Class 19 - April 6
Behaviorism

I. The Rise of Behaviorism

From the early seventeenth century through the nineteenth century, Cartesian dualism and the pre-eminence of consciousness as definitive of the mental dominated philosophical thought about the mind.
The most influential philosopher of the eighteenth century, Immanuel Kant, agreed with Descartes that the ability to reason distinguished humans from other animals, that minds were different in kind from bodies, and that our understanding of ourselves must be rooted in our conscious experience.
Developments in the nineteenth and early twentieth centuries started to erode the Cartesian view.
By 1980s, there were at least four major alternatives to Cartesian dualism, and many minor variations.
Substance dualism is now mostly regarded as dead.
Latent Cartesian views about consciousness remain, but mostly in popular opinion, rather than in philosophical or scientific domains.
The most salient remaining question about which the Cartesian view remains vital concerns whether our first-person access to our mental states is somehow special or privileged.
We will return to that question at the end of our unit on mind.

The first sustained twentieth-century attack on Descartes's dualism came from a variety of sources which we can loosely group together as behaviorists.
Among the behaviorists were logical positivists, psychological behaviorists, linguistic philosophers.
The positivists (e.g. Hempel) and the psychological behaviorists (e.g. Skinner) were united in their desire to dispense with metaphysical speculation in favor of concrete, observable scientific evidence.
The linguistic philosophers (e.g. Ryle and Wittgenstein) agreed that appeals to obscure internal processes were dispensable, and that we should explain behavior in terms of what is observable.

The methods of psychology, until the time of the positivists, relied almost exclusively on introspection.
Freud, Adler, Jung, and William James all agreed with the Cartesian view that we have privileged access to our mental states.
Introspective psychologists believe that we can know about our own minds best by reflection, and the only way to know about the minds of others is by their reports of their own mental states.
The increasing importance of unconscious mental states to psychological explanation eroded the Cartesian notion that the essence of mental states is their consciousness.
Gilbert Ryle derided the Cartesian view of the mind, which he calls the official theory, as of the ghost in the machine.
He calls unconscious mental states channels tributary to the stream of consciousness.

> True, the evidence adduced recently by Freud seems to show that there exist channels tributary to this stream, which run hidden from their owner. People are actuated by impulses the existence of which they vigorously disavow; some of their thoughts differ from the thoughts which they acknowledge; and some of the actions which they think whey will to perform they do not really will. They are thoroughly gulled by some of their own hypocrisies and they successfully ignore facts about their mental lives which on the official theory ought to be patent to them. Holders of the official theory tend, however, to maintain that anyhow in normal circumstances a person must be directly and authentically seized of the present state and workings of his own mind (Ryle, *The Concept of Mind*, p 14).

It is not clear that the existence of unconscious thought thoroughly devastates the Cartesian view of consciousness as the characteristic mark of the mental.
The introspective psychologist can maintain a focus on consciousness by noting that even unconscious mental states may eventually become conscious.
They are at least potentially conscious.
Further, the way that early psychologists tried to access unconscious mental states was through introspection.

More threatening to introspective psychology is that there is no way to test or verify what some one says about their own mental states.
In other words, the Cartesian view resists proper scientific treatment.
Furthermore, the Cartesian, immaterialist view of persons (as minds or souls) was opposed by Darwin's work.
For the Cartesian, persons are markedly distinct from other animals by virtue of their distinct ability to reason.
Darwin's work evoked an understanding of human beings as no different in kind from, as contiguous with, other animals.
We have more advanced faculties than lower animals, but our ability to reason can be explained according to evolutionary principles.

Thus, from the point of view of science, including scientific psychology, in addition to the problem of mind/body interaction, the Cartesian view is unsatisfactory because it allows for no testable hypotheses and no observational access to the mind.

II. Hempel and Positivism

Hempel was a member of the Vienna Circle, a group of scientists and philosophers whose members became known as logical positivists.
The positivists were inspired by an early work of Wittgenstein, the *Tractatus Logico-Philosophicus*, as well as the nineteenth- and early-twentieth-century developments in logic, from Frege and Russell.
The *Tractatus* promoted a program of constructing representations of the world out of basic facts using logical tools.
The positivist's project was developed in and around Vienna between WWI and WWII by philosophers such as Rudolph Carnap, Otto Neurath, Moritz Schlick, and Herbert Feigl.
Their group came to be known as the Vienna Circle.
There was a similar, though less-influential, Berlin Circle, centered around the physicist Hans Reichenbach.
The young A.J. Ayer visited Vienna from England and wrote about the movement he found there.
His *Language, Truth, and Logic*, from which our selection is taken, became the primary source for positivism for English-speaking philosophers, though most of the positivist's central works eventually were translated into English.
Wittgenstein eventually disavowed the *Tractatus* and abandoned the positivist movement, though the positivists continued without him.
The culmination of the positivist's project was Carnap's 1928 *The Logical Structure of the World* or *Aufbau*, which was not available in English until 1967.
Carnap had been a student of Frege's in Jena, Germany.
In the *Aufbau*, Carnap attempts to develop scientific theory, using the tools of logic, out of sense-data, or sense experiences.

Wittgenstein and the logical positivists were responding in large part to Hegelian idealism, and speculative metaphysics generally, which had taken root in Europe after Kant.
They were intent on ridding philosophy of what they deemed to be pseudo-problems, pseudo-questions, meaningless language, and controversial epistemology.
Focused on science, the positivists derided such concerns as:

A. The meaning of life
B. The existence (or non-existence) of God
C. Whether the world was created, with all its historical remnants and memories, say, five minutes ago
D. Why there is something rather than nothing
E. Emergent evolutionary theory, and the elan vital
F. Freudian psychology
G. Marxist theories of history

The positivists presented a verificationist theory of meaning, inspired directly by Hume.
Hume believed that for a term to be meaningful, it had to stand for an idea in one's mind that could be traced back (in some sense) to an initial sense impression.
For Hume, terms like 'God' and 'soul' were meaningless, since they correspond to no sense impression.
The verification theory says that for a sentence to be meaningful, it must be verifiable on the basis of observation.
Any sentence which is unverifiable, like any of the examples A-G above, is meaningless.
They have no hope of being verified.

Furthermore, the positivists believed that the meaning of a statement consists in just the methods we use to verify the statement.
So, 'John has a toothache' means that John holds his mouth, and cries, and has swollen gums, etc.
It does not mean that there is some inner sensation, pain.
Note that the positivists are concerned with the meaning of psychological terms.
The focus on language was a central element of most twentieth-century philosophy.
The positivists and linguistic philosophers wondered what 'pain' means, rather than what pain is.
Instead of trying to determine the nature of mental states, or whether the mind is material, the positivists thought that these questions were pseudo-questions.

By ascribing verifiable, behavioral meanings to sentences referring to mental states, the positivists turned such sentences into legitimate scientific hypotheses.
But, they ignored or denigrated any introspective aspect of mental-state vocabulary.

III. Behaviorism and Positivism

The behaviorist approach to psychology, endorsed by the positivists, rejected introspection in favor of behavioral analysis.
The positivists interpreted terms which referred to mental states as shorthand for behavior.
The psychological behaviorists worked to describe and predict behavior.
Thus, Skinner writes that behavior is a function of environmental history.

> The practice of looking inside the organism for an explanation of behavior has tended to obscure the variables which are immediately available for a scientific analysis. These variables lie outside the organism, in its immediate environment and in its environmental history (Skinner 162b).

If we knew all of a person's antecedent experiences we could predict with certainty his or her behavior.
Since we can not know all of a person's antecedent experiences, we can only predict with probability.
Still, in theory all that we need to know to predict a person's behavior is what happens to that person, and not what his or her inner, mental life is like.
Thus, for both the positivist and the behaviorist, psychology can be a legitimate science.
We can have observational access to people's minds, since mental states are just behaviors and we can watch people behaving.
We can test specific psychological hypotheses, since they are hypotheses about behavior.

Hempel distinguishes his logical behaviorism from psychological behaviorism.
Logical behaviorism is a claim about the logic of psychological statements, that they are verified in the same way as other physical statements.
Since statements about the phenomenal aspects of my mental states as revealed by introspection can not be verified, they have no meaning.
The psychological behaviorist similarly denies that internal mental states play any role in predicting and explaining behavior.
So far, the two theses appear to be the same.
The psychological behaviorist may say that the domain of research must be restricted to stimulus and response.
The logical behaviorist accounts for this restriction, which Hempel doesn't even want to call a restriction, by claiming that any statement which does not admit of verification is not a real statement.
I will proceed by ignoring the differences between the two positions.

Hempel agrees that what is left of psychology after introspection is eliminated according to positivist, verificationist, principles, is a physicalistic science.
Terms of psychology really just mean their behavioral manifestations.
Behavioral manifestations are physical.
So, psychology is a physical science.

IV. The Redundancy of Introspective Explanation

Hempel uses Neurath's analogy of a watch to argue that introspective explanations are eliminable.

> The complicated statements that would describe the movements of the hands of a watch in relation to one another, and relatively to the stars, are ordinarily summed up in an assertion of the following form: "This watch runs well (runs badly, etc.)." The term "runs" is introduced here as an auxiliary defined expression which makes it possible to formulate briefly a relatively complicated system of statements. It would thus be absurd to say, for example, that the movement of the hands is only a "physical symptom" which reveals the presence of a running which is intrinsically incapable of being grasped by physical means, or to ask, if the watch should stop, what has become of the running of the watch (Hempel 169a-b).

When we say that a watch is running well, we use that statement as a shorthand for a much longer statement about the correspondence between the movement of the watch and the rotation of the Earth and

its revolution around the sun.
Further, Hempel argues that when we use psychological terms, we use them as shorthand for complicated statements about people's behavior.
Just as we don't look for something called the running of the watch, of which its running is just a symptom, and we don't look for some ineffable basis for the temperature of a gas, we should not look for something ineffable inside us when we attribute mental states to ourselves.
Our mental states are just their physical manifestations.

Skinner considers, "He eats because he is hungry."
He calls this sentence a redundant explanation.

> A single set of facts is described by the two statements: "He eats" and "He is hungry." A single set of facts is described by the two statements: "He smokes a great deal" and "He has the smoking habit." A single set of facts is described by the two statements: "He plays well" and "He has musical ability." The practice of explaining one statement in terms of the other is dangerous because it suggests that we have found the cause and therefore need search no further. Moreover, such terms as "hunger," "habit," and "intelligence" convert what are essentially the properties of a process or relation into what appear to be things. Thus we are unprepared for the properties eventually to be discovered in the behavior itself and continue to look for something which may not exist (Skinner 162a-b).

Since there is one set of facts, it is not the case that a private inner state is a cause of a separate, observable action.

Skinner's claim seems suspect.
In some cases, there do seem to be two states at issue.
First, there is a mental state, of hunger.
Second, there is a physical state, of the body desiring food.
Certainly, Descartes would posit two states.
Skinner's argument against there being two states is that reference to internal states is otiose.

> It is obvious that the mind and the ideas, together with their special characteristics, are being invented on the spot to provide spurious explanations (Skinner 162a).

Skinner provides a range of examples: absent-mindedness, confused ideas, nervous breakdowns, shell shock.
All the examples posit an internal state to explain what seems to Skinner to lack a cause.
Insofar as such explanations lack scientific, neurological basis, Skinner is right that they are spurious.
Or, perhaps better, they seem unsubstantiated.

Additionally, parsimony is in the behaviorist's favor.
If we really could predict all of a person's behavior without reference to introspective mental states, then we could at least eliminate them from behavioral science.
Behaviorists' elimination of internal states limits the scope of their theories.
By definition, they eliminate all introspective states as both evidence and phenomena to be explained.
The question is whether the advantages in simplicity outweigh the losses in explanatory power.

A more-refined approach to the question might distinguish among Skinner's cases.
Absent-mindedness does seem to be non-explanatory.

Saying that I forgot to turn off the oven because I am absent-minded seems not to provide an explanation.
But consider, "She screamed because she was in pain," as a result of a piano falling on someone's foot.
The pain seems to be an essential element of the explanation.
If the piano, for some reason, did not cause any pain, there would be little reason for the screaming.
Pain seems to be a different kind of term from absent-mindedness.
It seems to refer to something really causally efficacious.

So, are inner states the causes of behavior or identical to them?
Do we think before we speak, or does our ascription of thought reflect only how we would have spoken?

V. Troubles for Behaviorism

The standard objections to behaviorism invoke mental states with no attendant observable behavior.
I can be in pain but not scream or wince.
Furthermore, often our overt behavior is the result of long causal chains of thoughts.
Jerry Fodor, whose work on functionalism we will consider next week, considers a chess player who quietly thinks about a range of possible moves before acting.
There is no overt behavior to distinguish among the distinct thoughts, to guide the train of thought.

A related worry comes from a thought experiment, the inverted spectrum, constructed by John Locke.
Even if my inner images of colors were inverted relative to your mental images, we might have the same behaviors regarding those colors.
Still, there is a difference between our mental states.

Skinner argues for behaviorism because observable behavior is available for scientific analysis.
But, if internal states were available for scientific analysis, then we could have a scientific theory of introspective states and behaviorism would be under-motivated.
The question is how one could develop a scientific theory of consciousness.
Such a theory could be pursued in two ways.
We could examine brains and their states.
Or, we could try to look at mental states directly.

Against the first suggestion, Skinner argues that detailed neurological information would be useless for a theory of behavior.

> We do not have and may never have this sort of neurological information at the moment it is needed in order to predict a specific instance of behavior. It is even more unlikely that we shall be able to alter the nervous system directly in order to set up the antecedent conditions of a particular instance. The causes to be sought in the nervous system are, therefore, of limited usefulness in the prediction and control of specific behavior (Skinner 161a).

Skinner provides no evidence that neurological information is irrelevant to explanations of behavior.
And the evidence seems to favor at least some neurological explanations.
We can affect how people think and behave by stimulating different areas of their brains.
For example, consider transcranial magnetic stimulation (TMS).
By stimulating neurons, we can alleviate depression in some patients.
That is, we can change people's mental states merely by massaging their brains.
This seems like evidence that the workings of the brain are in some deep way related to our mental states.

Of course, punching me in the gut will affect my mental states, as well.
But, the brain seems to have a deeper causal connection with my mental states.

The second suggestion would be even more damaging to Skinner, but it is not clear how to do this.
The hard problem of consciousness rears its head.

VI. Behaviorism and Dualism

Since behaviorism was developed to avoid dualism and its problem of interaction, it is interesting to note that the two theories are not inconsistent.
Skinner and Hempel wanted to form a scientific theory of human behavior which eschewed appeal to the inner workings of the mind.
A dualist might be willing to accept their accounts of human behavior, but hold that mental states are real, nonetheless.
The behaviorist could have the domain of behavior, and the dualist can retain a mental life.
This would be a major concession on the part of the dualist, of course, since the dualist would be admitting that mental states play no causal role in behavior.
Still, as far as the psychological and logical behaviorist accounts are concerned, one could maintain at least an epiphenomenal account.
Epiphenomenalism says that there are irreducibly mental states, but they do not affect physical ones.
That is, there are mental states, but the direction of causation goes just from the physical to the mental.
Epiphenomenalism thus may be a weak form of substance dualism.

Later behaviorists, especially Ryle, strove to eliminate the compatibility of behaviorism and dualism, using logical and linguistic tools.
Ryle argues that proponents of Cartesian dualism make a category mistake.
His idea is that mental states are just another way of looking at physical (behavioral) states, and not additional kinds of states.
In order to account for mental states which did not correlate with actual verifiable behavior, Ryle supplemented the original behaviorist account by identifying mental states with dispositions to behave.
Pain, for the later behaviorist, was a tendency for behavior, not an introspective state but the disposition to scream, cry, wince, etc.
The stoic who endures pain without showing it seems impossible for the early behaviorists.
Ryle accommodates some mental states which have no associated behavior.
If I have a disposition to scream and wince, then the behaviorist can ascribe to me the pain, even with no attached behavior.
But, the behaviorist maintains that mental states are identified with at least some disposition to behave.
According to the dispositional theory, I don't cry because I am sad; my sadness is my disposition to cry.
I don't say that the apple looks red because I see red.
My seeing red just is my statement, and other related behaviors.
In contrast, if somebody speaks or acts in certain ways, it is natural to speak of this speech and action as the *expression* of his thought.
Even for the dispositional behaviorist, the question of why I scream when I am in pain remains without an internal account.

Furthermore, problems of inverted spectra cannot be solved by appeals to dispositions.
The materialists, or identity theorists, believe that they have a better alternative, one which relies on brains and their states.