Psychology as “the science of mind and behavior”

Historical outline of psychology
1879: Wilhelm Wundt in Leipzig, Germany, founds the first laboratory dedicated to psychology, separating psychology from philosophy for the first time as the science of the mind: STRUCTURALISM (Titchener in US) looks for elements of thought.
1913: John Broadus Watson declares that to be a science, psychology must only study the observable and thus must be a science of behavior, rather than of mind; this inaugurates roughly six decades of dominance of American psychology by BEHAVIORISM.
1967: an arbitrary date for the beginning of COGNITIVISM - Ulric Neisser publishes his textbook Cognitive Psychology, outlining the areas of study (e.g., attention, memory, perception, language) that had begun yielding to investigation in the last decade, and presenting a consensus on the new information processing view of the field that solidified its popularity and led to its rapid ascendance.

Psychology as “the science of experimental epistemology”

Outline of Epistemology for Psychology

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<td>Plato d. 347 BC</td>
<td>Aristotle d. 322 BC</td>
<td>born with innate ideas; experience provides occasion for knowing; “nativism”</td>
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<td>Descartes 1641</td>
<td>Locke 1690 Berkeley 1710 Hume 1748</td>
<td>learn by operation of mind – manipulation of concepts and ideas; “rationalism”</td>
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<td>Kant 1781</td>
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### Psychology as “the science of knowing and experiencing”

**knowing** = more than just storing information like a computer
- animals know how to behave so as to meet goals

**experiencing** = more than just registering light wavelengths like a computer
- see blue, hear note played on clarinet, taste salt
- different from knowledge or information: describe blue to a blind person, describe taste of salt without the word “salty”
- source of all motivation

Knowing and experiencing are natural phenomena, though that is often denied (due to mind-body problem)
- no other science (like biology) covers them – only psychology

#### Mind-Body Problem:

**dualism** - universe is made of two interacting substances: physical matter (including body) and non-physical immaterial stuff (like soul / mind / thought)
- from Descartes around 1640 / early scientific revolution
- how they can interact, no one knows (Descartes: happens in pineal gland)

**materialism** - universe is made of one kind of substance, physical matter – which then must include mind, if mind is real; merely an assertion though

### Scientific Materialism as a worldview says all that exists is matter in motion.
- defined by choice of variables to describe nature in 17th century
- includes physical variables like mass, length, velocity, momentum, etc.
- excludes all psychological variables and phenomena that don’t fit with the physical, like color, sound, taste, and generally knowing and experiencing

This is the only plausible candidate for a concept of nature that we’ve had since the 17th century scientific revolution and the division of the world into the physical and non-physical.

Physical description of nature is taken to be reality, rather than a strategy
- animals must interpret that reality and assign meaning (knowing) and quality (experiencing) to it
- therefore knowing and experiencing are viewed as “not part of nature / just in the head”
Psychology is ABOUT knowing motivated BY experiencing, yet because the knowing experiencing mind is ruled out of science by conceptual difficulties, psychology is framed without those two basic concepts.

The materialist position that the mind is the product of neural activity is an assertion made plausible by lack of alternatives, and the computer metaphor is used to try to make sense of how neural activity could give rise to knowing and experiencing.

Scientific materialism -&gt; Neural assumption -&gt; Computer metaphor

Criticizing the science too much for this seems unfair though because… what other choice is there?! None – FOR NOW.

Consequences of the scientific materialist worldview
- for Psychology: try to study mind using the tools of science that were created to explicitly exclude mind – paradoxical if not impossible!
- for other sciences: their worldview must be wrong!

see these links for more:

Alfred North Whitehead points out the implausibility of scientific materialism in *Science And The Modern World* (1925). Other quotes on this page are also relevant, such as those from Democritus and Lewontin (who explains that materialism isn’t a finding of science, or a preference, but is rather a defining feature of it).

http://media.pluto.psy.uconn.edu/psycquotes.html

Thomas Nagel's précis of his book *Mind And Cosmos* in which he questions some very fundamental assumptions about the nature of the universe.


Excerpt from *Out Of Our Heads* by Alva Noë, from an introductory chapter of a book by one of the few philosophers to question the seemingly fundamental notion that the mind is the product of the brain. It's important to understand that he doesn't promote any supernatural alternative, but rather argues that the basic concept needs to be reconsidered.

http://us.macmillan.com/excerpt?isbn=9780809016488
Psychology as “the science of things that move around on their own”

Science since origins in philosophy has dealt with matter and motion
Ancient Greek philosophy c. 600 BCE:
matter: Thales’s concept of matter, later Democritus and atoms c. 400 BCE
motion: naturalistic (non-supernatural) account of motion and change
culminating in Aristotle’s physics c. 350 BCE
Scientific Revolution 1600s and after – all nature viewed as matter in motion
matter: Dalton’s atomic theory 1803, Einstein’s confirmation of atoms 1905
motion: Newton’s mechanics uses differential equations for change over
time, Einstein’s relativity 1915 combines space and time into one fabric

"Newtonian physics seems up to the task of explaining that an organism will
fall when certain conditions hold but not that an organism will jump when
certain conditions hold.” (Petrusz & Turvey, 2010)

Physics doesn’t address animate motion, nor does Biology generally (apart
from studying the equipment that carries it out)

Things that move on their own are things that “behave”: Psychology

Continuum of things that move around on their own, from “more” to
“less”, is also a continuum of things that psychology applies to, from
“more” to “less”:
humans, chimps, dogs, bugs, worms, single-celled organisms, plants, rocks

Psychology applies to humans and not rocks; also obviously to animals;
less obviously to insects; even single-celled organisms (lacking a nervous
system) can respond to information in their environments about sources of
nutrients or prey possibilities, and act so as to attain goals
• plants?... consider vines growing in contact with and around deck
latticework; Venus flytrap “sensing” presence of prey and capturing it
• See: Michael Pollan, The Intelligent Plant (The New Yorker, Dec 23, 2013
http://michaelpollan.com/articles-archive/the-intelligent-plant/
https://www.dailymotion.com/video/x1vz6pw
http://media.pluto.psy.uconn.edu/Unnerving Intelligence.pdf
• machines don’t move around on their own, but Artificial Intelligence
and Robotics are of interest to psychology in their attempts to
understand and mimic principles of animate movement systems
• see: various terrifying youtube videos of robots like Big Dog
Things that move around on their own eventually produce all of psychology:
- have goals or “motivation” (movement is not random)
- detect / recognize / know when goals are met or not met (knowledge)
- know their environment so as to move through it (perception)
- change behavior based on experience (learning)
- useful to preserve a record of their encounters with the world or to be changed by it (memory)
- and so on...

James Gibson (1904-1979): the basic problem for psychology shouldn’t be something so specifically and intuitively human as memory or language or perception of illusions, but should be locomotion – which requires perception or knowledge of the environment, and control and coordination of action for meeting goals and affecting the environment
- "Psychology, or at least American psychology, is a second-rate discipline . . . The main reason is that it does not stand in awe of its subject matter.”
- "Psychology [is] the effort to find answers to the wrong questions; the study of problems chosen to be convenient to study, instead of relevant.”

see these links about Gibson’s “ecological approach” to psychology:

Two short excerpts about James Gibson's Ecological Psychology, written by people who don’t actually agree with Gibson and his ecological view, but who are describing him and his work fairly objectively.
It’s difficult to sum up the approach in brief; the linked passages are decent outsider views, but they’re still incomplete and fail to appreciate some subtleties and philosophical implications. Ecological psychology is an approach to problems of perception and other aspects of psychology that is very different from conventional mainstream approaches. Instead of looking at the mind as a kind of computer involved in the processing of information (which is what mainstream psychology assumes), it is concerned with how animals and people can directly detect information in the environment which will be sufficient to guide their actions. The phrase “directly detect” is why the approach is often referred to as “direct perception”; it implies that the information doesn't need to be processed at all, which is controversial to say the least, and which certainly flies in the face of many centuries of epistemology. (At the end of the excerpt is an example of what a conventional "indirect perception" approach looks like, for comparison.) The term “ecological” refers to a view of the animal and its environment as an integrated and co-evolving whole, as opposed to the conventional approach which seems to view the animal as an arbitrary observer placed into an arbitrary context.
http://media.pluto.psy.uconn.edu/gibson.html

An excerpt from Beyond The Brain by Louise Barrett in which she offers an overview of Gibson's perspective.
http://media.pluto.psy.uconn.edu/barrett ch 6.pdf

UConn Psychology Department's Center For The Ecological Study Of Perception And Action (CESPA) is the world leader in developing and promoting Gibson’s ideas and advancing research and theory in ecological psychology.
https://cespa.uconn.edu/