  - cultural differences

Naive realism: the belief that we see the world precisely as it is

Scientific theory: an explanation for a large number of findings in the natural world.
- A scientific theory offers an account that ties multiple findings together into one conceptual package

Objectivity: attempt to set aside personal interests when evaluating the evidence for a scientific claim

SCIENCE AS A SAFEGUARD AGAINST BIAS

Confirmation bias: tendency to seek out evidence that supports our hypotheses and neglect or distort evidence that contradicts them

Belief perseverance: the tendency to stick to our initial beliefs even when evidence contradicts them

PSYCHOLOGICAL PSEUDOSCIENCE

Definition: a set of claims that seem scientific but is not
- pseudoscience lacks the safeguards against conformation bias and belief perseverance that characterise science

Why are we drawn towards pseudoscience?
- finding comfort in our beliefs
- make order out of disorder
- terror management theory: awareness of our own deaths leaves a sense of fear, so we adopt cultural world views

Warning signs that help us recognise pseudoscience

Sign of pseudoscience	Definition	Example	Overcome
Overuse of ad hoc immunising hypothesis	Escape hatch or loophole that defenders of a theory use to protect their theory from being contradicted by evidence	The psychic who claimed to predict the future failed all controlled tests in the lab, but said it was because the experimenters inhibited his extrasensory powers	Open minded scepticism

Lack of self-correction when contrary evidence is published	in pseudosciences incorrect claims never go away, because their proponents cling to them stubbornly despite all contrary evidence	Although some scientists say that we use almost all our brains, we have found a way to harness additional brain power previously undiscovered	Willing to change
Overreliance on anecdotes	a short amusing or interesting story about a real incident or person	This women practised yoga daily for three weeks and hasn't had a day of depression since	Empirical observation
Belief perseverance	tendency to stick to our original beliefs even when evidence contradicts them		Unbiased
Exaggerated claims	Overemphasising things	Three simple steps will change your life forever	Objective verification

Antidote against pseudoscience

Logical fallacies: traps in thinking that can lead to mistaken conclusions

- Emotional reasoning fallacy: error of using our emotions as guides for evaluating the validity of a claim
- Bandwagon fallacy: error of assuming that a claim is correct just because many people believe it

Other logical fallacies

Name	Definition	Example
Appeal to authority fallacy	Error of accepting a claim merely because an authority figure endorses it	My professor says that psychotherapy is worthless; because I trust my professor she must be right
Genetic fallacy	Error of confusing the correctness of a belief with its origins (genesis)	Freud's views about personality development can't be right, because Freud's thinking was shaped by sexist views popular at the time
Argument from antiquity fallacy	Error of assuming that a belief must be valid just because it has been around a long time	There must be something to the Rorschach Inkblot Test, because psychologists have been using it for decades
Argument from adverse consequences fallacy	Error of confusing the validity of an idea with its potential real-world consequences	IQ can't be influenced by genetic factors, because of that were true it would give the government an excuse to prevent low-IQ individuals from reproducing
Appeal to ignorance fallacy	Error of assuming that a claim must be trie because no one has shown it to be false	No scientist has been able to explain away every reported case of ESP so ESP probably exists
Naturalistic fallacy	Error of inferring a moral judgement from a scientific fact	Evolutionary psychologists say that sexual infidelity is a product of natural selection. Therefore, sexual infidelity is ethically justifiable
Hasty generalisation fallacy	Error of drawing a conclusion on the basis of insufficient evidence	All three people I know who are devilry depressed had strict fathers, so severe depression is clearly associated with a strict father
Circular reasoning fallacy	Error of basing a claim on the same claim reworded in slightly different terms	Dr. Smith's theory of personality is the best, because it seems to have the most evidence supporting it

Name	Definition	Example
Not me fallacy	error of believing we are immune from thinking errors that afflict others	My psychology professor keeps talking about how the scientific method is important for overcoming biases. But these biases do not apply to me, because I'm objective
Bias blind spot	lack of awareness of our biases, coupled with an awareness of others' biases	I don't have an accent

THE DANGERS OF PSEUDOSCIENCE

- Opportunity cost: investment of time, energy and effort in a questionable treatment that can lead people to forfeit the chance to obtain an effective treatment (what we give up)
- Direct harm
- An inability to think critically as citizens

SCIENTIFIC SCEPTICISM

Scientific scepticism: approach of evaluating all claims with an open mind, but insisting on persuasive evidence before accepting them

CRITICAL THINKING

Critical thinking: set of skills for evaluating all claims in an open-minded and careful fashion

Six principles of scientific thinking

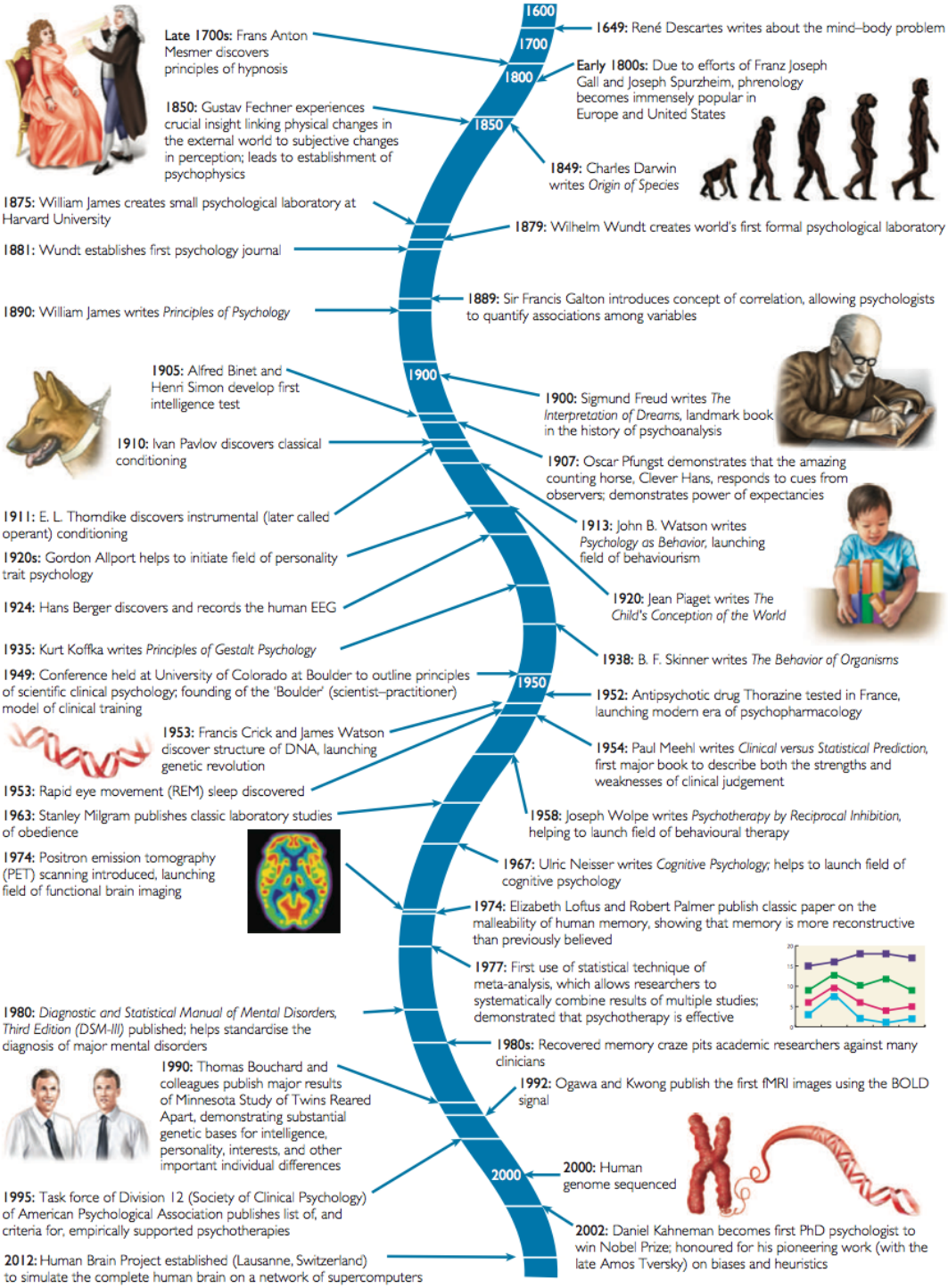
Name	Explanation	Example
Extraordinary claims	The more a claim contradicts what we already know, the more persuasive the evidence for this claim must be before we should accept it	The claim that a monster, like Bigfoot, has been living in the American Northwest for decades without being discovered by researchers requires more rigorous evidence than the claim that people remember more words from the beginning than from the end of a list
Testability	Scientists try to test the novel predictions of their (and rival) theories in order to find out if the theory really describes the world.	If your friend predicted the Broncos and the Storm will both win tomorrow but the Roosters and the Knights will lose and this prediction came true, you might think it could be due to chance. But if he instead predicted the Broncos will win by seven points and the Storm by one but the Roosters and the Knights will both lose by nine points and this came true, you might consider placing bets
Occam's razor	If two hypotheses explain a phenomenon equally well, we should generally select the simpler one	If a person with poor vision claims to spot a flying saucer during a Frisbee tournament taking place on a foggy day, it's more likely that his UFO report is due to a simpler explanation—his mistaking a Frisbee for a UFO—than to alien visitation
Replicability	A finding must be capable of being duplicated by independent researchers following the same 'recipe.'	If a researcher finds that people who practise meditation score 50 points higher on an intelligence test than people who don't but no one else can duplicate this finding, we should be sceptical of it
Ruling out rival hypothesis	Findings consistent with several hypotheses require additional research to eliminate these hypotheses	If an investigator finds that depressed people who receive a new medication improve more than do equally depressed people who receive nothing, this difference may be due to the fact that the people who received the medication expected to improve

Name	Explanation	Example
Correlation vs causation	The fact that two things are associated with each other doesn't mean that one causes the other	The finding that people eat more ice-cream on days when many crimes are committed doesn't mean that eating ice-cream causes crime; both could be due to a third variable, such as higher temperatures

WEEK 2
HISTORICAL TIMELINE OF PSYCHOLOGY
PSYCHOLOGY PAST AND PRESENT

An understanding of history gives us:

- Greater perspective and a deeper understanding
- Recognition of fads and fashions
- Ability to avoid repetition of mistakes
- A source of valuable ideas



Theoretical perspectives that shaped psychology

Perspective	Leading Figures	Scientific goal	Lasting scientific influence
Structuralism	Edward. B. Titchener	Uses introspection to identify basic elements or 'structures' of experience. To learn about the structure of the mind through analysing elementary conscious experience Elements of consciousness: sensation, images and affections (feelings) - decline of structuralism party due to criticisms of introspection as an experimental method - imageless thought	Emphasis on the importance of systematic observation to the study of conscious experience
Functionalism	William James; influenced by Charles Darwin	To understand the functions or adaptive purposes of our thoughts, feelings and behaviours. To examine the purpose and functions of the mind. Consciousness evolved because is has a function- adaptive purpose, struggle for survival	Has been absorbed into psychology and continues to influence it indirectly in many ways
Behaviourism	Ivan Pavlov; John B. Watson; B. F. Skinner	To uncover the general principles of learning that explain all behaviours; focus is largely on observable behaviours. Environment was everything. Emphasis on objectivity, prediction and control of behaviour, animal studies, black box, little Albert study. Skinner emphasised observation and control. All behaviour is determined by its consequences. Also argued that psychological studies only focus on objective and measurable phenomena	Influential in models of human and animal learning, and among the first to focus on need for objective research
Cognitivism	Jean Piaget; Ulric Neisser	To examine the role of mental processes on behaviour. Opening the Black Box. - mental processes involved with different aspects of thinking. Decline of behaviourism. Neobehaviourism.	Influential in many areas, such as language, problem-solving, concept formation, intelligence, memory, and psychotherapy
Psychoanalysis	Sigmund Freud	To uncover the role of unconscious psychological processes and early life experiences in behaviour. Theory of personality: !d- pleasure principle. Ego- reality principle. Superego- morality. Psychosexual stages of development	Understanding that much of our mental processing goes on outside of conscious awareness

Psychology grew out of Philosophy

Rationalism

The criterion of the truth is not sensory but intellectual and deductive

- Rene Descartes (1596-1650)- French mathematician, philosopher and physiologist
- Knowledge is from thought and reflection
- "*Cogito ergo sum*" or, I think, therefore I am

Empiricism

The human mind begins as a "tabula rasa" and we learn through experience
Two sources of ideas demo experience:

- Sensation and Reflection

Simple knowledge builds Complex knowledge

Behaviourism

Theory of evolution: Charles Darwin (1809-1882)
Humans have descended from animals by modification through principles
Impact-

- study of animal behaviour as model for human behaviour - influence on behaviourism
- precursor to the school of functionalism
- contemporary views on evolutionary psychology