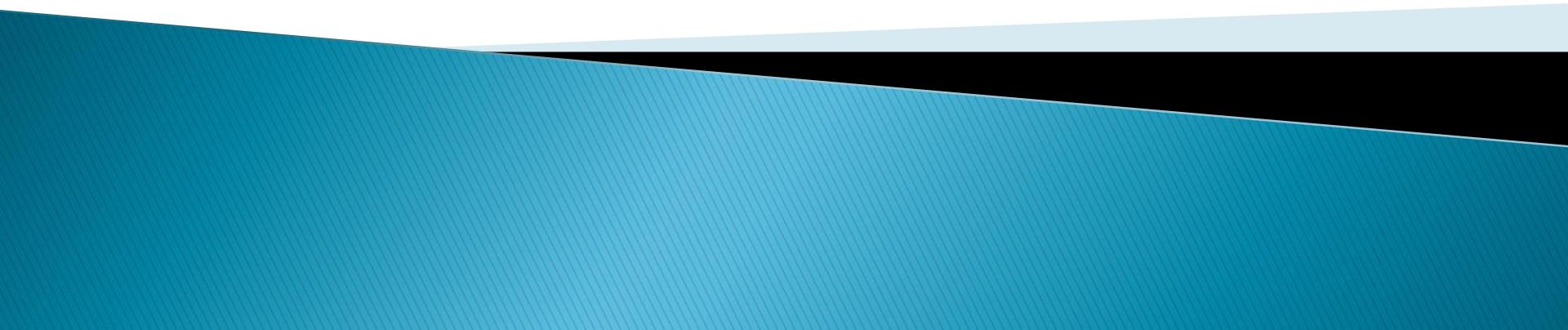


Experimental Psychology

M4X00905

Lecture 3: Beginnings of Experimental Psychology.

Dr Kate Williams

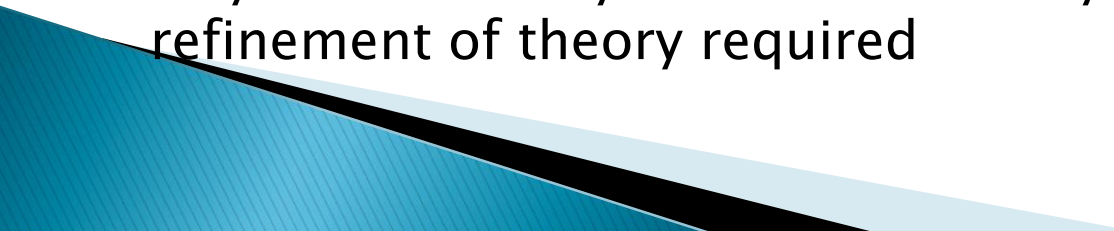


How Should We Conduct Science?

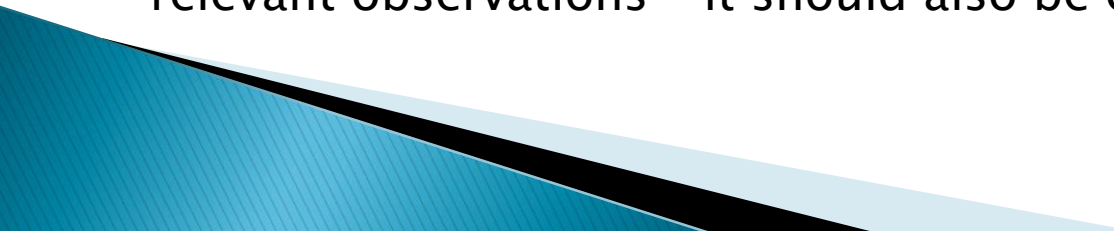
Lakatos and Feyerabend

- ▶ Both influenced by Popper's ideas of falsificationism (worth of scientific theory gauged by what it *cannot* explain).
 - But had different views on what it should mean for science:
 - Lakatos: influence was positive & he aimed to build on the idea.
 - Maintain Popper's core rationale while considering scientific practice
 - Aimed to minimise the potential for prematurely falsifying a theory.
 - Feyerabend: against the idea that falsificationism captured the essential feature of scientific method.
 - Questioned whether there was a single scientific method.
 - Argued science only progresses by breaking rules of methodology.
- ▶ Both disagree with Kuhn's ideas of working within the confines of the currently prevailing theory & that scientists do not test their theory to destruction.

Lakatos

- ▶ Aimed to improve on Popper's insights – why?
 - To avoid what he thought was Kuhn's irrationalism.
 - ▶ Saw Kuhn's view of paradigm shifts as irrational decisions and subject to 'mob mentality'.
 - No rational criteria for deciding between or comparing paradigms.
 - A change of paradigm could happen from social pressure, personal preference, or faith.
 - ▶ Believed Kuhn had rejected a simplistic version of the falsificationism argument.
 - ▶ Agreed with Popper's view of falsifiability – nothing can be proved but a theory can be shown to be false
 - But must not be premature in throwing away theory
 - May not be theory that is false – may be error of observation or refinement of theory required
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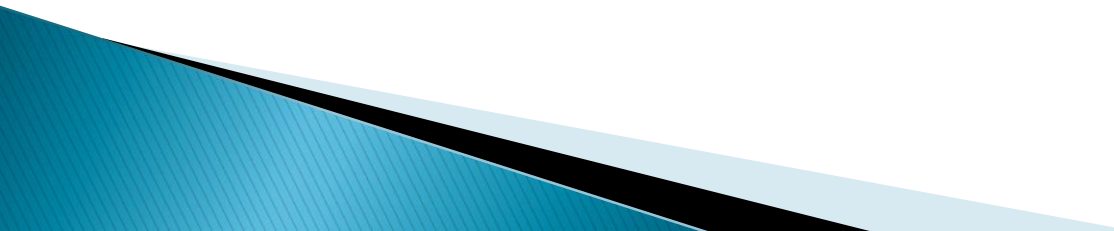
Lakatos

- ▶ Rejects the empiricism of logical positivism.
 - ▶ But also rejects naïve falsificationism.
 - ▶ Describes Popper as a ‘methodological falsificationist’
 - Those who believe it is the decision of the scientific community to accept that observations have falsified a theory.
 - ▶ Issues with this:
 - No absolute rules on how many times findings need to be replicated in order to falsify a theory.
 - The risk in doing this could be rejecting a theory that is in fact true.
 - Doesn’t fit the history of science – sometimes previously rejected theories are reinstated (but according to Popper if a theory is falsified then it should no longer be worked on).
 - Testing a theory should not just be about comparing one theory with relevant observations – it should also be compared to rival theories.
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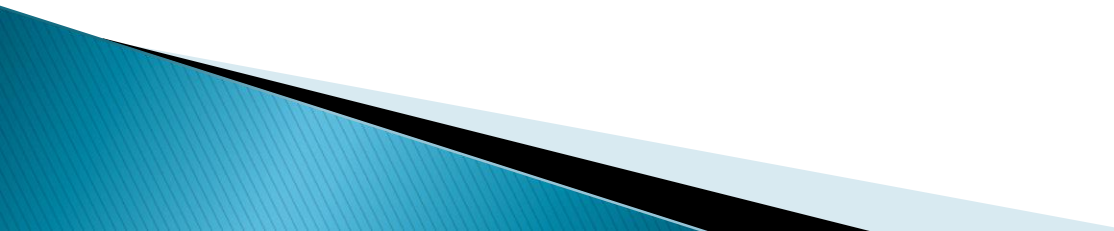
Lakatos

- ▶ We already know that Kuhn argued a similar case – a paradigm is not rejected in favour of nothing, it is rejected in favour of another paradigm.
 - So, Lakatos argues we have to understand how theories relate to one another as well as to empirical observations.
 - A theory should only be seen as falsified if there is a better theory available.
- ▶ This is at the core of his idea of – Research Programmes
 - We should appraise a series of theories (not just one).
 - Falsification can only occur when an improved theory predicts new findings to take the place of rejected theories.
 - If there are any anomalies or difficult findings to justify, this doesn't falsify a theory.
 - If the rules of Popper's falsificationism were taken literally then all theories would be falsified at the time.

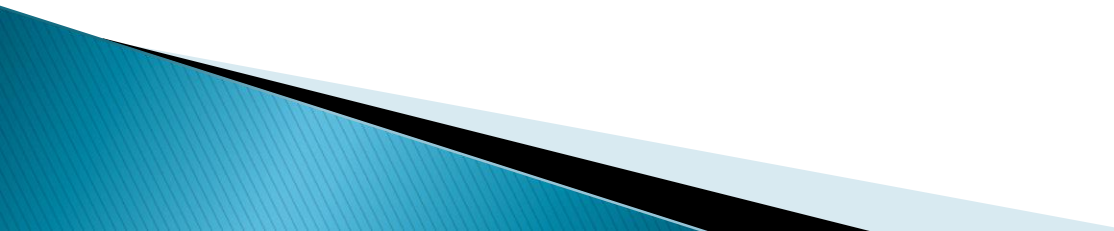
Lakatos

- ▶ So, Lakatos provides a principled reason for maintaining a theory even in the face of anomalies, while also providing rationale for a theory to be rejected if that is the decision of the scientific community.
 - ▶ For Popper rejection is final, while for Lakatos, his ideas regarding falsificationism are seen as less risky as there is less potential of falsely rejecting a theory.
 - ▶ By applying rejection to a research programme instead of a single theory, Lakatos argues that those theories then have more time to prove themselves.
 - But how can this be achieved?.....
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Lakatos

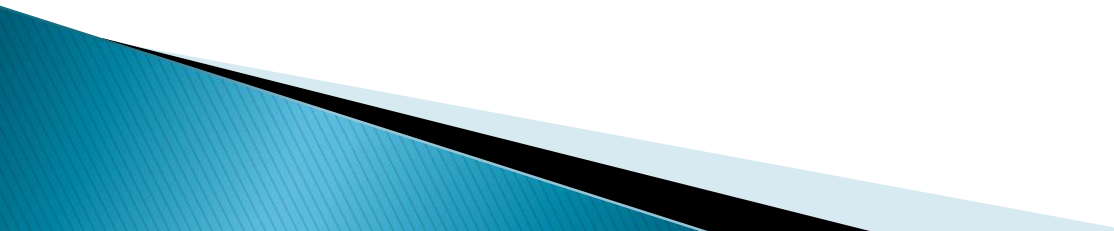
- ▶ A research programme can withstand being subjected to conflicting findings whilst being given the opportunity to develop its full potential because not all parts of the research programme are equal.
 - Some concepts/principles are more important and so form the essential commitments of the programme.
 - ▶ What he calls the 'Hard Core' of the research programme.
 - ▶ Other less fundamental parts of the research programme, what he calls: Auxiliary hypotheses, can be called into question, changed, and improved on.
 - ▶ In the face of falsifying observations the auxiliary hypotheses can be rejected without calling in to question the basic components of the research programme.
 - They form what he calls a 'protective belt' around the hard core.
- 

Lakatos

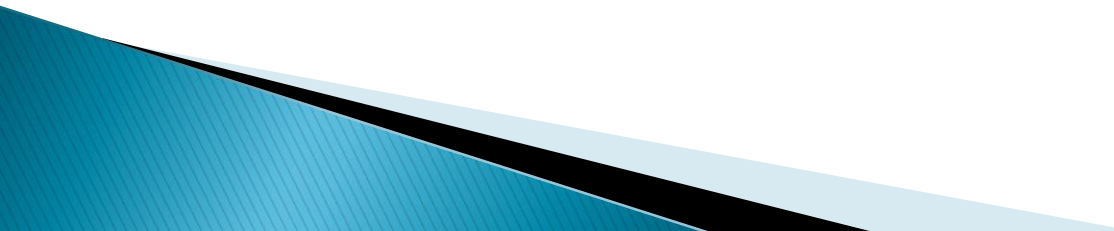
- ▶ Can you see any similarities between Lakatos's idea of a research programme and Kuhn's idea of a paradigm?
 - ▶ For Lakatos, a paradigm is just a powerful, pervasive research programme.
 - It is nothing more than a research programme that has achieved a monopoly status.
 - ▶ But he argues that these are rarely achieved in science – instead we have several competing research programmes existing along side each other.
 - He argues that this is how it should be.
 - ▶ He argues that there is no such thing as 'instant rationality' in the evaluation of scientific theories (which was an issue with the earlier version of falsificationism).
- 

Lakatos

- ▶ However;
 - His ideas were not clear about when we should change from one research programme to another.
 - How long should we allow a research programme to continue in order to give it ample time to showcase its concepts and be accepted as the theory to which we should ascertain?
 - What constitutes a research programme merely experiencing problems vs. being completely unfit for purpose?

 - ▶ These are difficult questions to answer and Lakatos was thought to have found it difficult to think of there being no hard-and-fast rules in science.
 - However, this was something that Feyerabend thrived on.
- 

Feyerabend

- ▶ He put forward what is known as ‘Epistemological anarchism’.
 - According to which there is no such thing as scientific method.
 - ▶ He points out that the world is complex so we should not restrict ourselves by preconceived ideas of what we would call ‘a correct method’ should be.
 - Instead we should be flexible, sensitive to different situations/conditions/circumstances, and not be rigid with testing
 - ▶ So, instead of following ‘*a priori*’ abstract rules we should use ‘*a posteriori*’ rules to guide what we can and cannot study
- 

Feyerabend

- ▶ He believed rule-breaking is necessary for progress and creativity and was heavily critical of Popperian falsificationism.
 - He argued that rejection of a theory following falsification cuts the breadth of ideas that may have ended up helping us understand the world.
 - So, instead of falsificationism, he argues for *theoretical pluralism*.
 - He believes there should be a wide range of theories in circulation.
 - We can then take the best parts from each of the competing theories to progress our knowledge.
 - We should also seek guidance from wherever we can
 - No theory should ever be completely rejected because some part of it may hold value for us in the distant future.

Feyerabend

- ▶ He argues that Science is messy
 - Objective reality+perceptual system+brain interpretation of reality
 - He does not argue that there should be no rules but that the rules should be flexible and sensitive to the particular historical context.
- ▶ He also argues that the empiricist ideal of a pure, theory-neutral sensory knowledge of the world is a complete illusion.
 - Observations are made not only by ‘what is out there in the world’ but also from what is in us – the nature of our perceptual system.
 - What we experience is a mixture of both subjective and objective contributions, which cannot be isolated into individual components
- ▶ Finally, he argues that Science stifles variety
 - E.g., colour

Feyerabend

- ▶ If all our observations are subjective then can we ever know the true nature of reality?
 - Feyerabend would argue No:
 - It is a mistake to believe that science gives us one true picture of reality.
 - Also, there is no 'one science' – there are many different disciplines or schools of thought. There is no scientific-world view.
 - “Science is a mixed bag of opinions, procedures, ‘facts’, ‘principles’, not a coherent unit.” (*Conquest of Abundance*, pg. 212).
 - Scientific approaches, no matter how successful, contradict approaches in other domains – even non-scientific approaches, which could themselves be successful.

Feyerabend

- ▶ He also argues that Science stifles variety – something which exists in abundance in our world.
 - It does this by categorising things as either real or objective, and other things as illusionary or subjective.
 - E.g., colour is deemed to be ‘unreal’ – colour does not exist, instead it is light reflecting off surfaces which produces the appearance of colour.
 - This links back to Descartes & Lock, who in particular distinguished between *primary* (the real properties, e.g., shape & mass) & *secondary* (the subjective effect the primary qualities produce in us, e.g., colour, taste, smell) qualities of objects.
 - BUT: Feyerabend argues that depending on the context, colour is just as real as anything else.
 - E.g., the justification of colour being fundamental to reality would be different to a physicist to what it would be to a painter.
 - There are many things that don’t have a physical place in the world (e.g., interest rates) yet they exist and can have profound effects on our lives.

Conducting Science

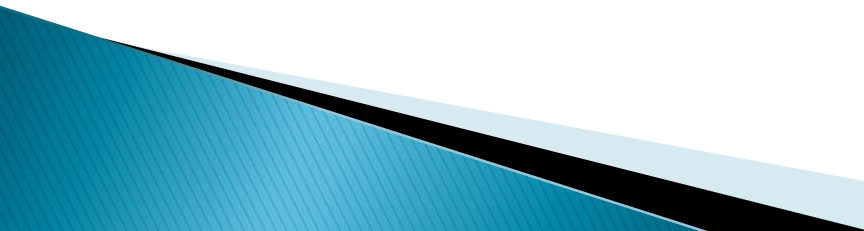
► To sum:

- Kuhn's philosophy of science was considered to be irrational by Lakatos, so he developed on the falsification ideas of Popper by arguing that no theory could ever be proved as true or as false.
 - "Falsified" theories may actually be true.
- But, there was uncertainty surrounding the degeneration of what he had called research programmes.
- So, Feyerabend argued that science should break methodological rules.
- The ideas of Kuhn, Popper, Lakatos, & Feyerabend all differ in the way they think of science but all agree that science is not the accumulation of observational facts & observations are not only guided by a theoretical framework but are constituted by those frameworks, which leads scientist to ask certain questions & impacts the way they subsequently see the results of investigation

Hume

- ▶ Provided ideas of great importance to Psychology.
 - E.g., experience constitutes fundamentally discrete sensations only held together by fortuitous associations.
 - He critically examined human reason and knowledge
 - He distinguished between 2 different types of mental content:
 - Impressions: our lively and strong perceptions
 - Ideas: fainter and weaker
 - Basically, we have actual perceptual experiences and we have ideas derived from them.
 - The ideas can be linked to faint copies/images of the original.
 - The sense of them is brought about by their connection
 - An idea not traceable back to experience is nonsense.
 - Experience is both our source of knowledge & what we use to measure our knowledge.
 - But how do the ideas derived from experience become organised in our mind? How can impressions & ideas relate in appropriate ways to constitute knowledge?.....

Hume

- It is achieved through what Hume calls: **Contiguity in time & space**
 - They occur together – can you think of an example?
 - For Hume the most important way ideas & impressions are brought together is in terms of *cause & effect*.
 - Events do not happen randomly, they are causally connected:
 - E.g., if we see a flame & then feel heat, we experience the flame as having caused the heat.
 - But: the importance of causality raises an issues:
 - We do not receive an impression of a causal connection, yet for an idea to be meaningful it has to be derived from sensory impression.
 - Hume argues: Causality is a matter of habit: we continually experience the conjunction of two things & conclude the former is the cause of the latter.
 - But: these expectations are not logically justified – just because b follows a doesn't mean a is the cause of b.
- 

Hume

- ▶ He was also very sceptical of our internal mental world & was unable to find a basis for the existence of what would tie mental events together – the self.
- ▶ He believed self-knowledge should also be assessed by its grounding to experience.
- ▶ He suggests that there is no such thing as the self that exists through time...
 - Known as the 'bundle theory of the self'
- ▶ His scepticism raises doubts about our understanding of both the physical universe and ourselves.
- ▶ If there is no coherence between the two then there is no understanding.
- ▶ Reason is NOT the sole guide to activity – causal connections are a necessity for us to function.
 - Reason has to give way to what he calls our 'natural beliefs'.

Biological and Evolutionary Foundations of Psychology

- Up until the mid 19C, discussions of the mind had been theoretical.
- Now attention was turning to measuring the mind experimentally.
 - Achieved through new methods and development of laboratory technology.
 - But philosophical theories were not completely cast away, instead they informed much of the resulting empirical work.
- Two influential philosophers in physiological Psychology:
 - Kant
 - Spinoza
 - Believed that the mental and the physical were not separate realms but two aspects of the one and the same reality.
 - Every event that occurs in the physical body can also be seen as a mental event.

Spinoza

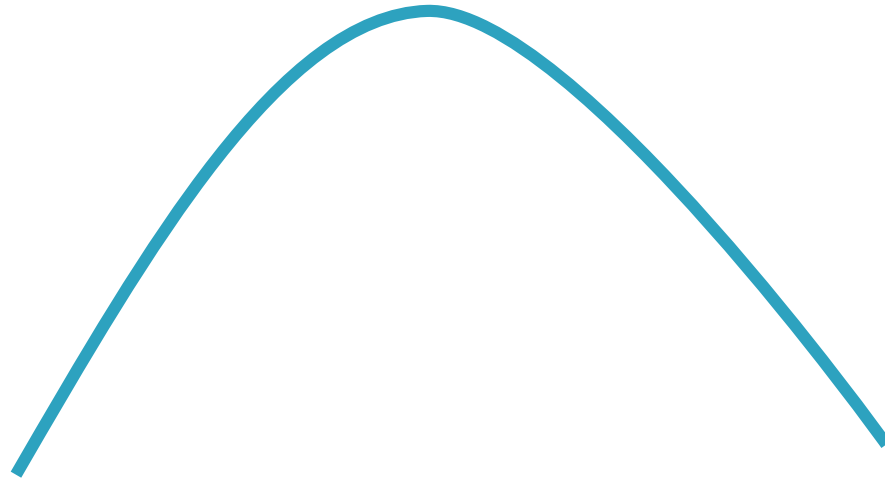
- ▶ The development of physiological Psychology was reliant on his ideas regarding the relationship between the mind and the body.
- ▶ He rejected Cartesian Dualism (the idea that the mind and the body are mutually exclusive). How could these two substances interact?
 - Instead there is one substance for mind and body (the whole of reality).
 - However, this substance has different attributes/features:
 - One was that of physicality or extension in time and space
 - The other was that of mentality.
 - So, he conceived the mental and the physical as different attributes of one thing.
 - Known as the: double-aspect theory of the mind-body relation.
- The idea that the whole of reality has both attributes of thought and attributes of physicality means that thought or mentality is found throughout nature
 - This view is known as Panpsychism

Spinoza

- ▶ This opposes Descartes' view that most of what exists does not have thought or mentality.
 - For Descartes the natural world is defined by the absence of thought – instead it is pure mechanism.
- ▶ But Spinoza believed mentality was a characteristic of the physical world – seen from a different viewpoint.
- ▶ He is not suggesting that everything (e.g., rocks & trees) has mentality in the same way as humans but they have mental qualities in different amounts or different ways.
- ▶ He points out that it is a misunderstanding to look for causality between the mind and the body – so stimulation in the brain does not cause mental states – this type of causal relationship can only happen between different things (as in Cartesian dualism).
- ▶ For Spinoza neither the mental nor the physical has priority over the other – both are true but different descriptions of the same thing.

Spinoza

- ▶ We can use the drawing of a curved line to illustrate the double aspect of one and the same thing:
 - From one viewpoint the curved line can be seen as convex
 - From another viewpoint it can be seen as concave
 - Nevertheless both aspects are part of the same line



Fechner

- ▶ Spinoza's idea of panpsychism was very influential in developing Fechner's idea of psychophysics.
- ▶ For Fechner, pansychism provided a solution to the mind-body problem.
- ▶ The problem of how the mind and body interact is based on the misconception of what the mind and body are.
- ▶ If we conceive of them as two attributes of the same substance then a new question arises:
 - How are these two attributes correlated with each other?
- ▶ According to Fechner: "Man leads an outward and inward life, one visible and perceptible to others, the other only perceptible to the self in thoughts and emotions".
 - The nature of this relationship can be established through scientific investigation.

Fechner

- ▶ This is what Psychophysics attempts to do.
- ▶ It is the mathematical measurement of stimulus and sensation intensity.
 - E.g., by determining the magnitude by which a stimulus must be increased for the person to notice a difference.
- ▶ Kant – psychology cannot be a true science because mental states are not mathematically definable
 - So can psychophysics make it definable and thus a science?
- ▶ Mental states were understood in terms of differing qualities, and so attempting to quantify them would not make sense.
 - But the sensations *red* and *taste of coffee* are qualitatively different
 - Both should be quantifiable in themselves
- ▶ First quantification of the mental
 - Major step in psychology becoming a quantifiable science
 - Meeting the criteria for scientific status

Müller

- ▶ The work of Spinoza also influenced Müller.
- ▶ Particularly for what became known as:
 - The Doctrine or law of **specific nerve energies**, which states that:
 - A nerve provides the same sensation regardless of how it is stimulated
 - Each sensory system has specific nerve qualities
 - E.g., hearing is qualitatively different to seeing not because of the stimulus but because of the nerves that perceive the stimuli.
- ▶ For Müller, we do not experience external things but the states of our body produced by those things.
- ▶ What we are aware of is the inner aspect of the physical changes formed in us by external objects.
- ▶ One of the most important findings in psychology and physiology.

Helmholtz

- ▶ The doctrine of specific nerve energies highly influenced the work of Helmholtz.
 - Specifically his work on sensory physiology.
- ▶ His theory of Trichromatic colour vision suggested that colour vision is underpinned by three different types of nerve, each of which responds preferentially to light of a different wavelength.
- ▶ As well as qualitative differences between sensations of vision and sound, for example, he believed there are qualitative differences between different visual sensations as well – such as different colours.
 - So, blue is not bigger than red – it is different in terms of its subjective quality.
 - For Helmholtz these qualitative differences could be accounted for by different nerves within the visual system.

Helmholtz

- ▶ As well as Spinoza, the ideas of Kant also influenced the physiological work of Müller & Helmholtz.
- ▶ Müller also believed in the idea that space and time are innate structures of the mind and rather than being experienced they are necessary for there to be any experience at all.
- ▶ Helmholtz had a different view: for him the structuring of experience was done by our senses.
 - But Kant's idea that we spontaneously structure our perceptions in terms of causal connections was important for Helmholtz because it bridged subjective sensations and the external world of objects.
 - Issue: How do we perceive anything outside ourselves?
 - E.g., when we hear something, we don't hear it in the ear (even though physical changes are taking place in our ear), we hear the events as taking place outside in the world.

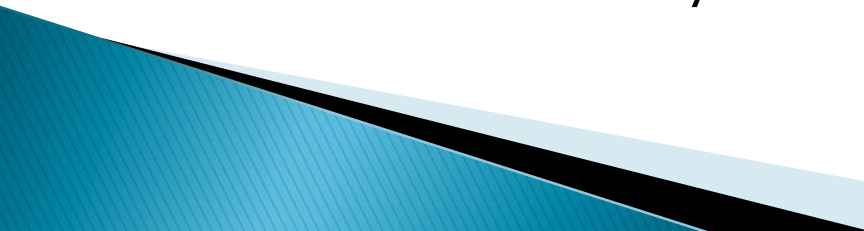
Helmholtz

- ▶ For Helmholtz, the leap from experience of internal sensations to experience of external objects can be made if we recognise that sensations are *signs* of the external objects that cause them.
- ▶ This idea has connections with the empiricism of Lock and Berkeley but the empiricist theory of signs involves Kantian foundations in the *a priori* idea of causality.
 - But for Helmholtz the *a priori* principle of causality (the innate knowledge that every event has a cause), meant that sensations were immediately interpreted as being events caused by something outside ourselves.
- ▶ To get from sensation to actual perception something else is needed:
 - **Unconscious inference:** On the basis of the sensations we receive we infer that there are objects outside of us and what the nature of the objects are.
 - This process is involuntary and happens without our awareness
 - The outcome of the process is what we experience consciously.

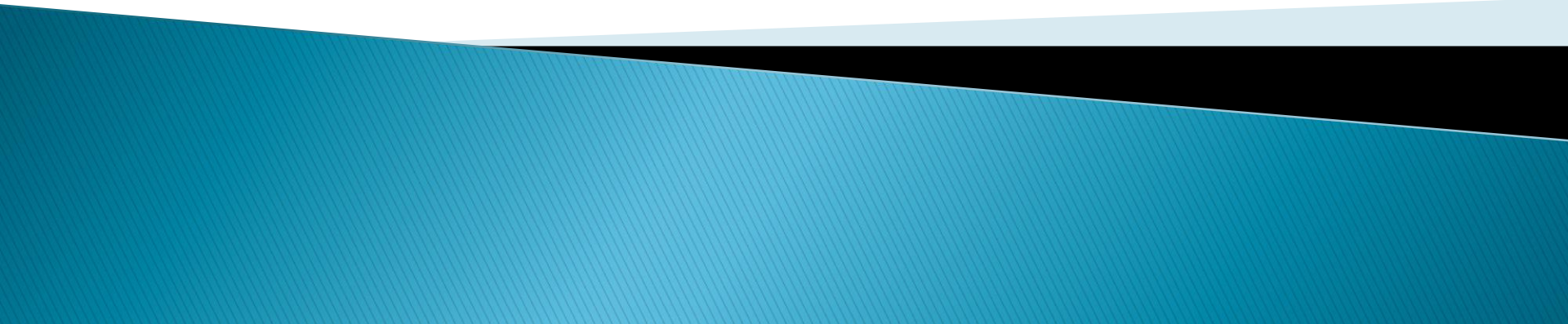
Spencer

- ▶ Evolution produces more sophisticated species over time
- ▶ ‘All organic development changes from homogeneity to heterogeneity’
 - Single event has multiple consequences – effects will naturally and automatically tend to be more differentiated and complex than their causes.
 - Through the operation of cause and effect the universe becomes more complex and differentiated over time.
- ▶ His views of consciousness was similar to the double–aspect view of Spinoza: nature had an outer and inner aspect – if we accept that the subjective mental world is the inner side of objective nervous–system activity, then as nervous systems themselves change/evolve/become more complex, so do mental states.
- ▶ Creatures that adapt to their surrounding are more likely to survive – creatures are shaped by their environment.
 - The same applies to mental states and degrees of consciousness.

Darwin

- ▶ Contributed to the idea of evolution by suggesting the process by which evolution occurs: Natural selection –
 - Not all members of a species are the same (there is variation). If there is competition between individuals for resources, some will be more successful than others in producing offspring. Those offspring will inherit the characteristics of their parents, and if they reproduce successfully the characteristics will continue to pass on
 - Known as **Descent with modification**.
 - Better explanation than Spencer's inheritance of acquired characteristics.
 - ▶ Interaction between organism and environment
 - ▶ Animals show intelligence and flexibility of behaviour
 - Supports Spinoza's view over Descartes'
 - This organic, as opposed to mechanistic approach to Psychology was to feature heavily in the work of future psychologists.
- 

Foundations of Experimental Psychology



Wilhelm Wundt

- ▶ Regarded as the 'Father' of experimental psychology
 - Produced the first Psychology textbook: Principles of physiological psychology (1874)
 - Shared a passion with other German scientists that all human nature, particularly the mind, could be studied scientifically.
 - First experimental psychology laboratory Leipzig (1879)
- ▶ Building upon Hume's idea of 'impressions' in a Kantian in approach
- ▶ Recognised that experience was not just the registration & association of sensations – instead there was active structuring processes behind our experiences:–
- ▶ 'Apperception' – the structuring of the basic elements of experience is not the result of outside influences acting passively on a person, but there is active interpretation by the person – experience is a volitional activity.
- ▶ The mind creatively constructs experience
 - A resulting mental state is over & above the elements that make it

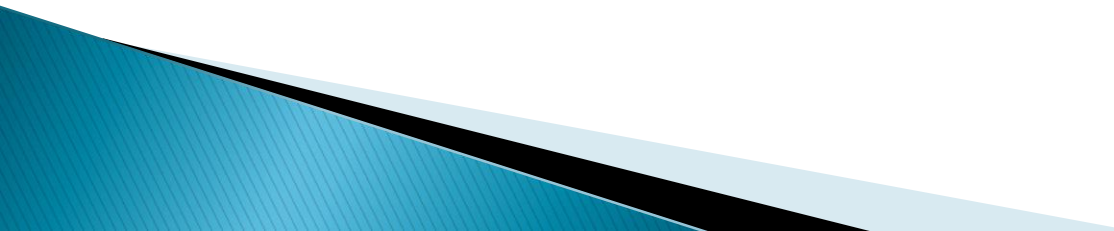
- ▶ The scientific revolution was underpinned by the distinction between primary and secondary qualities.
- ▶ Natural science – exploration of the primary qualities of the world
 - Things that exist in the real world
 - E.g., light waves
- ▶ Psychology – exploration of the secondary qualities of the world/subjective experience
 - Our experience of that world (actively constructed by us)
 - E.g., colour
- ▶ Natural science and psychology explore the same things, but from different perspectives.
 - Wundt: the aim of Psychology was to complement natural science.
 - He recognised that some physiological findings were of use to Psychology but he did not seek a physiological explanation for immediate experience.
 - His views of Psychology are known as anti-reductionist & anti-positivist

- ▶ Bacon's view of positivism (scientific method) is that it gives results but no underlying causes
 - WHY does something happen
- ▶ Wundt wanted to not only describe, but also give causal explanations to Psychological phenomena.
- ▶ He was committed to the idea of **Psychic causality**
 - Some psychological phenomena are causal/outcomes of other psychological phenomena.
 - E.g., our complex experience is the causal outcome of active and creative structuring processes.
- ▶ For Wundt, psychology was the science of immediate experience – so how should we go about measuring it?

▶ Controlled laboratory experiments

- They allowed for identifying both the elements of experience and the way in which they were structured by the subject.
- He was thought to conduct experimental research through:–
 - Introspection – but in actual fact he carried out very little of it
- Introspection – controlled subjective reports of self-observation.
 - It evolved from casual reflections to the systematic, reproducible self-observation (“Selbst-Beobachtung” of the Leipzig school (1879).
 - Observers would participate in reaction time experiments but would have to produce at least ten thousand introspective observations before their data was considered valid (Boring, 1953).
 - Wundt aimed to analyse the content of conscious experience, determine how the elements of consciousness are connected, and to devise a law that would explain those connections.
 - He made inferences about the nature of mental processes by looking at how changes in the stimuli caused changes in the verbal reports of the trained observers.
 - He was particularly interested in how basic sensory information gave rise to complex perceptions.

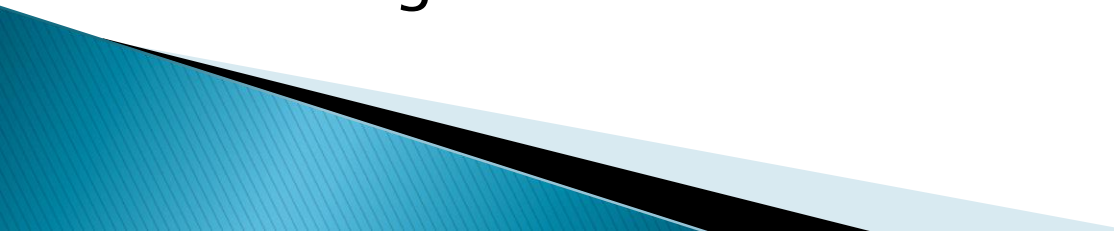
Issues with Introspection

- ▶ Wundt himself actually criticised introspection.
 - ▶ It was deemed too difficult to ask observers to report on sensations with data unmodified by experience.
 - ▶ The use of trained observers meant they may have been looking for specific things in their experiences.
 - ▶ Furthermore, there was often disagreement between observers.
 - ▶ There was also the element of retrospection – recalling an experience some time after it had occurred, which may have led to errors in the report.
- 

- ▶ Wundt and his colleagues performed over 100 studies in the first 20 years at the Leipzig laboratory.
- ▶ They began with studies on human vision, audition, and somatosensation (feeling and touch).
- ▶ Their later work focused on reaction time and the process involved in perceiving and then responding to a stimulus.
- ▶ Wundt also examined the nature of attention, emotional feeling, and word association.

Most of Wundt's work involved reaction-time trials

1. Time to press a button
 2. Time to press a button when given a decision to make
- ▶ $2 - 1 =$ time it takes to make a decision
 - ▶ Limited in what it could examine
 - Simple but not complex behaviours/thought processes

- ▶ But higher mental processes, such as language should be studied by psychologists.
 - ▶ So, Wundt called the study of cultural phenomenon: **Volkerpsychologie**:
 - The cultural influences that impact upon people's thought processes – Particularly language and thought
 - ▶ Needed to be considered at a societal level as well as in the laboratory – why?
 - When we express our thoughts through language – different languages have different conceptual resources that mould and somewhat determine the thoughts that can be expressed in them. Also, our thoughts structure language – How?
 - ▶ Requirement to have a variety of methods to explore phenomenon because not all aspects of mental life could be investigated in the lab.
- 

Edward Titchener

- ▶ Disagreed with Wundt on a number of issues
 - Titchner believed that complex psychological phenomena could be explored in laboratory conditions.
 - And that inference from reaction times was not scientific (instead it was metaphysical speculation).
 - Although he was a former student of Wundt, his philosophical orientation was that of empiricist like Locke & Hume.
 - This was one of the reasons why his views differed to that of Wundt.
- ▶ He was also highly influenced by the positivism of Mach
 - We give things inside us names but they are not 'things' and so this is just metaphysics
 - No such thing as a 'mental state'
- ▶ Mach's views had huge implications on the goals of science.
- ▶ The scientist's role is to describe the experience and the connections, not to provide an explanation that cannot be justified scientifically – known as economical description.

- ▶ A consequence of this was that the same elements should be used to describe all levels of a phenomena.
 - Basic events, higher-order mental events, and social events had to be describable in terms of the same basic constituent elements.
 - For Mach this elements were sensations.
- ▶ So, Titchener believed the goal of psychology was to break down complex psychological experiences to discover the basic elements of which they were composed.
- ▶ The psychologists role is to ascertain nature and number of mental states (but not to try to justify them or explain where they came from or how they work etc.)
 - Titchener's approach to psychology is called Structuralism – discover structural components of the mind much like earlier anatomists had explored the structure of the body
- ▶ The way this is achieved is through observation
 - The only person who can observe the mind is the owner of that mind: So introspection the only way to do this: the psychologist doesn't have to observe himself experiencing, he only has to observe experience.
 - This is not the how Psychologists nowadays conduct research!!
Introspection lacks rigour & is not properly scientific.
Instead we use objective measures.

- ▶ **Attention:** Shows clearly the differences between the approaches of Wundt & Titchener.
 - Wundt= attention is an active process of structuring experience and engaging with the environment. It has causal efficacy.
 - It is also accompanied by a “feeling of activity”.
 - Aspects of the active mind are experienced.
 - We cannot observe the workings of the process but know they are there.
 - Titchener= attention is a property of sensations: sensory clearness
 - A name we give to the fact that some sensations are clearer than others
 - He argued against those who believed attention was a mental activity.
 - Just because we feel activity doesn't mean there are mental processes lying behind these sensations.
 - Titchener goes further by suggesting that there is no such thing as a psychological subject being the causal agent or being the locus of any psychological phenomenon or processes.
- 

- ▶ For Titchener, positivistic structuralism was....
 - A world of bare sensation, devoid of value and meanings.
 - There was no psychological self/process that influenced the world
 - No causality or violation.
 - The basic elements of experience did not require explanation.
 - The elements are fundamental but meaningless

 - ▶ But for Wundt – experiences produce meaning and value

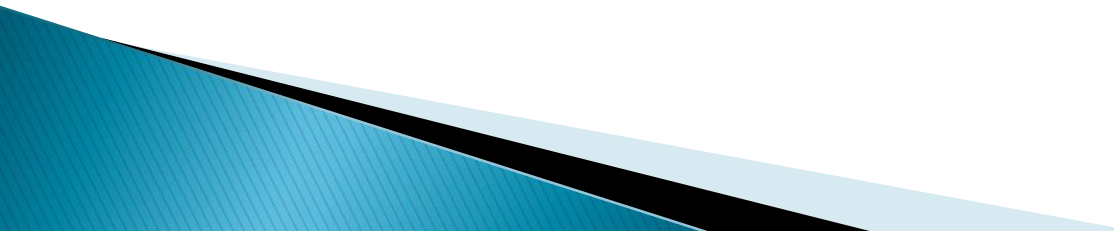
 - ▶ Titchener attempts to make psychology view the world through natural science, which studies experience without reference to the subject.
 - Beliefs, inferences, & values distort real experience.
 - ▶ Wundt argues psychology should complement natural science to explain humanity
 - Values, meaning, interpretation are important
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William James

- ▶ Believed the empiricists needed to take things further.
- ▶ Our mental life does not consist of discrete elements, but as an 'interconnected flux'
 - His central idea was that we have a 'Stream of consciousness'
 - Experience is inherently structured & does not come to us in parts
 - We break things into elements afterwards because we cannot take in all aspects at once.
 - His willingness to look at any type of experience led him to investigate areas such as altered state of consciousness or religious mysticism.
 - He was interested in the '*What*' and the '*Why*' of consciousness
- ▶ Consciousness allows us to make novel choices
 - 'Pragmatism' – ideas as 'rules for action'
 - 'Follow God's will' or 'Act rationally' are meaningless...
 - What does it mean to act rationally?
 - What are the actions that need to be taken?

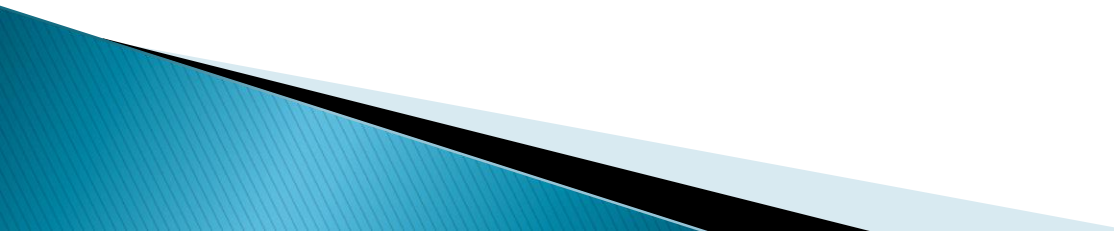
Where ideas come from do not matter – their consequences determine their worth

William James

- ▶ 'Destination of ideas'
 - Arguments about the source of our ideas are worthless.
 - Only its future practical consequences can tell us its value.
 - For James the job of the conscious mind and the reason it evolved was to enable the organism to foresee what the consequences might be.
 - When faced with a situation to which we do not have an habitual response, the conscious mind will help incline us to an action believed to have a positive consequence.
 - ▶ Biological purpose of consciousness
 - Promote the organism's ability to survive and flourish
 - ▶ Conscious experience
 - Continuous flow of feelings and thoughts that merge with others at times
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William James

- ▶ The transient parts of consciousness were what he called: The Fringe of consciousness
 - Things we are dimly aware of at any given moment.
 - Even when we are aware of a particular thing, we are simultaneously aware of other things.
 - Consciousness is a web of rich and constantly changing interconnection of ideas, thoughts, and feelings.
 - This is a good thing because if we were fully aware of everything then we would become overwhelmed.

 - ▶ Selectivity of consciousness
 - Focus of attention
 - Attention as the ability to focus on one thing amongst the 'blooming, buzzing confusion'
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Next week....

- ▶ Lecture: The Rise of Behaviourism.
 - ▶ Seminar: Essay Assignment Guidance
 - ▶ ESSENTIAL READING:
 - Chapter 16. Farrell, M. (2014). *Historical and philosophical foundations of psychology*. Cambridge: Cambridge University Press.
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