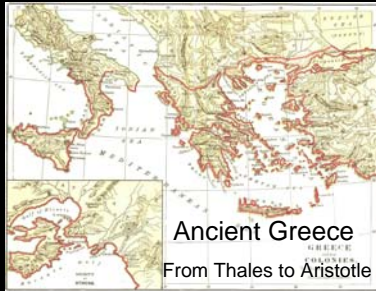


History of Psychology



Ways of studying the history of science/psychology



Looking at:

- (1) a succession of scientists / thinkers and their contribution;
- (2) the founding of laboratories and their intellectual traditions;
- (3) a collection of scientific concepts or ideas.



Concepts / Ideas – important!



- Science seems to be a changing collection of ideas;
- Concepts evolve over time;
- Individual thinkers make contributions to their development.

*** Little personal backgrounds, concentration on competing viewpoints

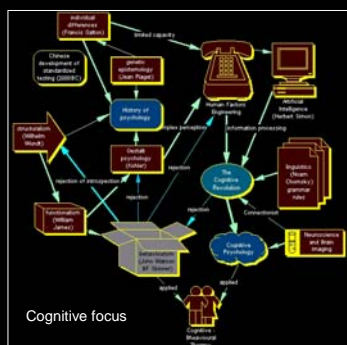


Psychology is a young science

- 1) a short history of technical concepts;
- 2) before the XIX century, psychological ideas were part of:
 - a) philosophy
 - b) biology
 - c) politics
- 3) the study of "human nature" influenced by intellectual and social currents.



A historian of psychology - typically selective



- standing in one of the traditions
- choosing some facts
- discussing some thinkers

Different histories of psychology would be written by:

A rationalist

- Rationalism – a philosophical doctrine: the truth is discovered by reason (introspection) and factual analysis;



An empiricist

- Empiricism – a philosophical doctrine: all human knowledge ultimately comes from the senses and from experience.



What kind of thinkers do you sympathize with?
What perspective do you prefer?

"The fox knows many things, but the hedgehog knows one big thing"

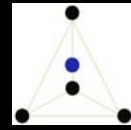
Reductionism – reductionists, like 'foxes', pursue many ends, sometimes contradictory, if at all related.



Holism – holists, like 'hedgehogs', relate everything to a single universal organizing principle.

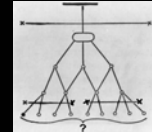
Capital-p Philosophers and Psychologists – or 'hedgehogs':

- system builders,
- unify their discipline under a single set of principles



Small-p philosophers and psychologists – or 'foxes':

- critically examine ideas,
- give instructive comments



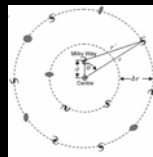
Science – "a set of beliefs held by scientists"

Two characteristic sets of beliefs:

Naturalism – explaining the world without reference to supernatural entities



Idealization – explaining events as outcomes of universal natural laws (describing only crucial factors, omitting less important ones)



While studying ideas held by a given philosopher or psychologist decide:

what tradition they belong to?

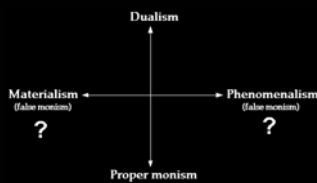
Rationalism and Empiricism explain the world without reference to god, but are quite different. Rationalists are not always Naturalists!



A Rationalist can be a Dualist!

Dualism - reality consists of two different parts (observable and unobservable) for example, the mental and physical reality.

Monism - the mind and matter are essentially the same.



A scientist must be a monist!

If you maintain dualism you have to argue that empirical evidence will never suffice to understand the mind and/or behaviour.



The first two weeks of the course

The story of psychology as it emerged from its roots in philosophy

Later on you will also follow how psychological thoughts emerged from science (biology, physiology, computational sciences).

Two major philosophical questions are particularly relevant to psychology:



- 1) How do human beings get to know the world?
 - epistemology - the theory of knowledge



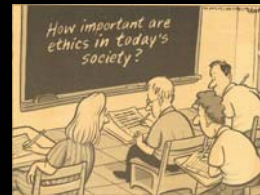
happiness is like a butterfly: the more you chase it, the more it will elude you. but if you turn your attention to other things, it will come and sit softly on your shoulder...

How should you get to know?
What should you know?
How should you be happy?

- 2) What are the sources of human happiness?
These enquiries have become the subject of applied psychology.

Psychology even now remains directly connected with philosophy,

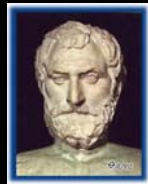
- asking questions such as:
- How do people behave?
 - How should they behave?



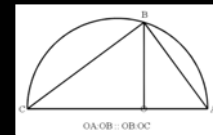
The ancient Greek philosophers advanced knowledge by using criticism.

Thales of Miletus (born about 640 B.C.)

- the first philosopher
- advised his students: "know yourself "
- thought of his ideas as a set of hypotheses to be improved
- he searched for a single element - *physis* - out of which all things are made – he was a 'physicist' – and concluded that the *physis* was water.



Thales' triangle?



Thales

- moved towards naturalistic explanations
- concluded that the world is within human understanding
- supposedly believed, though, that "every particle of the world is alive"

Heraclitus of Ephesus (540?- 480 B. C.)

Although called the "Obscure", he was amazingly smart

Belonged to no "school", nor founded one – "He was no man's disciple, but he declared that he 'inquired of himself', and learned everything from himself"

To understand, practice introspection!

- (1) Sense data are worthless, unless one has an proper understanding of one's true nature.
- (2) Understanding comes when one turns from the outward, ... and contemplates oneself.
- (3) One's true nature is not self-evident; only careful introspection will reveal this.
- (4) Reality [or Nature] loves to conceal itself" ("Nature loves to hide").



Heraclitus was controversial!

"Abundant learning does not form the mind"

One of the first to refer to *PSYCHE*



"Poor witnesses for people are eyes and ears if they [the people] have psyches that do not understand their [the senses] language." (DK22 B107).

According to Heraclitus *psyches* were made of one of the basic elements, most likely made of "fire"

- *Psyche* for Heraclitus seems to be a part of the physical chain of being.



He believed the *psyche* was a fully physiological entity.

The *psyche* was the source not only of life, but also of reason and rational control; that which interprets (or fails to) the "language" of the senses, and that which is lost in the face of desire.

Psyche has a logos (a principle of change) so "deep" that no one will ever discover it fully. So far, we have not, for sure.

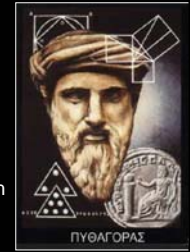
Pythagoras of Samos (c. 580-500 B.C.)

- a philosopher
- a mathematician
- a religious leader

(1) Most famous for the Pythagorean theorem

(2) Formulated in mathematical terms the first law of physics, expressing the harmonic ratios of vibrating strings of different lengths

(3) He saw the lawfulness of geometry as the foundation of the entire universe.



The first philosopher to draw a sharp distinction between soul and body.

- a soul can exist without a body
- the body is a corrupting prison

He looked for laws of nature, the form rather than the material.

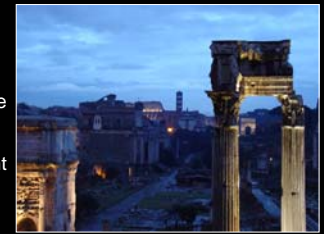
But, since these laws exist only in the mind as ideas, we call Pythagoras an idealist.

The Pythagoreans, "assumed a dualistic universe: one abstract, permanent, which can be understood by intellect, and the other empirical, changing, and known through the senses."

- Pythagoras' school lasted 300 years.

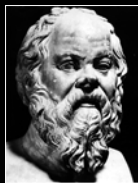
- It had a profound influence on all who followed.

- He 'formed many excellent men in Italy'.



Plato was influenced by Pythagoreans.

He also viewed the soul as a pure, knowing entity thrust into a corrupting body. He as well maintained that sense perception, depending on a body, is inherently untrustworthy.



Socrates (469-399 B.C.) – "a philosopher known for helping others deliver their ideas"

"Truth lies hidden in every person's mind."

- The goal of his life - the pursuit of Reason, but relied on intuition!

- Led his listeners to fuller, sharper definitions of their ideas – demonstrating that it is easier to give examples than to define.

A typical Socratic dialogue:



(1) A **problem is posed** - e.g., what virtue is, or justice, etc.

(2) **a** finding "**minor flaws**" in his companion's definition (e.g., giving examples, rather than defining); or

b if his companion does not know, finding tentative solutions - **the idea is innate** – its 'awakening' is needed;

(3) An agreement reached between the two ignorant men to pursue the truth seriously.

"Each of us must find it out for ourselves."



For Socrates, personal experience is important, but he is **not a relativist** (ain't no truth beyond personal opinion)



A method of **inductive definition** – analyze specific instances (of justice, truth, beauty, or love), then ask what all instances (e.g., of each virtue) had in common.

He sought to **find the essence** of each.

* Aristotle remarked, "To Socrates, being able to define justice seemed pretty much the same thing as being just, ..."

** For Socrates, admission of one's errors and the limits to one's understanding is a necessary prerequisite for learning.

Socrates - the first to use the word "psyche" as we do today:



- the seat of intelligence and character.

The human soul consists of three parts:

- (1) the **impulsive** or appetitive **element**,
- (2) the element of **thought or reason**, and between these two,
- (3) a **"mediator"** that can curb impulses and cravings and take orders from thought or reason.

The prototype for Freud's id, ego, and superego?

Socrates - the first to understand a need for personality typology

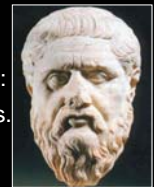
"To influence men's souls, you have to know what types of soul there are. Each type requires its own style of discourse.... The next person you try to persuade may require...reasons corresponding to his own special type. One must develop a keen ear...and cultivate a sense of what's appropriate to say...to become a persuasive person"



Plato (c. 427-337)

His writings fall into two distinct periods:

- (1) he reports the teachings of Socrates.
- (2) Is influenced by the Pythagoreans.



Plato's famous allegory - **people in a cave** can see only shadows of the realities above – of unchanging "pure ideas" – "forms" which perception can only approximate.

Plato accepted one kind of relativism:

- **sensations are relative to the state of the observer** (two men with different background, using different entrances perceive the room differently)



Plato also accepted the Heraclitean doctrine of flux:

- **Objects are constantly changing, thus cannot be known.**



Perception gives an imperfect, relativistic picture of the ever-changing world - not knowledge.

The path to accurate knowledge - **measurement and deductive reasoning.**

- divided the person into a material, **imperfect body** and a **mind or soul** which contained pure knowledge.

- all **knowledge is innate** and can be attained through introspectively searching one's inner experience;

- the rationally derived concept is the fundamental element of reality.

"The ideas of causality, of opposition, of beauty and of goodness are not products of the scientist's thinking; they are part of the reality that is gradually becoming known ..."

Plato's opinions on a variety of psychological topics:

Nature of the soul – divided into 3 parts:

- (1) the immortal and rational (in the head)
- (2) the spirited and courageous (in the chest)
- (3) passionate or appetitive (in the belly)



The rational soul controls the desires of the other two (compare - Freud's 'primacy of the reason' over instinctual drives)

Plato – a mind-body dualist – the soul is incarnated in the body which it can operate like a puppet



Early views on MOTIVATION:

Seeking pleasure and avoiding pain – obvious human drives – are things of the body

All sensations, including pleasure, are evil.

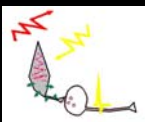
Later views:

- the aesthetic joy found in beauty is healthy
- purely intellectual life is too limited
- stream of desires can be channeled into any part of the soul, into pursuit of physical pleasure, honor, knowledge or virtue (very Freudian!)

Our drives can motivate the pursuit of transitory pleasures or a world of enduring, unchanging "pure ideas" or "forms"

Vision:

Our eyes throw visual rays which strike objects (and come back?)



Learning:

The great nativist – all knowledge is innate; revived through dialectic or critical reasoning, and contemplation



Perceptual input can arouse and develop innate cognitive mechanisms (compare Chomsky)

The basis of the doctrine of associationism – objects remind us of the Forms because they are similar or frequently appear together in our experience.

Development and Education

The soul is reincarnated somewhere in the phylogenetic scale.



When thrust into a body – full of animal sensations and desires – the soul is confused and must adapt – explains why knowledge is not present in infants.

Education - to help the rational soul gain control of the body and other parts of the soul.

Three phases of education: (1) infants soothed and rocked to master inner chaos; (2) elementary education – gymnastics, rhetoric and geometry to master external world; (3) higher, rigorous education to produce society rulers

Summary of Plato's 'world' – metaphor of the line

	Objects	States of mind
Intelligible World (of abstract Knowledge)	<p>The God</p> <hr/> <p>Forms</p> <hr/> <p>Mathematical objects</p>	<p>Intelligence or Knowledge</p> <hr/> <p>Thinking (active knowledge)</p>
World of appearances (opinion)	<p>Visible Things</p> <hr/> <p>Images</p>	<p>Belief (by looking at objects)</p> <hr/> <p>Imagining (lowest level)</p>



ARISTOTLE (384-322 B.C.)

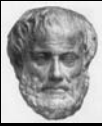
THE GREAT NATURALIST

The first professor

- prosaic treatises, systematic 'review of the literature'
- guided by order, method, syllogistic logic

A scientist:

- the reality of the sensible world
- the worth of sense perception
- but mathematics useless?

Epistemology – theory of knowledge 

- rejected the theory of the forms
- the primary existence – things perceived with senses
- from experience we abstract the essence of classes (species)

Diagram: A circle labeled 'sensations' has an arrow pointing to a square labeled 'MIND' containing '???' which has an arrow pointing to a circle labeled 'Knowledge Of Species'.



or universals:

- (1) not the product of the mind
- (2) not useful labels
- (3) exist as the essence of real species

Psychology – an empirical science, a part of biology

Scientific explanation: **Four Natural Causes**


- (1) **Material** – the matter
- (2) **Efficient** – source of change
- (3) **Final** – the purpose of change
- (4) **Formal** – the essence, what makes it what it is

Potentiality and Actuality  → 


Teleology – purpose in nature explains the qualitative change


The Natural Scale

Unformed matter → pure potentiality
objects → God (pure actuality)

(Aristotle's God – Unmoved Mover) 

But! Aristotle - as a naturalist - placed humans at the top of a Natural Scale of intelligence, right above the ...?

Number 2 

Number 1 

Definition and types of soul

Soul - the form (a formal cause?), essence, actuality
- inseparable from the body, except for?




Dual aspect theory
One material body – two aspects – physiological and mental

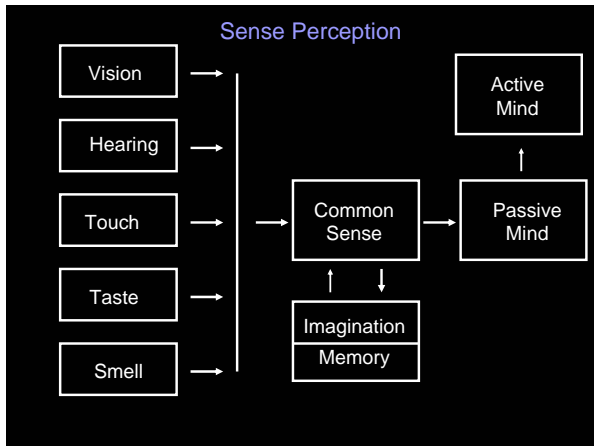
NOT DUALISM, NOT REDUCTIONISM

The first functional approach:
The powers of the soul: nutrition, movement, reason


Each creature is defined by its soul

Levels of soul and the Natural scale


Nutritive soul		Nutrition, reproduction
Nutritive soul Sensitive soul		sensation, pleasure, pain, desire
Nutritive soul Sensitive soul Rational soul		The ability to think




MIND - not a personal soul
 - pure thought
 - common to humans
 - immortal



Imagination
 - imagination enables thought
 - imagination – persistence of the percept




Memory
 - a set of images of past experience



Simple memory – RECOGNITION
 Memory search – RECOLLECTION


Memory - organized with **associations**
 (1) similarity, (2) contiguity, (3) contrast
 (and perhaps causality)




St. Thomas Aquinas
 1224-1274

Similarly to many Scholastics in the Middle Ages, he tried to reconcile Christianity with ancient philosophy (in this case Aristotelian). He returned to the idea that humans were separate from other creatures.



Summary



Eminent philosophers of the classical period of Greece:
 Heraclitus, Pythagoras, Socrates, Plato, Aristotle



Middle Ages
 St. Thomas Aquinas

Newton, Descartes, Locke
 Berkeley, Hume, Kant



Renaissance - achievements in art and politics but none in philosophy and science.

One exception:



Nicolas Copernicus (1473-1543) - the Polish born founder of modern astronomy



The earth rotated on its axis once daily and traveled around the sun once yearly.

Copernicus' theories might lead men to think that they are simply part of nature.



Francis Bacon (1561-1626) – the primacy of experience and reason over dogma

- investigate nature in a naturalistic, mechanistic, and an inductive way.
- collect facts unguided by any biasing hypothesis, and only then draw some simple generalizations.

Bacon foreshadows the modern world, which starts with:

- the scientific and philosophical revolution, and ends with
- two political revolutions

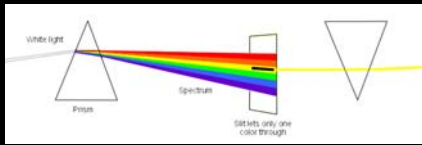


Isaac Newton (1642-1727) - the mechanical nature of earthly phenomena

Laws of motion expressed:

- (1) in **mathematical** terms,
- (2) as **abstract** relationships.

Work on colour vision



Newton first to indicate:

- (1) The rays are not coloured
- (2) Produce a sensation of colour in the observer



A basis for a distinction between:

The stimulus → Subjective experience

Another epistemological distinction:

Primary qualities – size, weight, motion

Secondary qualities – color, texture, smell, taste, sound

COLOUR – a property of visual system's response to light waves



Psychology

The study of consciousness

The study of behaviour

Secondary qualities
e.g., colour vision

Primary qualities
e.g., motion



René Descartes (1596-1650)

- reformulation of rationalism,
- mechanical concept of the world
- dualist concept of humans.

Emphasis on REASON – “the way to truth”

His method:

- (1) **Doubt systematically until you find self-evident truths**

He could not doubt his existence as a self-conscious thinking being

Doubting is an act of thinking - '**Cogito ergo sum**'

- (2) **Deduct from intuitively obvious truths**

Unlike Plato, Descartes does not condemn the senses.

- 1) Collect all observations relevant to a question, but
- 2) Facts are of little value until organized by reason.

Descartes' influence – Introspective Rationalist Tradition

- Accepting only self-evident truths
- 'observing in the context of a theory'
- introspection as a tool – both for rationalists and empiricists

Nativism

- Clear and distinct ideas immediately known to us come from predispositions of our souls.
- Not present at birth, but are like inherited diseases which gradually develop, or develop later in life.

Descartes' view of the world:



- a complex machine
- obeying deterministic, mathematical laws
- in the world, there is nothing but extended matter (e.g., no colours, no tastes, no demons).

God created a perfect machine and set it running (a claim similar to that by Aristotle).

Human reason can understand the natural laws and use them to its advantage.

Views on consciousness:

Dualism of mind and body

Different entities – body (physical), the mind (non-physical) – but they interact.



The mind

- uses the senses
- directs actions of the body.

The body is a machine (mechanical accounts of how sensation and action occur)

The body and mind interact through the pineal gland, the seat of the mind.

Descartes

- Mechanical views on memory and imagination – appear to be mental but they are faculties of the body (can be explained as bodily functions)
- the first to suggest and compare human and animal minds
 - (a) animals - mechanical automata lacking self-conscious souls
 - (b) human – possess language and rational thoughts

Descartes is a paradoxical figure:

A **Rationalist** (reason vs. perception, innate ideas – experience, truth vs. relativism) **but a precursor of empiricism and behaviourism.**

John Locke (1632-1704)

Brought an empirical spin to philosophy

- (1) Interested in how the human mind really works
- (2) what the sources of its ideas and limitations to human knowledge

His epistemology is a 'psychology':

- the mind knows its ideas,
- ideas come from experience,
- experience can be of two types: about external objects and internal operations.



The Empiricist Principle:

All knowledge is derived from experience, and experience alone.

The mind is *Tabula Rasa*

But not a radical empiricism

- two types of experience: (1) sensation of external objects and (2) reflection on the working of our mind.
- the dispositions or powers of thinking, memory, and perception are all innate.

Descartes believed in innate ideas

Locke believes in innate mental abilities:

- language is an innate, human, species-specific ability;
- much of personality;

The mind has mechanisms to convert experience into organized knowledge:

Experience → simple ideas → complex ideas → knowledge

Knowledge – inspection of ideas, looking at whether or not consistent, deduction from self-evident propositions

Locke's ambiguity:

Two possible interpretations of a concept of "idea"

- (1) Ideas are mental objects – refer to mental pictures (Berkeley)
- (2) Ideas are mental act (of 'perception') - related to the world

Two major academic psychologies:

- 1) **Titchener** - sensations were the basic constituents of consciousness, the elementary content; hence **the Psychology of Content**. (This account follows Berkeley.)
- 2) **Brentano** was a spokesman for **the Psychology of Act** - any mental event was an act referring to something in the outside world.



George Berkeley (1685-1753)

Mind, but No Matter

- refutation of skepticism (philosophy)
- refutation of Newtonian materialism

Agreement with Locke

- our knowledge is about ideas rooted in sensation
- ideas are mental objects, not acts

Can we be sure that ideas correspond to the 'real' material objects?

Is matter something apart from perception?



We know that things exist because we sense it!

Do they exist if we leave the room?

Berkeley's motto - "Esse est percipi": to exist is to be perceived. There is no permanent material reality apart from our perceptions.

How do ideas correspond to real world? Not a valid question! Because there are no 'real objects'

God - the omniscient perceiver. Things continue to exist because God always sees them.

Berkeley is an idealist – there is no matter and only ideas are real.

Arguments to support his view:

- a persuasive empiricist account of visual perception of depth (detailed, and convincing, widely accepted until the XX century)

The problem of distance perception:

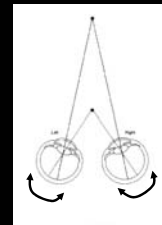
We see 3D objects, but

- all we have are 2D retinal images of objects (no depth?)



How does one perceive three dimensions when all we have are 2D retinal images?

There are cues to distance!



There is a regular association between an object distance and how the eyes verge to keep the object in the central vision.

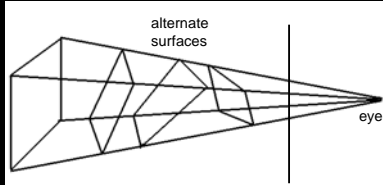
So far uncontroversial claims, but:

He makes **the empiricist claim** that the association between eye position and the perceived distance must be learned.

Berkeley - Depth perception must be learned.

The claim countered by Kant who asserted depth perception to be innate.

The real force of Berkeley's arguments - **generalization to all visual experience.**



The same retinal images, they may look as if the surfaces were the same distance away, and had the same shape

Berkeley – summary:

- perception is just a **collection of sensations**
- permanence of objects - collections of sensations **regularly associated**
- believe in **matter** is a **learned inference**
- what is not directly perceived is a metaphysical fiction

Berkeley appeals to introspection, and describes experience without inferences

Titchener's structuralism
Report sensations, the building blocks of perception, learning to associate stimuli into complex ideas

Rejection by behaviourism

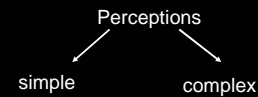
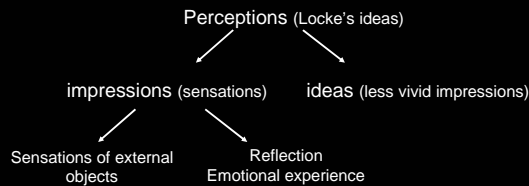
David Hume (1711-1776)

- psychology - the foundation for other sciences

- habit over reason



Categorization of the content of the mind



Impression can be:

- a **simple**, single sensation (e.g., a blue spot of ink), or
- **complex** (based on many simple sensations at once).

Simple ideas - copies of simple impressions

Complex ideas are their aggregates.

Complex ideas may not correspond to complex impression.



Priority to impressions over ideas:

- 1) Impressions bring us directly in touch with reality;
- 2) ideas may be false, corresponding to nothing.

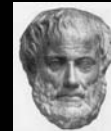
Therefore, all **meaningful ideas** must be **reducible** to something observable

The doctrine of the association of ideas

Three principles of connections among ideas:

- 1) **Resemblance**,
- 2) **Contiguity** in time or place,
- 3) **Cause-and-Effect**.

Resemblance



Contiguity in time or place



Cause-and-Effect - father and son

These are the only links that bind parts of the universe together and connect us with a person or object.

The analysis of Cause and Effect

From cause and effect relationship we infer that the world exists: the world acts on the senses, we perceive it.



But,

Where does the knowledge of causation come from?

- (1) We never directly perceive causes, but rather a regular conjoining of two events.
- (2) No rational argument can be produced to prove causation.
- (3) Belief in causes must be learned through experience.

The cause-and-effect cannot be a basic principle of association because it can be reduced to something else- contiguity and the feeling of necessity.

The argument generalized to all generalizations

"All swans are white" - based on a number of observations, we assume that future swans will be white (drawing a conclusion).

Such generalization cannot be given rational justification, because they are based on experience, not reason.

Why do we make generalizations, then?

It is because of the principle of custom or habit. All inferences from experience are effects of custom, not of reasoning.

Hume was only interested in how we reach causal and inductive conclusions.

He was not interested in their validity.

Hume discovered that reason is not involved.

The "mechanical tendency" to make generalizations is present at birth, is innate, and we are ignorant that it operates.

Animals also learn habits. Can we learn something from observing them?

Hume stressed the similarities of the man to animals and implied the value of a comparative approach to human and animal mind.

Hume - moderate skeptic:

- accepts the limits of reason,
- values animal nature, and
- knows that general conclusions may be false.

His skepticism is practical and useful:

- (1) does not doubt accumulated wisdom of experience, and
- (2) preaches toleration and provides founding for the other sciences.

Hume's apparent skepticisms roused an important response, that of Immanuel Kant.



Immanuel Kant (1724-1804)

- Rejection of Hume's psychological analysis of human knowledge.
- Attempt to prove the validity of human knowledge.

Kant's "second Copernican revolution":

- concepts are not derived from events in the outside world
- the concepts that we have in fact shape our experience.

A person 'constructs' his or her experience!

We have knowledge of phenomena (appearances) - objects found in experience.

But experience is organized by the nature of human perception and thinking.

Everything in our experience seems to have a cause because belief in causation is present in human thinking.

We impose cause and effect relationships on the world.

Time and space are preconditions of our sensations

Together with concepts of causality and existence they structure how we perceive the world.

According to Kant, objects conform themselves to our understanding.



Every object seems red. The person assumes "all objects are red", even though it is not true.

But the perceiver (the glasses) impose redness on all objects of knowledge, and for the wearer it is phenomenally true to say that "Everything is red".

To sum up:

The mind is not a passive recipient of object qualities. The mind actively structures experience into an organized shape. If innate principles structure experience, then knowledge of phenomena is necessarily true.

From a modern perspective, these innate concepts – if they exist – are merely evolutionary 'accidents'.

Thus the major difference between Kant and others is really the amount and nature of innate equipment humans come up with.

The verdict of history has been mixed, so far.

For Kant, **psychology cannot be a science.**

Every science has two parts, according to Kant:

- 1) **empirical**
- 2) **rational** (its foundations).

Assumptions of physics, according to Kant, were necessarily true of human experience.

But **rational psychology seems to be an illusion.** The object of rational psychology would be a thinking substance, the soul. But **the soul is pure thinking**, it has no content.

There can be no science without a subject matter. We do not experience the soul directly, therefore there cannot be science of soul.

Kant believed in **anthropology** (study of humans), which in fact resembles psychology.

It studied character, appetite, etc. (but was not a cross-cultural study of societies).

Physiological anthropology studied the effects of the body on the mind.

Pragmatic anthropology studied the person as a morally free agent, and its goal was to improve human behaviour.

Some topics: insanity, the nature of women, "ideas that we have without being aware of them".

For Kant, **consciousness** seems to be like a map with only few places illuminated.

This view that consciousness is like "a field with clear and obscure areas" is similar to Wundt's.

Wundt was able to show that a scientific empirical psychology is possible without a rational companion.

But he still emphasized that apperception (mental assimilation) gives unity to conscious experience.

Kant is often viewed as **the greatest thinker since Plato.** His views affected psychology directly (see Wundt) and indirectly (rejection by behaviourism).