

Thinking about Thought

- Introduction
- Philosophy of Mind
- Cognitive Models
- Machine Intelligence
- Life and Organization
- Ecology
- The Brain
- Dreams and Emotions
- Language
- Modern Physics
- Consciousness

*I just want to start a conversation so that we shall all feel
at home with one another like friends”
(Socrates, 400 BC, while starting Western Philosophy)*

Session One: Theories of Mind

[Philosophy of Mind 101]

for Piero Scaruffi's class

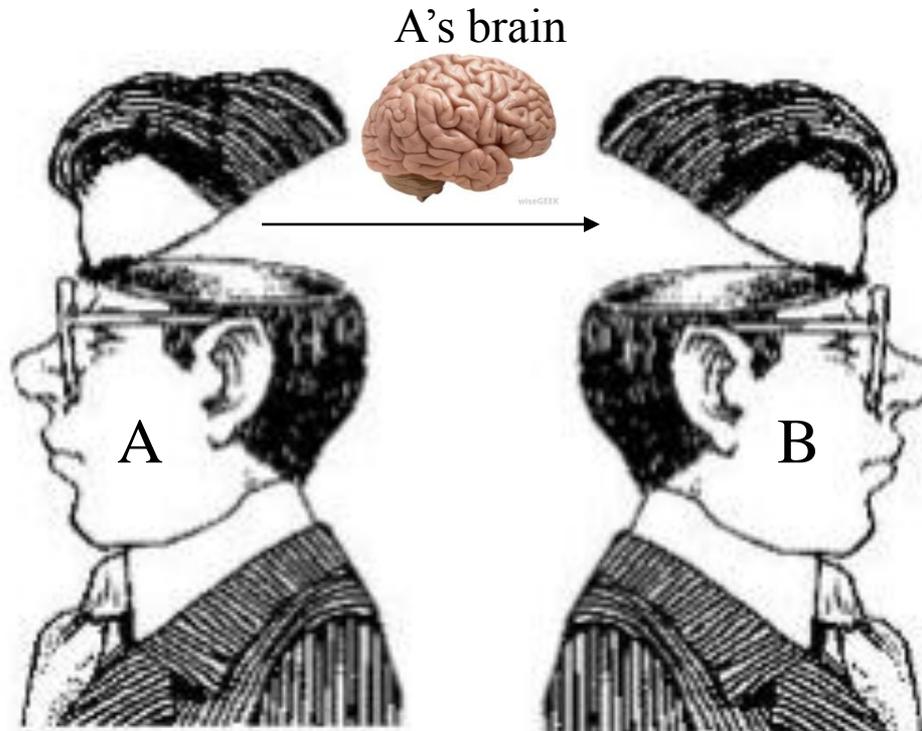
"Thinking about Thought"

at UC Berkeley (2014)

(roughly the first chapter of my book "The Nature of Consciousness")

The Takeover of the Mind

Anyone ready for a brain transplant?



Is B still B?

INTELLIGENCE

- A measure of performance in solving problems?
- Are animals intelligent?
- Are plants intelligent?
- Are all humans intelligent the same way?
- Are intelligence values only zero and one?
- Are all living beings “intelligent”?

COGNITION

- The set of cognitive faculties: memory, learning, reasoning, ...
- What is a cognitive faculty?
- Are they independent?
- Are they all the same thing?
- Are all living beings “cognitive systems”?
- What else has cognitive faculties?

MIND

- Does it correspond to all brain processes?
- Does it correspond to a subset of brain processes?
- Does it correspond to more than brain processes?
- Is it the same thing as cognition?
- Is it the same thing as consciousness?
- Is memory part of mind? Is seeing part of mind? Is moving an arm part of mind? Is eating part of mind?

CONSCIOUSNESS

- Awareness of self
- Awareness of others
- Awareness of time
- Free will
- Identity

The Takeover of the Mind

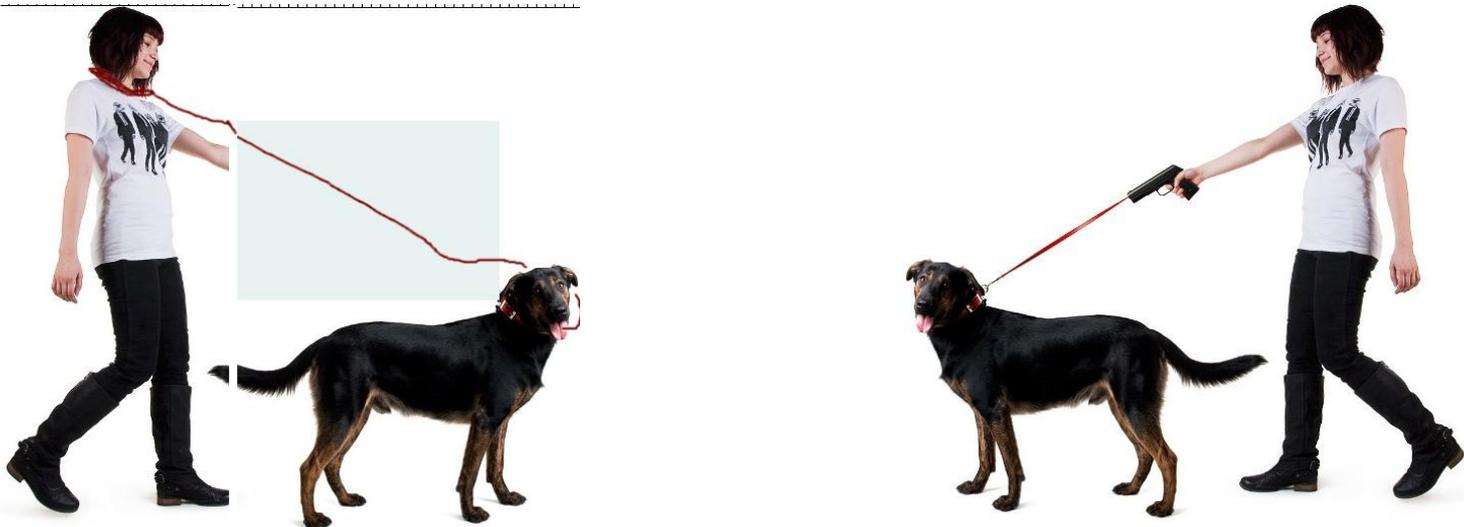
- Ancient Greeks: even rivers are sentient
- Why would we think that we are any better than rivers?
- Note: rivers live far longer than us
- Until 30 years ago: a person is dead if the “body” is dead (heartbeat, breathing)
- Now: is a person dead if her brain is dead?

The Takeover of the Mind

- Proof that the mind is a recent accident: we ask ourselves what the mind is!
- When we ask what the mind is, we implicitly assume that the body is a given.
- We don't take the mind for granted and wonder what the body is and why we have bodies.
- We are bodies that wonder about their minds, not minds that wonder about their bodies.

The Takeover of the Mind

- However, we use the body as a clue to find out who else has a mind
- If I transplant the brain of a dog into the body of a human, can I keep that human on a leash?
- May I keep a mentally disabled person on a leash?



THE MIND-BODY DEBATE

- Is our mind made of matter?
- Is it made of a different substance?
- What differentiates the mental from the non-mental?
- How do our mind and our body relate?
- Is our mind inside our body?
- Is our mind born with the body?
- Will it die with the body?
- Does it grow with the body?
- What is the relationship between the mental and the neural?
- How does the mental originate from the neural?
- What is in the mind?

DUALISM



- Dualism: mind and body are made of two different substances
 - Substance dualism: the mind is a different (nonphysical) substance altogether from the brain
 - René Descartes (1649)
 - A substance is characterized by that property that it cannot lack and still be the same substance (extension and “cogito”)
 - "Res extensa" (things that have an extension) and "res cogitans" (things that think) belong to two separate realms, and cannot be studied with the same tools

DUALISM

- Substance Dualism/ Descartes
 - Newton's Physics is a direct consequence of that approach: Physics studies the realm of matter, and only deals with matter.
 - Aristotle's dualism: living and nonliving things
 - Descartes: equivalence between living and nonliving matter (animals are machines)
 - There is "one" physical world for everything
 - Emphasis on mind, not on life
 - The brain is the seat of the body-mind interaction

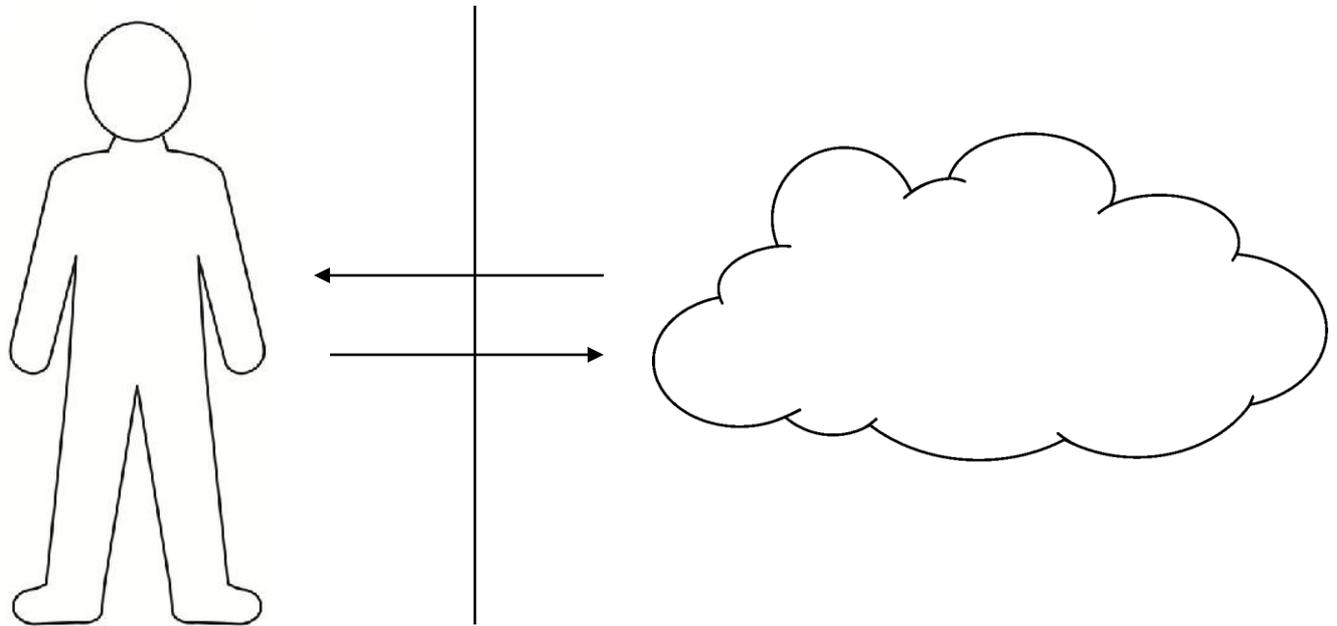
DUALISM



- Dualism
 - David Hume’s “Bundle Dualism” (1740):
 - The ultimate skeptic, who reduced matter, mind, religion, and science to illusions/delusions
 - Matter is a fiction (but a body does exist, whatever it may be)
 - The mind is a theater where perceptions play their part in rapid succession (a “bundle” of perceptions)
 - “I may venture to affirm of the rest of mankind that they are nothing but a bundle or collections of different perceptions “

DUALISM

- Dualism
 - The Dualist's dilemma: how do mind and body interact?



DUALISM



- Epiphenomenalism (Charles Bonnet - 1754)
 - Mind and body do NOT quite interact
 - The brain influences the mind, but the mind does not influence the brain
 - Mental events are caused by physical events in the brain, but have no effects upon any physical event
 - The mind merely observes the behavior of the body, although it believes that it actually causes it.
 - Donald Davidson's anomalous monism (1970)
 - Jaegwon Kim's supervenience (1984)

DUALISM

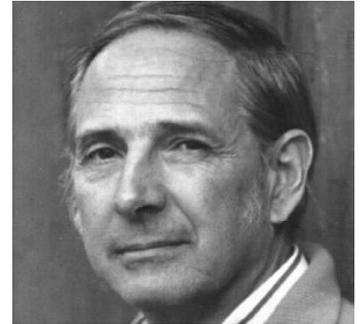
- Property Dualism: the mind is the same substance as the brain, but comes from a different class of properties (that are exclusive of the brain).

– Charles Dunbar Broad (1925):

- The universe is inherently layered
- Each layer has its own properties
- Each layer yields the following layer but cannot explain the new properties that emerge with it
- At each level some properties apply, but at the immediately higher level some other properties apply
- Supervenience



DUALISM

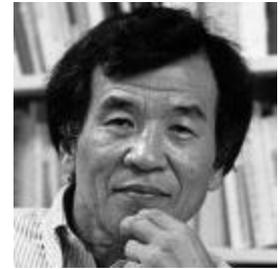


- Property Dualism
 - John Searle's “biological naturalism” (1992)
 - Brain processes cause mental states
 - The mental state is an emerging property
 - Mental states are nonphysical, but form a novel class of features of the brain with properties (such as meaning and awareness) that are different from those of matter
 - The relation between brain states and mental states is causal, in both directions, each causing the other.
 - The mind is material, but at the same time it cannot be reduced to any other physical property

DUALISM

- Supervenience/ examples
 - Biological properties "supervene" (or "are supervenient") on physical properties, because the biological properties of a system are determined by its physical properties.
 - Biological and physical properties of an organism are different sets of properties, but the physical ones determine the biological ones.
 - Chemical compounds have density and conductivity, whereas biological organisms have growth and reproduction.
 - Another example: electrons have mass and spin, but electricity has potential and intensity

DUALISM



- Supervenience/ Jaegwon Kim (1984)
 - The mental supervenes on the neural
 - Mind is to brain what lightning is to electrically charged particles: the same phenomenon, that presents itself in two different ways.
 - One can organize nature in a hierarchy, starting with elementary particles and ending with consciousness.
 - At each level a new set of properties "emerge": the weak force at the elementary particle level, viscosity at the molecular level, metabolism at the biological level, etc etc...
 - and consciousness at the cognitive level.

DUALISM



- Property Dualism/Supervenience
 - David Chalmers (1996)
 - "Logical" supervenience (loosely, "possibility") is a variant of supervenience: some systems could exist in another world (are "logically" possible), but do not exist in our world (are "naturally" impossible)
 - Natural supervenience occurs when two sets of properties are systematically and precisely correlated in the natural world
 - Logical supervenience implies natural supervenience, but not viceversa.

DUALISM



- Property Dualism/Supervenience
 - David Chalmers (1996)
 - There may be worlds in which two properties are not related the way they are in our world, and therefore two naturally supervenient systems may not be logically supervenient.
 - Most facts supervene logically on the physical facts: if they are identical physical systems, then they are identical, period
 - Exception: consciousness is not logically supervenient on the physical.
 - Consciousness "cannot" be explained by the physical sciences by reducing the system to ever smaller parts.

DUALISM

- Trialism: another way to explain how mind and body interact
 - Karl Popper's and John Eccles' world of ideas (1977)
 - The world of ideas evolves through the growth of objective knowledge. The growth and evolution of objective knowledge obey Darwinian laws
 - The interaction between the mind and the brain of an individual is analogous to a probability field of Quantum Mechanics ("psychon" is the mental unit that transmits mental intentions to the neural units)

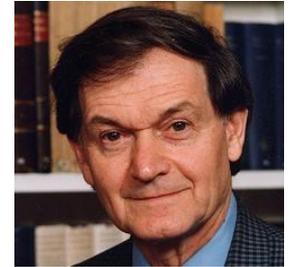


DUALISM



- Trialism
 - Rudy Rucker’s mindscape (1982)
 - Evidence that there exists a world of ideas separate from the mental and the physical: “is what you thought yesterday still part of your mind?”
 - Our minds can travel the mindscape that contains all possible thoughts just like our bodies can travel the physical space that contains all possible locations.
 - Minds share the same mindscape the way bodies share the same physical space.

DUALISM



- Trialism
 - Roger Penrose's protoconsciousness (1989)
 - "Protoconscious" information is encoded in space-time geometry at the fundamental Planck scale
 - The mind has access to them (i.e., is conscious) when a particular quantum process occurs in our brain

INTENTIONALITY

- What is really unique about Mind? Descartes: *res cogitans*
- Mental states have the property of referring to something else



INTENTIONALITY

- Intendo = refer to
- Intentionality = the property of being “about” something
- The mental is intentional
- Intentionality comes in different "flavors", "propositional attitudes": hope, belief, desire, know

INTENTIONALITY



- Franz Brentano (1874): the “irreducibility thesis”
 - All mental phenomena are intentional
 - No physical phenomenon is intentional
 - Therefore mental phenomena cannot be reduced to physical phenomena
 - The mental and the physical are different substances
- Alexius Meinong (1904): mental states must have their own existence apart from the physical world
- Brentano: all mental states are "representations" of objects
- Meinong: those representations exist apart from the objects they represent



MONISM

- Monism: only one substance exists
 - Materialism: only matter exists
 - Idealism: only mind exists

MONISM



- Monism
 - Baruch Spinoza (17th century): only God exists
 - Only one substance exists, that is infinite and eternal, and “the” substance has two properties: it is conscious and it has extension.
 - This substance is expressed in an infinite series of “modes”.
 - Humans only perceive two of those modes because we are equipped with only two attributes of that substance, hence we see a world of minds and bodies
 - When we perceive modes through the attribute of *thought*, we perceive *ideas*, and we perceive them through the attribute of *extension*, we perceive *objects*
 - God is all that exists (he is what is), there is nothing that is not God (“pantheism”)
 - Spinoza got rid of the mind

IDEALISM



- Idealism: only mind exists
 - Gottfried Leibniz (17th c)
 - Only minds exist
 - Humans are not the only ones to have minds.
 - Everything has a mind ("panpsychism")
 - Minds come in degrees, starting with matter (whose minds are very simple) and ending with God (whose mind is infinite)
 - Reality is the set of all finite minds (or "monads") that God has created
 - How to solve the mind-body problem: get rid of the body

IDEALISM



- Idealism
 - George Berkeley (18th c)
 - All we know is our perceptions ("esse est percipi")
 - The only thing that exists is the experiences of our mind
 - Alfred Whitehead (1920)
 - Mental life occurs in a field of protoconscious events



IDEALISM

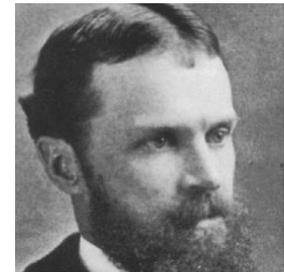
- Quantum idealism
 - We cannot perceive reality
 - Reality is what the observer observes

MONISM



- Neutral Monism

- Ernst Mach (1886): there is a fundamental constituent of the universe which is neither mental nor physical but yields both the mental and the physical that we observe.
- William James (1904): “The instant field of the present is at all times what I call the ‘pure’ experience. It is only virtually or potentially either object or subject as yet.”



MONISM



- Neutral Monism
 - Bertrand Russell (1921)
 - Only spacetime events exist
 - Everything in the universe is made of spacetime events which are neither mental nor physical.
 - Both matter and mind are meaningless oversimplifications of reality (different ways of organizing space-time)
 - Matter and mind are both built out of the same stuff, which is neither material nor mental ("neutral")

DUALISM

SUBSTANCE DUALISM Descartes

PROPERTY DUALISM Broad

SUPERVENIENCE Kim

TRIALISM

Popper, Penrose, Rucker

EPIPHENOMENALISM Bonnet

MONISM

IDEALISM

Berkeley

PANPSYCHISM Leibniz

PANTHEISM

Spinoza

NEUTRAL MONISM Russell

MATERIALISM

...coming up...

BEHAVIORISM

FUNCTIONALISM

...coming up...

Break



MONISM

“To do is to be - Descartes

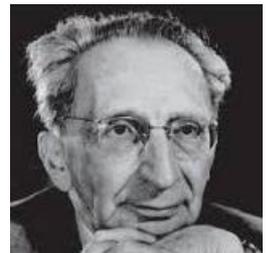
To be is to do - Voltaire

Do be do be do - Frank Sinatra”

(Men’s Restrooms, Greasewood Flats, Scottsdale)

MATERIALISM

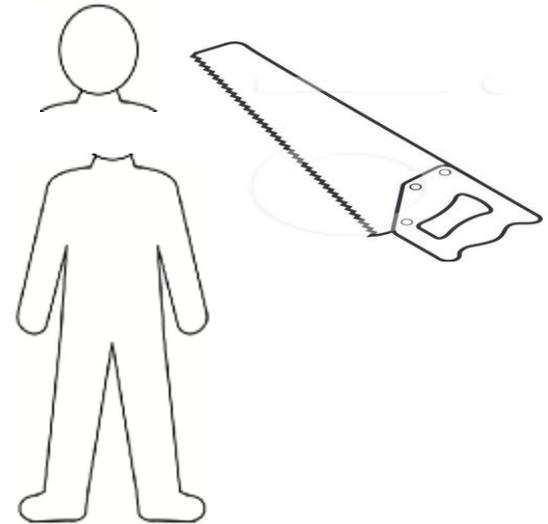
- Monism: only one substance exists
 - Materialism
 - Only matter exists
 - The mind is as material as the body
 - Consciousness is a physical processes in the brain
 - The mental can be explained from the physical
 - Julien La Mettrie (1748): the mind as a machine made of matter, and thought as a material process (the "homme machine")
 - Herbert Feigl ("The Mental and the Physical", 1958) resurrects the mind-body problem for 20th century philosophy



MATERIALISM

– Materialism

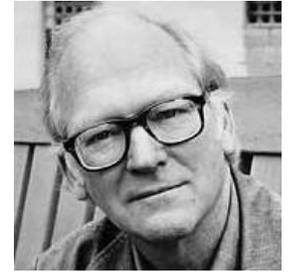
- 20th century: the mind-body problem became the "mind-brain problem"
- (Note: too much emphasis on the brain now? I feel pain in my foot, not in my brain!)



MATERIALISM

- Materialism
 - Identity theory (Ullin Place, John Smart - 1950s)
 - Mental events are physical processes in the brain, just like lightning is a physical process in the air.
 - Mental states are identical to physical states of the brain (“physicalism”)
 - No need to explain how they interact: they are the same thing
 - Mental terms and physical terms are different descriptions of the same states
 - A desire, for example, is both a conscious and physical state that causes some actions that are both conscious and physical states.
 - Feigl: mental states and physical states have the same “extension” but different “intension”

MATERIALISM



– Materialism

- Anomalous Monism (Donald Davidson, 1970)

– Simple syllogism:

- At least some mental events interact causally with physical events
- Events related as cause and effect normally fall under strict deterministic laws
- But there are no strict deterministic laws under which mental events can be predicted and explained (this is the "anomalism" of the mind).
- This is a contradiction, unless the mind is something else.
- The physical and the mental realms must have essential features that are mutually incompatible

MATERIALISM

- Materialism
 - Anomalous Monism
 - There can be no laws connecting the mental with the physical.
 - There can be no theory connecting Psychology and Neurophysiology.
 - The language of Psychology cannot be reduced to the language of Physics.
 - There exist no "psychophysical" laws
 - The mental domain cannot be the object of scientific investigation

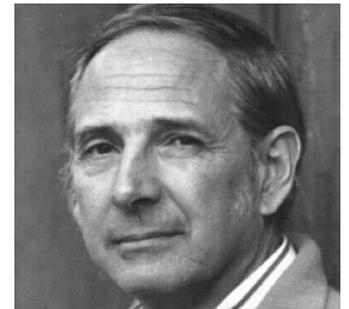
MATERIALISM

- Materialism
 - Token identity theory_(Davidson, Jerry Fodor, Hilary Putnam)
 - Every mental state is identical to a physical state, but the physical state corresponding to a given mental state is not necessarily always the same one
 - People with widely different brains can be in the same psychological state
 - Different software programs can implement the same function

MATERIALISM

– Materialism/ Issues

- Leibniz's law“: two things are identical if and only if all the properties that apply to the first one also apply to the second, and viceversa
- Reducibility: how can feelings arise from material processes? how can electrochemical activities in my brain suddenly turn into the feeling of pain or fear?
- John Searle’s paradox: either the identity theory leaves out the mind, in which case it is implausible, or it does not, in which case it is not materialist anymore.



MATERIALISM

- Against physicalism

- The knowledge argument (Frank Jackson - 1982)

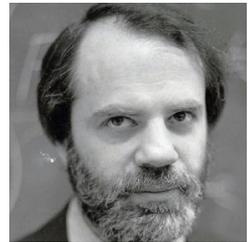
- A scientist who has a complete understanding of the science of color, but has never experienced color: will she learn something new the first time that she experiences color?

- If yes, then there cannot be a complete physical explanation of mental states.

- The philosophical zombie argument (Saul Kripke, 1972)

- If a world in which all physical facts are the same as those of the real world must contain everything that exists in the real world, then

- A world of non-conscious (zombie) human beings identical to the real world of conscious human beings must contain consciousness.



MATERIALISM



- Beyond physicalism
 - Bertrand Russell (1927)
 - We cannot know the nature of matter other than through theories and experiments
 - In particular, we cannot know the processes that occur in our own brain
 - Mind allows us to perceive some of those brain processes
 - What a neurologist really sees while examining someone else's brain is a part of her own (the neurologist's) brain.

MATERIALISM

- Beyond physicalism
 - Bertrand Russell
 - Consciousness gives us immediate, direct knowledge of what is in the brain, whereas the senses can observe (possibly aided by instruments) what is in the brain.
 - The mental is a transparent grasp of the intrinsic character of the brain
 - Consciousness is just another sense, a sense that, instead of perceiving colors or smells or sounds, perceives the very nature of the brain

BEHAVIORISM

- Behaviorism
 - Behaviorism deals with mental terms only to the extent that they are related to behavior
 - Behaviorism is not interested in discussing the mind, only behavior and disposition to behavior.
 - Behaviorism rejects the common-sense notion that our mental states cause behavior
 - John Watson (1913)
 - Mental states are unscientific
 - All behavior can be explained as stimulus and response relations.



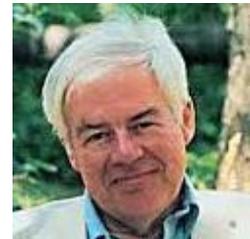
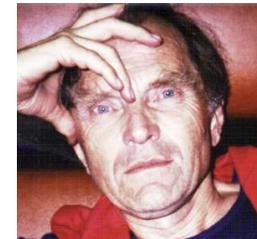
BEHAVIORISM



- Behaviorism
 - Gilbert Ryle (1949):
 - Descartes invented a myth: the myth of the mind inside the body (“the ghost in the machine”)
 - The mind is not a different substance but simply a domain of discourse
 - The mind "is" the behavior of the body.
 - Physical objects exist, mental objects are merely vocabulary.

BEHAVIORISM

- Eliminative Materialism
 - Wilfred Sellars (1956): the mental vocabulary of “folk psychology” constitutes a theory, that has not progressed for millennia, that mostly fails to explain and predict behavior, and that is founded on knowledge about human beings that has long been proven false
 - Eliminative materialism (Paul Feyerabend - 1963, Richard Rorty -1965)
 - Mental states (beliefs, hopes, etc) do not exist



BEHAVIORISM

- Eliminative Materialism
 - Paul Churchland (1984)
 - Our introspection cannot be trusted as our other senses mislead us about the real structure of the universe (we don't see/ hear elementary particles and probability waves)
 - We explain people's behavior by using terms that ascribe mental states to people
 - There is nothing in the brain that resembles what folk psychology talks about: there are only patterns of neural activity
 - We should replace the outdated language of folk psychology with the language of neurobiology, just like folk physics was replaced by Newton's physics



FUNCTIONALISM

- Functionalism (David Malet Armstrong, David Lewis - 1960s): the function not the substance
 - If a mental state can be realized in more than one physical state, is the physical state important at all?
 - What is it that makes a physical state of the brain also a mental state? the function it performs (eg, thermometer)
 - Mental states have a function
 - A mind doesn't necessarily require a brain
 - How do mental states cause physical behavior?

FUNCTIONALISM

- Computational Functionalism (Hilary Putnam - 1960)
 - If there is no correlation between mental and physical states, why not classify mental states based on their function, i.e. their causal roles within the mental system, regardless of their physical structure?



FUNCTIONALISM

- Computational Functionalism
 - Hilary Putnam
 - The psychological state of an individual can be identified with the state of a “Turing machine”
 - A psychological state causes other psychological states according to the machine's operations
 - Belief and desire correspond to formulas stored in two registers of the machine.
 - Appropriate algorithms can process those contents to produce action.



FUNCTIONALISM

- Computational Functionalism
 - Representational Theory of the Mind (Jerry Fodor - 1975, Stephen Stich)
 - Knowledge of the world is embedded in mental representations
 - Mental representations are symbols (the “language of thought” or “mentalese”)
 - Symbols can be “computed”
 - The mind is endowed with a set of rules to operate on such representations, i.e. to “compute” the symbols
 - Cognitive life is the output of those rules

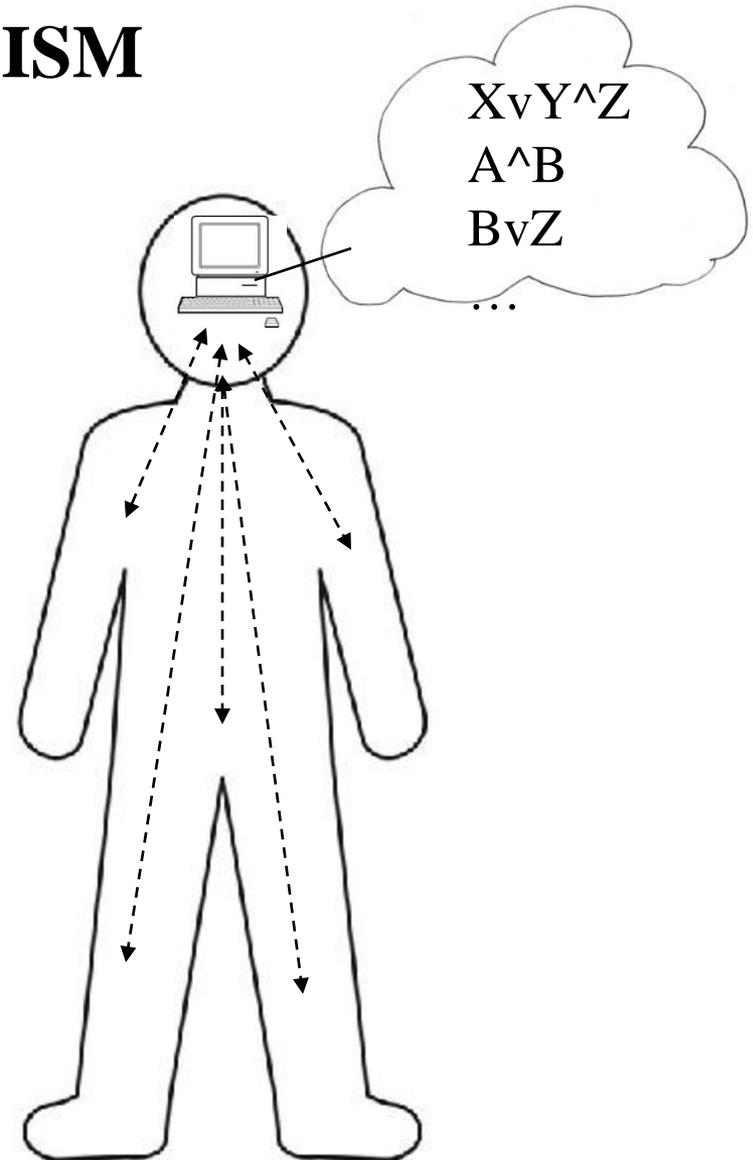


FUNCTIONALISM

- Computational Functionalism/ RTM
 - Mental states are computational states
 - The mind processes symbols without knowing what those symbols mean, in a purely syntactic fashion.
 - Behavior is due only to the internal syntactic structures of the mind.
 - The mind is the software and the brain is its hardware
 - The execution of that program (the mind) in that hardware (brain, computer,...) yields behavior

FUNCTIONALISM

- Computational Functionalism/
RTM
 - How mind and body communicate: beliefs and desires are information, represented by symbols, and symbols are physical states of a processor, and the processor is connected to the muscles of the body.



FUNCTIONALISM

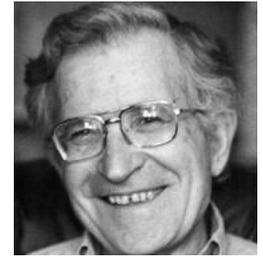
– Computational Functionalism/ RTM

- The language of thought is an intrinsic part of the brain and has somehow been produced through evolution
- That language is shared by all creatures capable of “propositional attitudes” (beliefs, hopes, fears, desires)
- Note: “mind” is a purely syntactic program

FUNCTIONALISM

– Computational Functionalism/ RTM

- Noam Chomsky in linguistics (1957) and David Marr in vision (1982): the mind as a set of modules that “compute” something based on an innate symbolic capability.
- Noam Chomsky: “mental organs” in addition to physical organs.
- The mind is made of genetically-specified modules, each one specialized in performing one task.
- A module corresponds to a physical region of the brain
- Modules communicate in the “language of thought”



FUNCTIONALISM



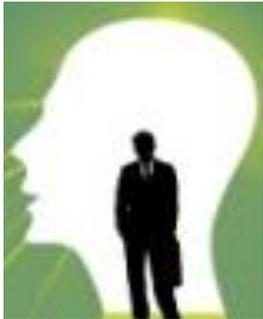
- Computational Functionalism
- Ned Block's critique (1978)
 - “Qualia”: sensations that are associated to the fact of being in a given psychological state
 - Inverted qualia: an organism whose functional states are identical to ours, but in which pain causes the sensation that we associate to pleasure
 - Absent qualia: an organism whose functional states are identical to ours, but in which pain causes no sensation
 - Functionalism cannot account for inverted and absent qualia
 - A functionalist might think that even Bolivia's economy has mental states

FUNCTIONALISM



– Computational Functionalism

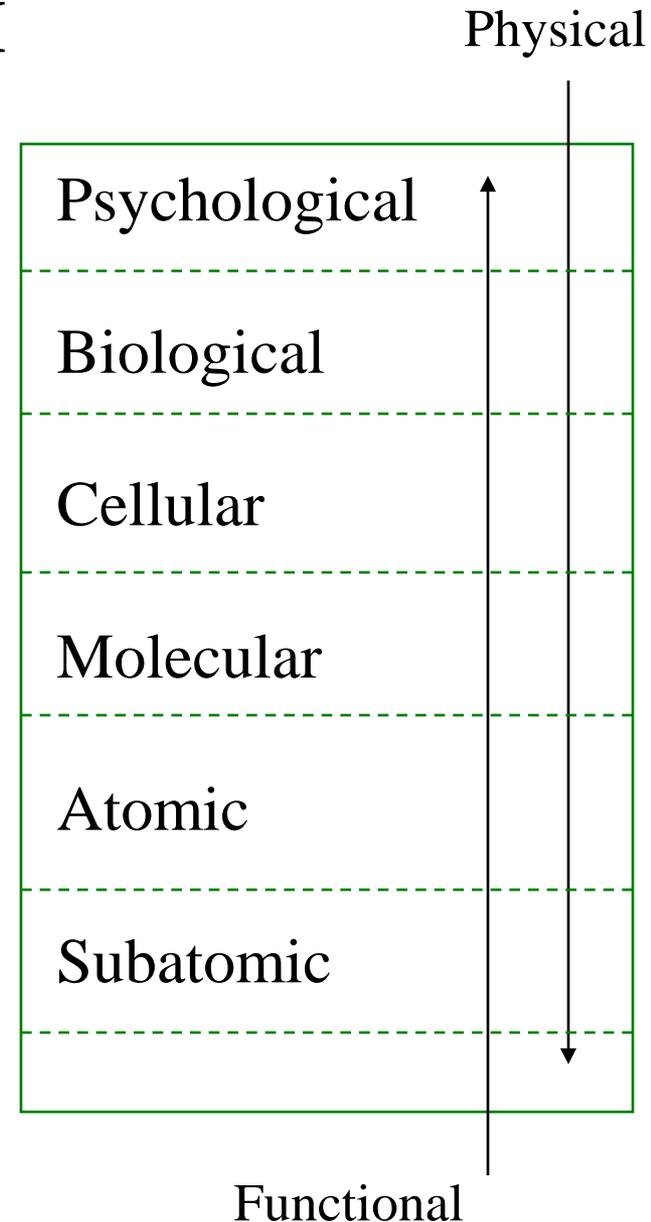
- Homuncular Functionalism (Daniel Dennett - 1978, William Lycan - 1987)



- A mental process is the product of many independent lower mental processes, and each of these lower processes is the product of more and more primitive (less and less mental) independent processes all the way down to the physical processes of the brain
- Eventually this reductionist process reaches a level at which problems can be solved with no more intelligence than the one that can be found in a neuron

FUNCTIONALISM

- Homuncular Functionalism (Daniel Dennett - 1978, William Lycan - 1987)
 - Between the low level of electrochemical processes and the high level of psycho-functional processes, nature is organized in a number of hierarchical levels (subatomic, atomic, molecular, cellular, biological, psychological)
 - Each level is both physical and functional: physical with respect to its immediately higher level and functional with respect to its immediately lower level

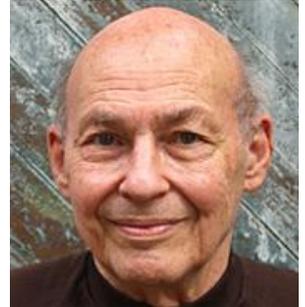


FUNCTIONALISM

- Homuncular functionalism (Daniel Dennett - 1978, William Lycan - 1987)
 - Proceeding from lower levels to higher levels we obtain a physical, structural, description of nature (atoms make molecules that make cells that make organs that make bodies...).
 - Proceeding backwards, we obtain a functional description (the behavior of something is explained by the behavior of its parts).
 - The “aggregative ontology” (“bottom-up”) and the “structured epistemology” (“top-down”) of nature are dual aspects of the same thing.
 - The apparent irreducibility of the mental is due to the irreducibility of the various levels.

HOMUNCULAR FUNCTIONALISM

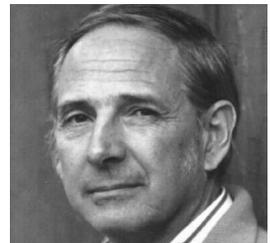
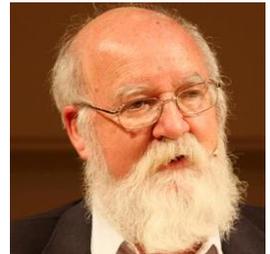
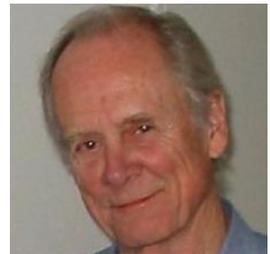
- Homuncular functionalism
 - Marvin Minsky (1988): Intelligent behavior is due to the non-intelligent behavior of a very high number of agents organized in a bureaucratic hierarchy, the “society of the mind”.



DUALISM	SUBSTANCE DUALISM	Descartes
	PROPERTY DUALISM	Broad
		SUPERVENIENCE
		Kim
	TRIALISM	Popper, Penrose, Rucker
	EPIPHENOMENALISM	Bonnet
MONISM	IDEALISM	Berkeley
		PANPSYCHISM
		Leibniz
	PANTHEISM	Spinoza
	NEUTRAL MONISM	Russell
	MATERIALISM	
		IDENTITY THEORY
		Place, Feigl, Smart
		ANOMALOUS MONISM
		Davidson
BEHAVIORISM	Ryle	
	Eliminative materialism	(Feyerabend, Rorty, Churchland)
FUNCTIONALISM		
	Computational functionalism	Putnam, Fodor, Stich, Block
	Homuncular functionalism	Dennett, Lycan, Minsky

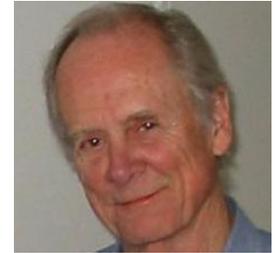
INTENTIONALITY REVISED

- Jerry Fodor:
 - The mental is intentional, but it can be reduced to the physical
- Fred Dretske:
 - Intentionality is a general property of systems
- Daniel Dennett:
 - Nothing is intentional
- John Searle:
 - Everything that is intentional is either conscious or potentially conscious

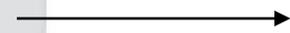


INTENTIONALITY REVISED

- Fred Dretske (1980):
 - Intentionality is a general property of systems
 - Any device that carries information exhibits some degree of intentionality
 - Intentionality is not unique of mental states, but quite ubiquitous in living and even non-living systems
 - Just about everything in nature refers to information that is available in the environment
 - Having content is then not unique to the human mind at all.

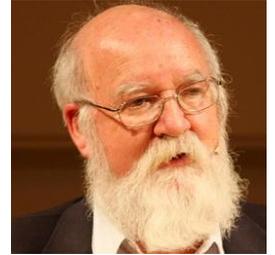


AGE



TEMP.

INTENTIONALITY REVISED



- Daniel Dennett (1987):
 - In order to explain and predict the behavior of a system one can employ 3 strategies:
 - a "physical stance", which infers the behavior from the physical structure
 - a "design stance", which infers the behavior from the function/purpose for which it was designed
 - an "intentional stance", which infers the behavior from the beliefs/desires that the system must exhibit to be rational
 - These are simply three different ways of speaking about the same thing
 - We can ascribe a mind to anything

The alarm will go off at 3pm

The tree needs water

PHENOMENOLOGY



- Edmund Husserl (1900)
 - Consciousness is intentional: consciousness is “consciousness of” (“intentional” as in “refers to”)
 - Intentionality links mind and phenomena, therefore phenomena and being are the same thing
 - The essence of something is not its physical constituents or physical laws, but the way we experience it

PHENOMENOLOGY



- Edmund Husserl (1900)
 - By separating phenomenon and being, science denied humans the truth of the reality that they experience
 - ”Phenomenology” is the science of phenomena, a return to the primary experience of the world
 - The essence of the phenomenon is the sum of all possible “intuitive” ways of knowing the phenomenon
 - This has to be achieved after “bracketing out” the physical description of the phenomenon, I.e. the description given by science

PHENOMENOLOGY



- Martin Heidegger (1927):
 - You can't divide reality into subjective and objective
 - The objective is impossible because we are part of it
 - We can't be objective observers
 - We don't exist as independent observers, we exist as part of the world
 - We react by instinct, we are thrown into the world
 - We are rarely aware of what we are doing

PHENOMENOLOGY



- Martin Heidegger (1927):
 - Unity of the "dasein" (being)
 - The distinction between mind and world is illusory: there is only a “being in the world” that is not divided into mind and world
 - “Physical reality" and "mental life“ are meaningless expressions: the world and the mind cannot be separated

PHENOMENOLOGY

- Phenomenal Externalism (Fred Dretske - 1996, Andy Clark & David Chalmers - 1998)
 - The mind extends to include whatever tools are used
 - My mind spreads to the tools that i use in order to carry out my cognitive processes

DUALISM	SUBSTANCE DUALISM	Descartes
	PROPERTY DUALISM	Broad
		SUPERVENIENCE
		Kim
	TRIALISM	Popper, Penrose, Rucker
	EPIPHENOMENALISM	Bonnet
MONISM	IDEALISM	Berkeley
		PANPSYCHISM
		Leibniz
	PANTHEISM	Spinoza
	NEUTRAL MONISM	Russell
	MATERIALISM	
		IDENTITY THEORY
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PHENOMENOLOGY		
	Husserl, Heidegger	

BRAINS CAUSE MINDS

- IS THE BRAIN SUFFICIENT?
 - Does a dead brain cause a mind?
 - Does a brain removed from the body cause a mind?
 - We are not aware of any mind that does not have a body.
 - Rephrase as **SOME BODIES CAUSE MINDS**
- IS THE BRAIN NECESSARY?
 - We have no way of knowing if non-brain things cause a mind
 - Rephrase as **AT LEAST SOME BODIES CAUSE MINDS**

BRAINS CAUSE MINDS

- WHAT IS A BRAIN?
 - Where are the borders of the brain?
 - How much can we cut off a brain?
 - Is the nervous system of an insect a brain?
 - What makes something qualify as a brain?

Bibliography

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THEORIES OF MIND

- God is dead - Nietzsche
- Nietzsche is dead - God

(Graffiti on Nietzsche's tomb)

Consciousness

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