

British Empiricism

an entry point: Molyneux's Problem

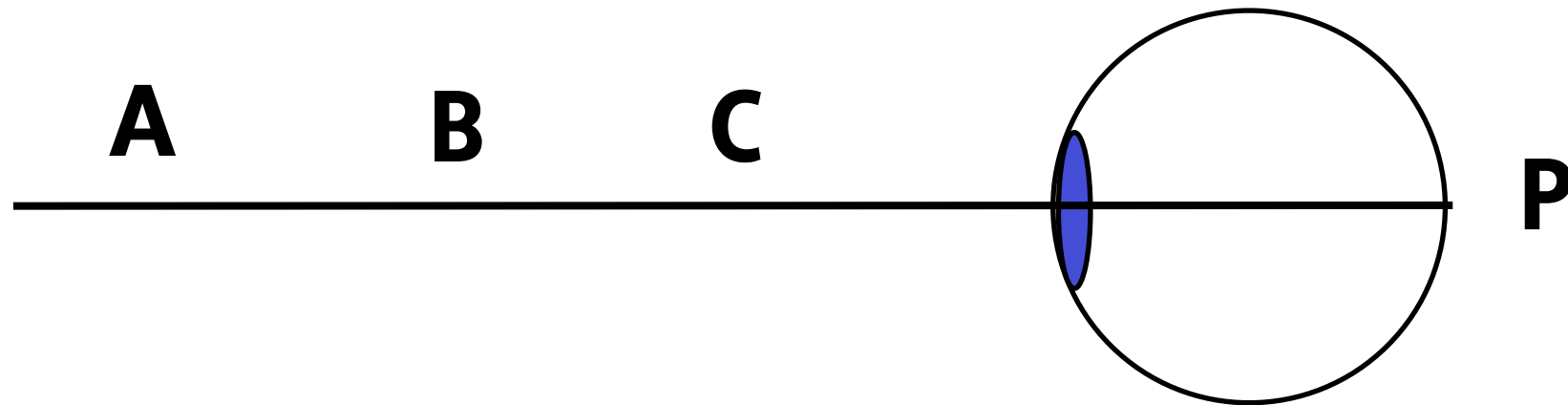
A Man, being born blind, and having a Globe and a Cube, nigh of the same bignes, Committed into his Hands, and being taught or Told, which is Called the Globe, and which the Cube, so as easily to distinguish them by his Touch or Feeling; Then both being taken from Him, and Laid on a Table, Let us Suppose his Sight Restored to Him; Whether he Could, by his Sight, and before he touch them, know which is the Globe and which the Cube? Or Whether he Could know by his Sight, before he stretch'd out his Hand, whether he Could not Reach them, tho they were Removed 20 or 1000 feet from Him?

If the Learned and Ingenious Author of the Forementioned Treatise think this Problem Worth his Consideration and Answer, He may at any time Direct it to One that Much Esteems him, and is,

His Humble Servant
William Molyneux
High Ormonds Gate in Dublin. Ireland

or simply, can a blind man, sight restored, see?

“For distance of it self, is not to be perceived; for ’tis a line (or a length) presented to our eye with its end toward us, which must therefore be only a point, and that is invisible.”



**a question of perception and a thought problem
revisiting an old question....**

Malebranche (1678): What would be the consequence of removing God from the account of perception? Then, it must be supposed that the perception of any ordinary scene involves **infinite (exact) calculations at an instant based on infinite knowledge.**

alternative...

British Empiricism

Acceptance of Descartes position of importance of material body, but argued against innate faculties and primacy of reason

All we can know about ourselves and the world around us is what we experience

"Tabula rasa"

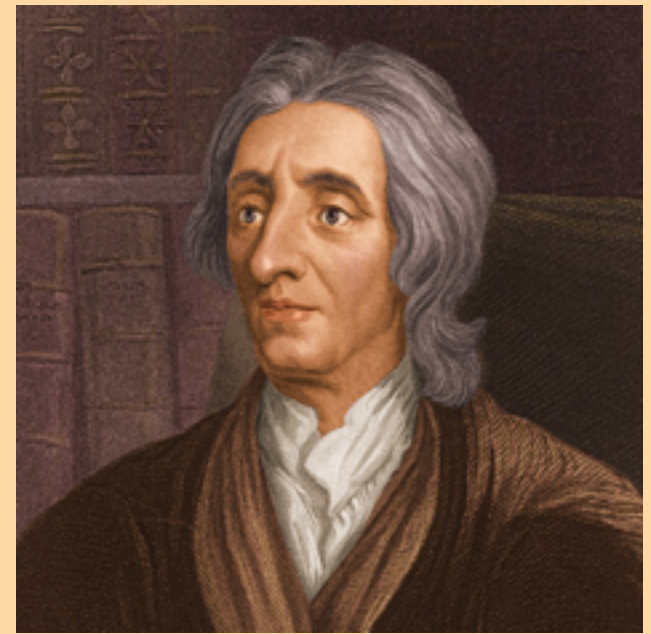
Ideas (mental image or content) come from experience of senses and reflection

passive v. active ideas



John Locke (1632-1704)

Whatsoever the mind perceives in itself, or is the immediate object of perception, thought, or understanding, that I call idea...



sensation v. perception, thinking, doubting, believing, reasoning, knowing, willing

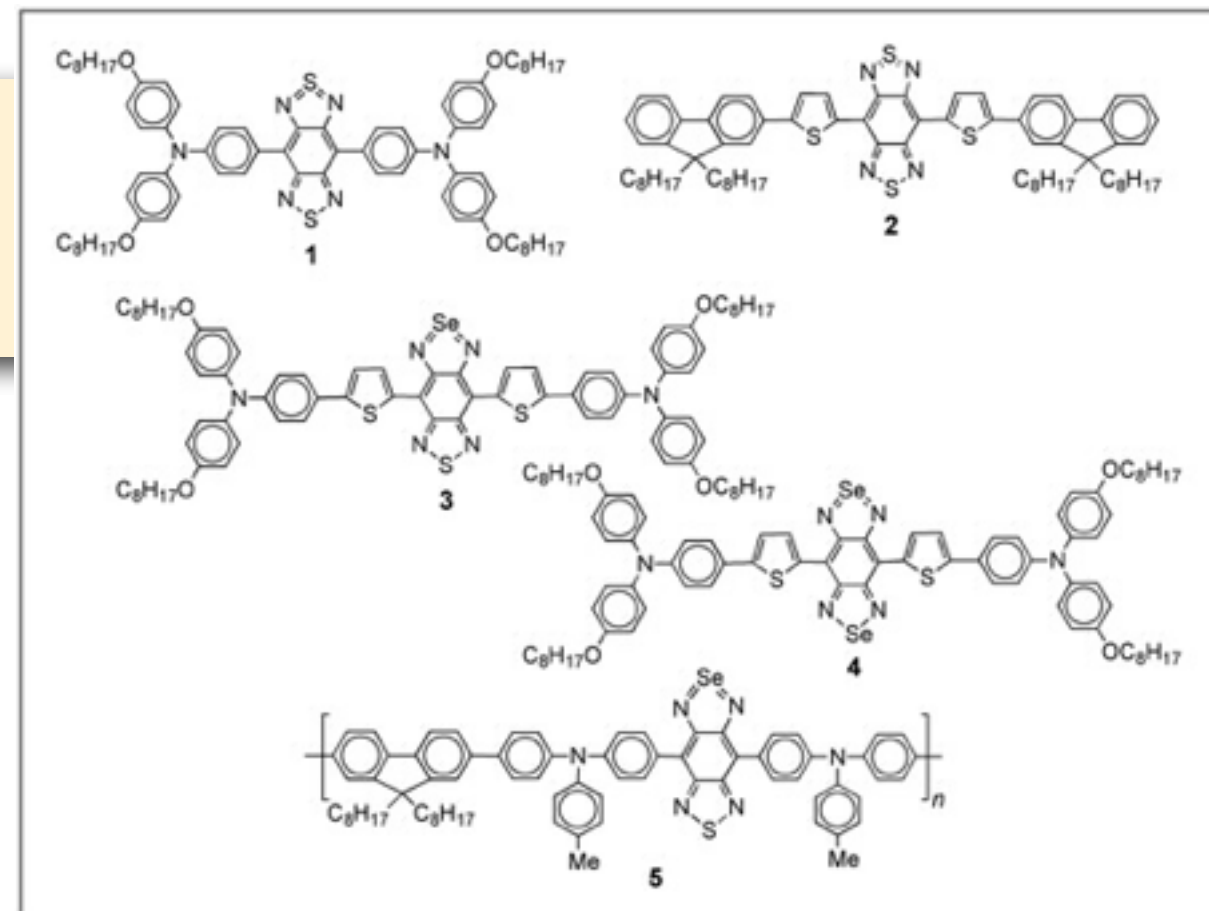
ideas in the mind can be actively transformed into an almost infinite variety of other ideas

Elemental ideas can combine to create entirely new ideas, with properties that are non-reducible to their basic parts

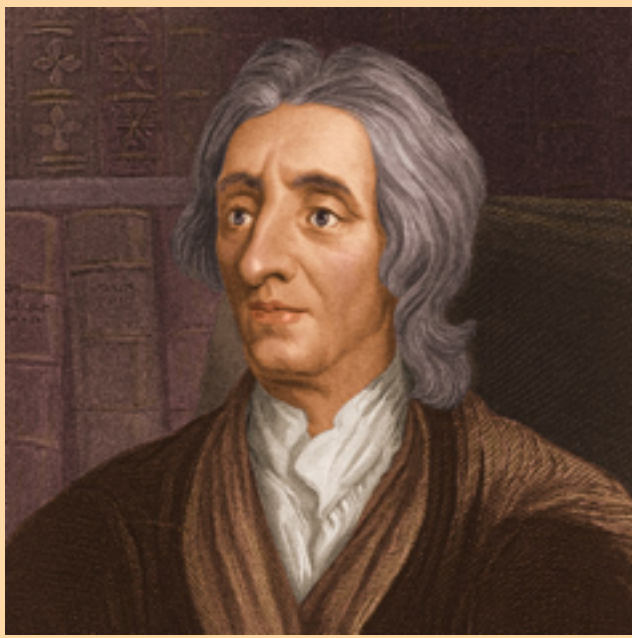
be careful... just a description

simple v. complex ideas and analogues in thermodynamics

scratch an empiricist...



ideas heavily influenced by contemporary findings in physics and chemistry



... and the power to produce any ideas in our mind, I call quality of the [object] wherein that power is."

an objects' **quality** is its power to produce an **idea**

primary & secondary

"both primary and secondary refer to characteristics of the physical world... difference in type of experience caused"

primary: create ideas that **necessarily** correspond to actual physical attributes (a tennis ball's shape)

secondary: create ideas that **do not necessarily** correspond to actual physical attributes (a tennis ball's color)

contrast Galileo (secondary qualities have no physical counterparts)

qualities... a different approach

there are no primary qualities (as defined by Galileo)!!!

opposed materialism and mechanism (for religious reasons)

idealism — "*esse est percipi*"

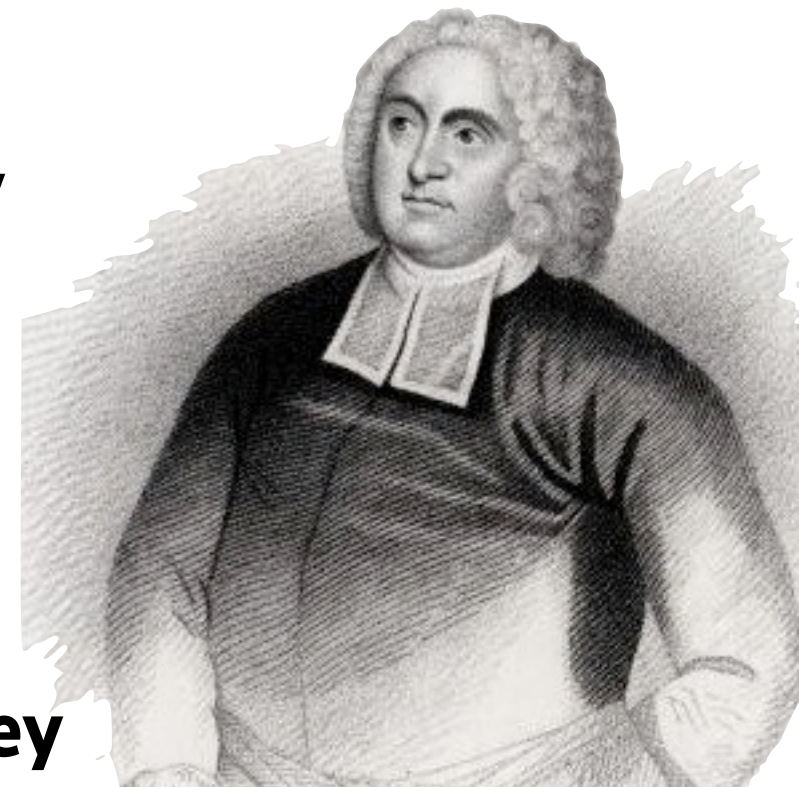
external existence? solipsism?

No. every mind tuned into same mental reality

God's perception creates external reality

natural laws = ideas of God

George Berkeley



Berkeley v. Locke

Correspondence v. Coherence Theories of Truth

Locke: show that ideas (secondary qualities) **correspond** to real things in the world and are identified

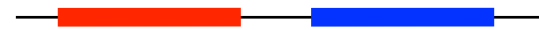
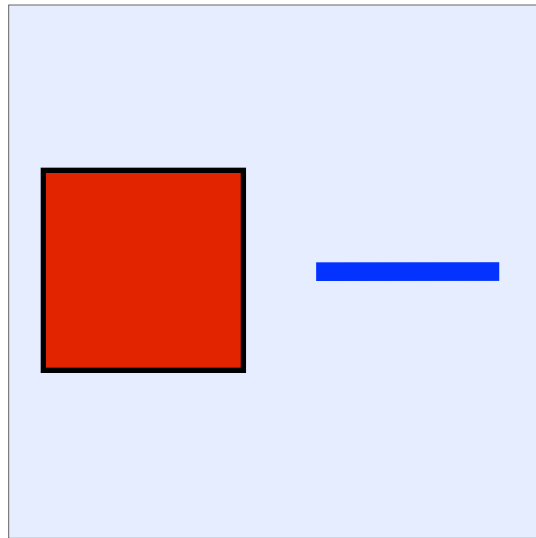
Berkeley: ideas can only refer to other ideas. Those that are **coherent** with others are true (self-confirming)

associationism

Learning and ideas rooted in associations: each sense provides separate idea. Through experience we learn to associate ideas with objects and with one another.

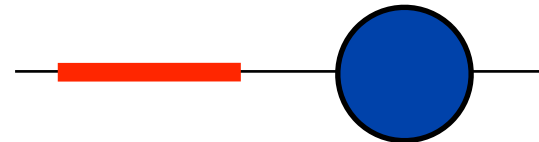
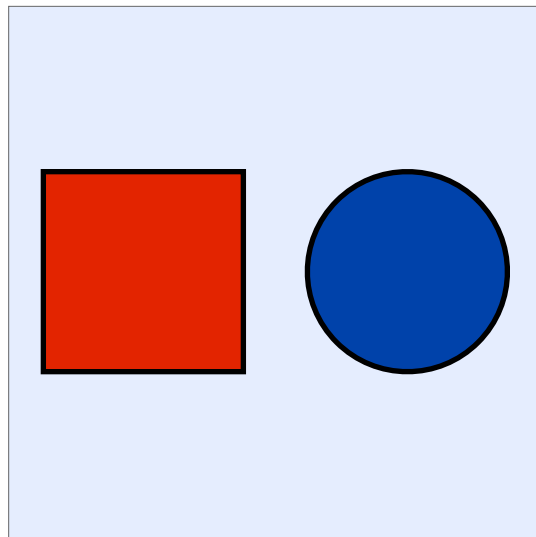
Berkeley's hypothesis

part 1: a story and a conceit.



Flatlanders only know each other by touch; visually, either a point or a line

Spacelander tries to convince Flatlander of 3rd dimension

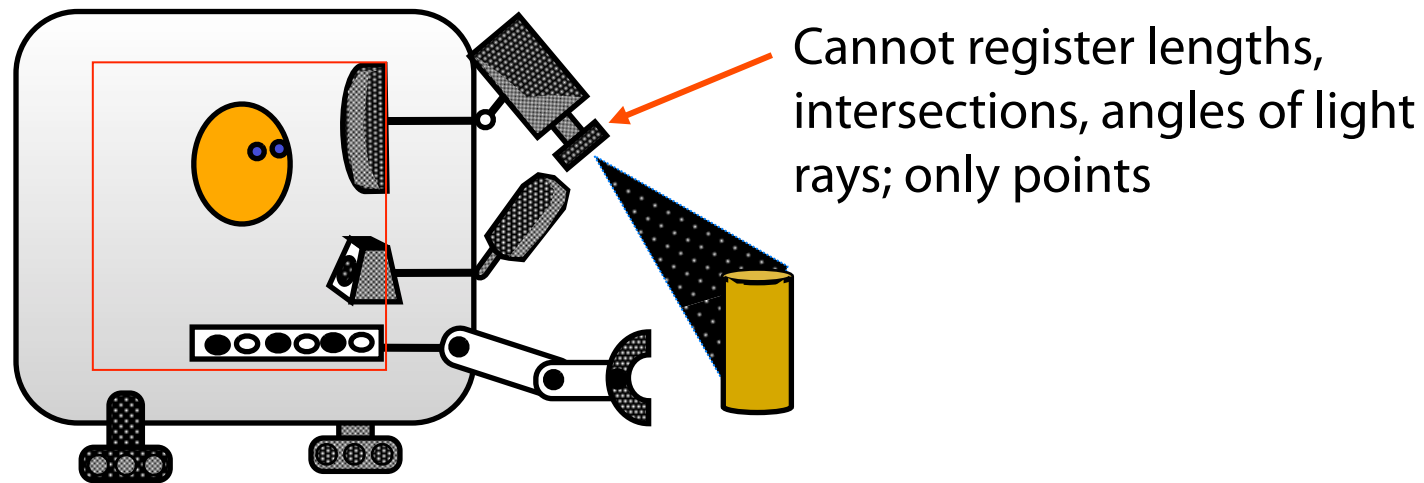


Spacelander uses a "miracle" not argument: lifts Flatlander into 3rd dimension

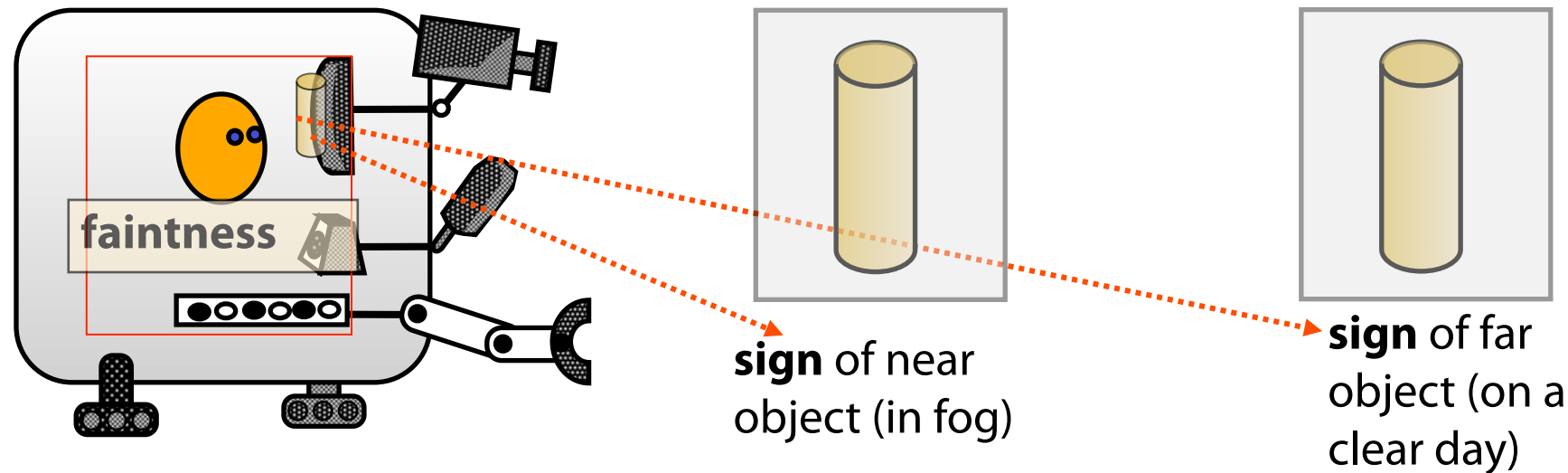
Moral: If visual experience is limited to two dimensions, then **we should expect no three-dimensional visual experience originating from this source**

Berkeley's hypothesis

pt. Deux: answering Molyneux's problem



Berkeley's Implicit Premise:
Mechanical contact (touch) is incorrigible and revealing of the world



in action

Visual spatial perception is a matter of **understanding visual signs**, not working out geometric problems.

note: return here for Helmholtz

the man in the inner room

Locke's Perspective: Representational Realism

**Reason, understanding applied
to 2nd grade → knowledge
(complex ideas)**

there is a world (typically the material world) that exists independently of whether or not any conscious mind experiences it

combines

3rd grade

1st grade

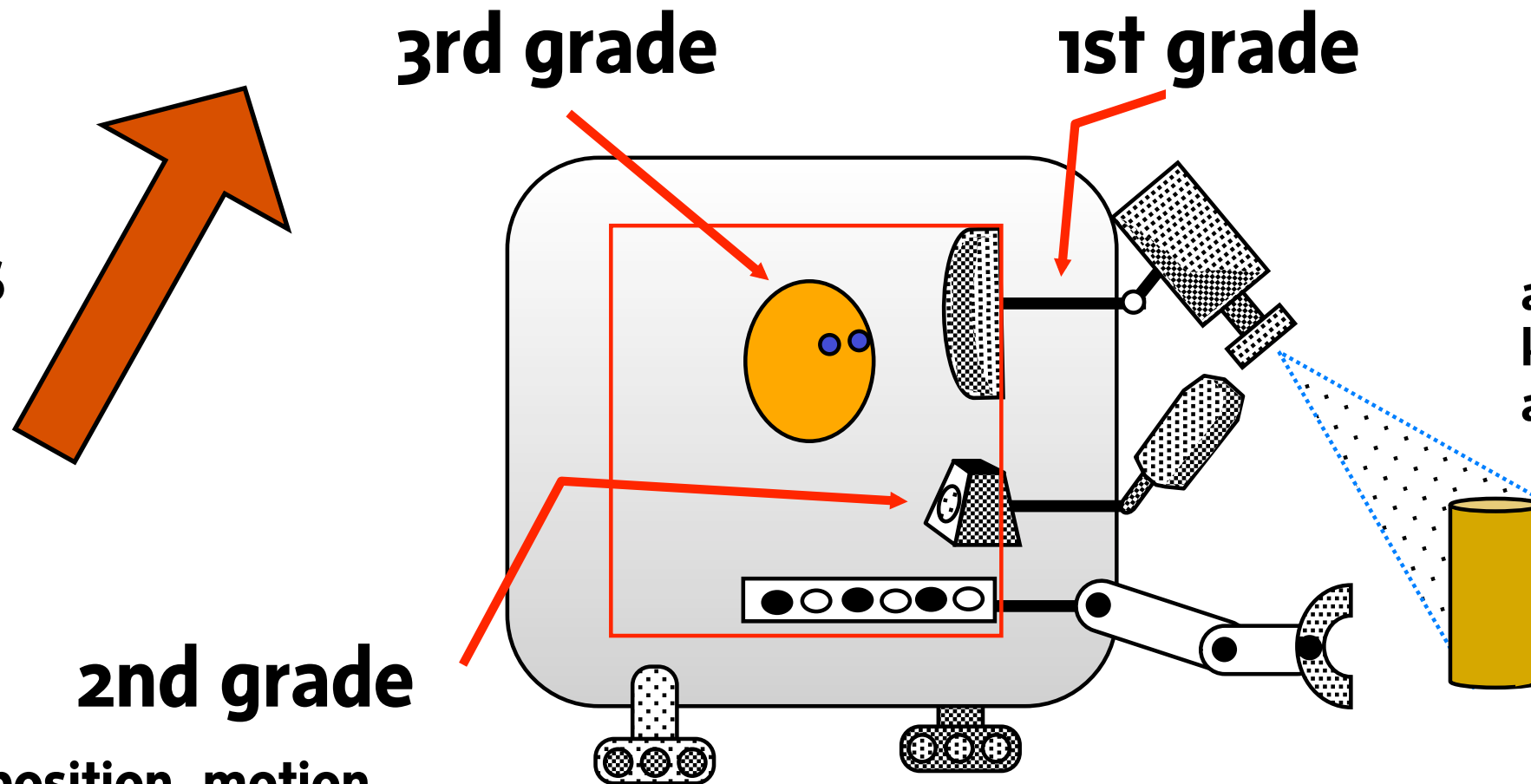
2nd grade

**Form, size, position, motion,
solidity—of world.**

Color, lightness—of screen

Simple ideas (Descartes *corporeal*)

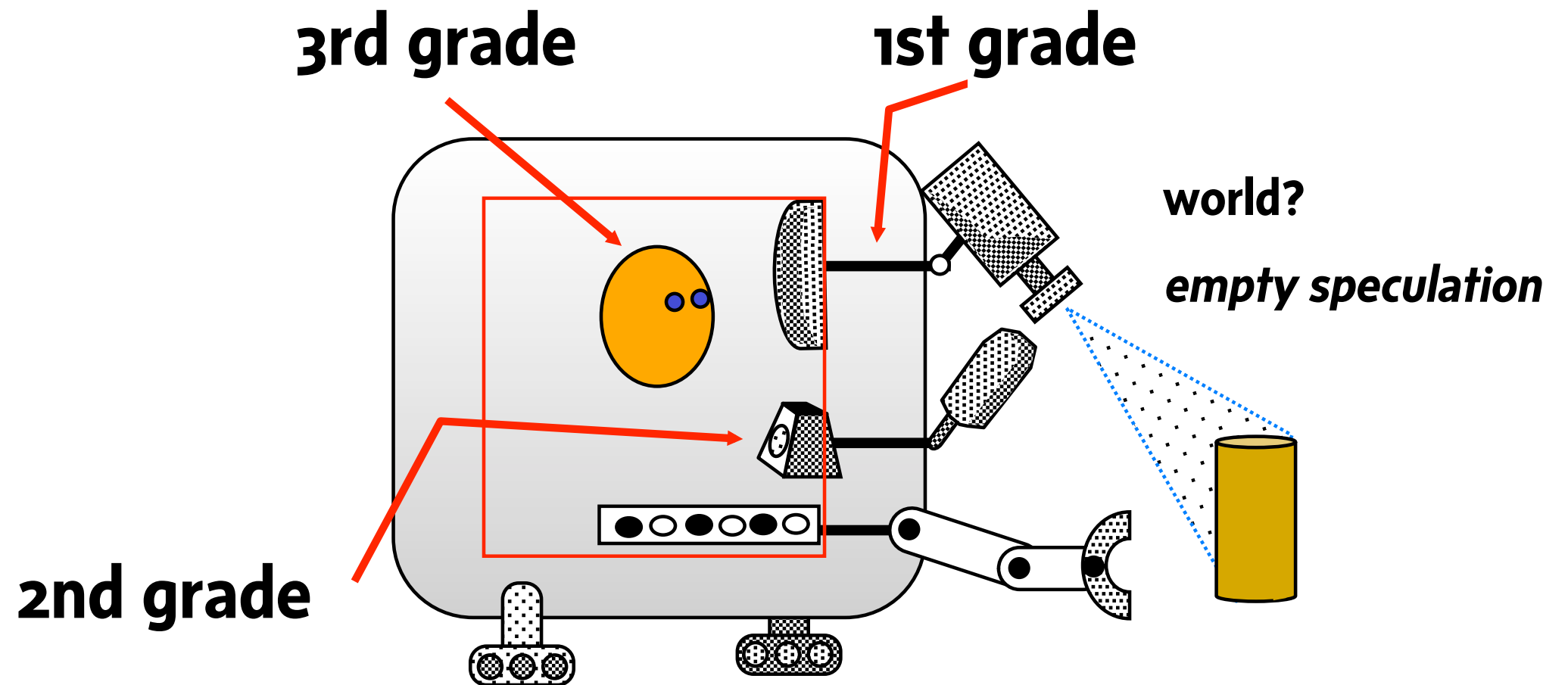
a world, partially knowable and accepted



the man in the inner room

Berkeley's Perspective: Idealism

only experienced ideas exist,
and at time t , only a sample
experienced



no basis for distinguishing
primary v. secondary "world"
or "screen" origin

the man in the inner room

Hume's Perspective: Skepticism

*All that can be known are
the events in the inner
room*

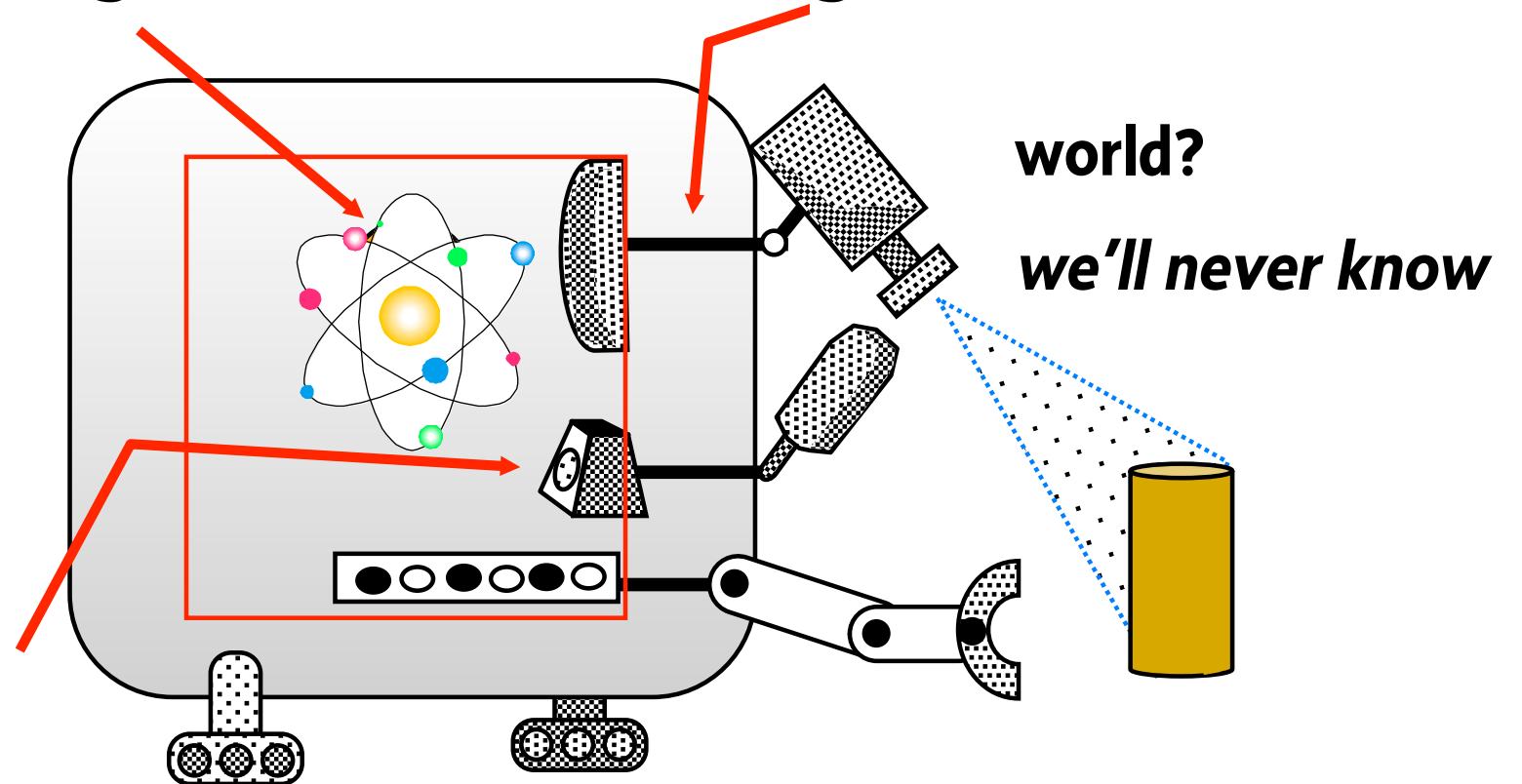
impressions patterned,
organized (automatically, it
seems, by laws of
association)

3rd grade

1st grade

2nd grade

no basis for distinguishing
primary v. secondary "world"
or "screen" origin



world?
we'll never know

Mental Mechanics: If Newton can get the universe... we can surely get the mind

Hume's Philosophy

two major goals: 1) improve upon Locke and Berkeley; 2) rid philosophy of metaphysics

Locke: "what's your mechanism?" primary v. secondary distinction??

Berkeley: "where is your God?" idealism is an "absurdity"

"nothing is ever really present in the mind but its perceptions or impressions and ideas.."

**Impressions and ideas:
experience v. thoughts and memories**



everything grounded in perception (Indirect Realism)

simple & complex ideas, and imagination

complex ideas only valid if they could be reduced to simpler ones; metaphysical arguments false

not all ideas correspond to impressions

shots fired at D, L, B, G ...

fact, fiction, and belief...

complex ideas and beliefs formed by **associations**: because there exists great similarity between people, there must be natural **laws**

laws of motion → mental mechanics

gentle forces and
attraction

resemblance, contiguity, cause and effect

associations are not necessities
(e.g., 3 unjustifiable beliefs)



Three unjustifiable beliefs

"comfortable habits of mind"

The Principle of Universal Causation

The Principle of Induction

The Belief in the External World

analysis of causation

can one perceive cause?

(a) events are contiguous; (b) cause precedes effect; (c) "constant union betwixt" C & E; & (d) same C produces same E, same E always from same C.

causation as psychological experience

present impression + idea of impression + association

what can be known?

empirical and demonstrative knowledge

perceptions help turn fictions into facts (to a degree)

"Most fortunately it happens, that since reason is incapable of dispelling these clouds, nature herself suffices to that purpose, and cures me of this philosophical melancholy and delirium, either by relaxing this bent of mind, or by some avocation, and lively impression of my senses, which obliterate all these chimeras. I dine, I play a game of backgammon, I converse, and am merry with my friends; and when after three or four hours' amusement, I would return to these speculations, they appear so cold, and strained, and ridiculous, that I cannot find in my heart to enter into them any farther."

John and John Stuart Mill

the most comprehensive analysis of associationism

mind is only sensations and ideas held together by associations

Jacket White

Book Green

Door Red

Fly Yellow

Meth Blue

Chapter Purple



sensations stronger than ideas

determinants: vividness and frequency

separate ideas come to be one
unitary experience

our conception (formation) of *objects*
arises from these clusters sensations

* see the binding problem

associations that involve **pleasure** or **pain** extremely powerful

J v. JS: mental mechanics v. mental chemistry

J: any mental experience can be directly reduced to the simple ideas that make it up

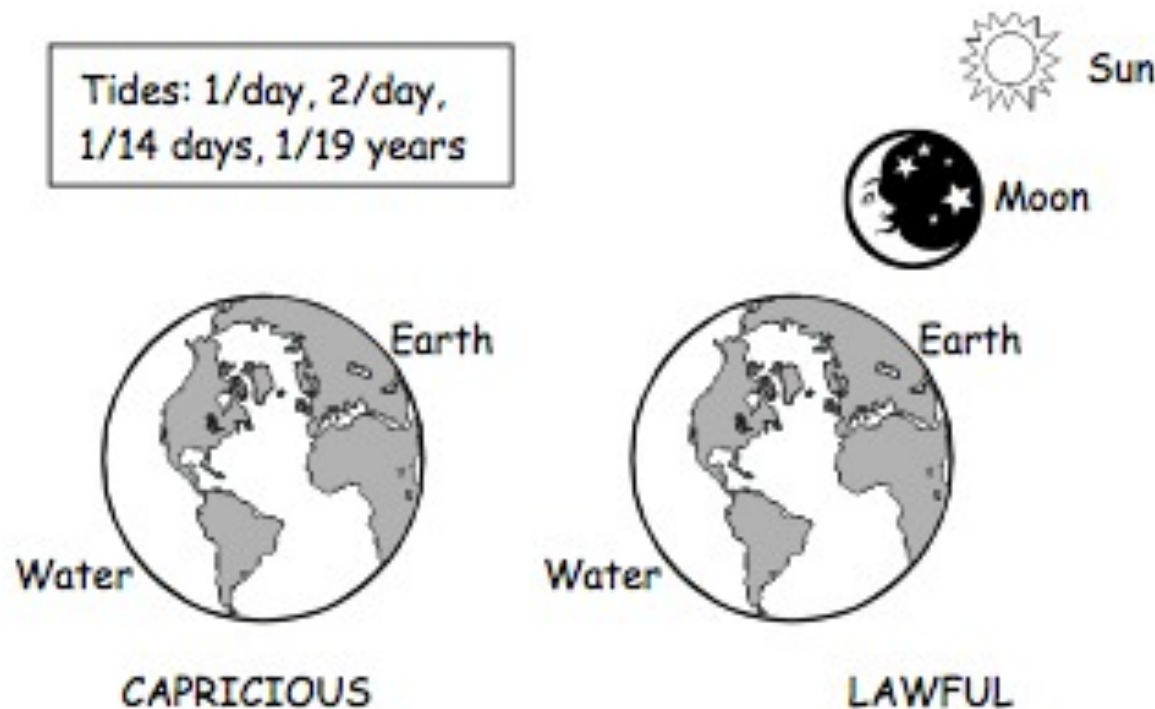
JS: entirely new ideas may emerge that cannot be reduced
the whole has properties not inherent in parts

primary v. secondary laws

exact v. inexact sciences

anticipating complexity science
and study of individual differences

John Stuart Mill



Psychology as the science of the elementary **laws of the mind**

connection to behaviorism

"by the proper application of rewards and punishments may be taught any course of action, the most contrary to their natural instincts and propensities"



The term **operant conditioning** was coined by **Skinner**
behavior is **operant** because it is "designed to operate on the environment.

learning is **active**—the **associations** between action and its **consequences**.

to change a learned behavior,
change the animal's **reinforcement contingencies**



Hume's touchstone

animal behaviors in the box result in positive or negative outcomes

Hartley, Hebbian Learning, and modern models of mind



focus on physiology and anatomy

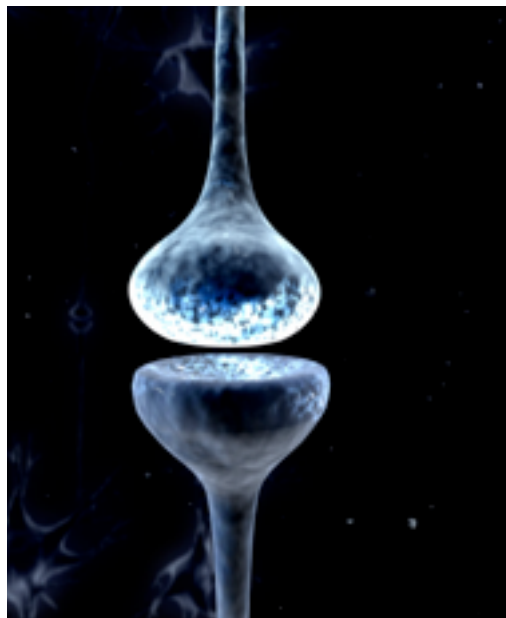
impressions in the nerve → sensations in the brain

**neurological mechanism for associations:
vibratinucles**

**ideas get that co-occur get recorded in
the brain as an interrelated package**

Hebb's Law of Exercise

"neurons that wire together fire together"



**Stimulus and Response are
connected by a neural bond**

**Strength of bond varies and
determines $p(\text{Response}):\text{Stimulus}$**

connectionist / node models



Alexander Bain

The Senses and the Intellect

major work to link physiology to psychology

associations between impressions, ideas and complex ideas are rarely 1:1

laws of compound association and constructive association

on movement:

observe and measure movement as it relates to psychology

spontaneous behaviors arise and are associated with positive or negative outcomes → voluntary

"For every act of memory, every exercise of bodily aptitude, every habit, recollection, train of ideas, there is a specific grouping, or co-ordination, of sensation and movements, by virtue of specific growth in the cell junctions"



finally, psychology?

Leave philosophy and speculation; move to science of
observation and experiment

identification of laws and principles that govern behavior

**demonstration of how psychology could be a material, inexact
science**

neuron doctrine: possibility of connecting mind and body

debates on positivism and logical positivism

but Bain is not the start of psychological science...

but we still have one last stop...