

Philosophy 1320: Theories of the Mind, Stern College - Yeshiva University, Spring 2007
Russell Marcus, Instructor
email: philosophy@thatmarcusfamily.org
website: <http://www.thatmarcusfamily.org/philosophy/Mind/MindHome.htm>

Lecture Notes, April 18

I. Eliminative materialism and identity theory

According to identity theory, every mental state is identical to a physical state, and so we can replace any sentence which refers to mental states with ones which refer only to physical states.

We can thus reduce psychological theory to physical theory.

Psychological theories remain legitimate theories, for the identity theorist.

The eliminative materialist instead urges that we should get rid of our ordinary psychological theories.

There are two different approaches to eliminative materialism.

Rorty argues that mental concepts are superfluous, and so should be eliminated from serious science.

Churchland argues that mental concepts are the misleading results of bad (rudimentary) science.

Both approaches share the prediction that mature neuroscience will have no need for introspective psychology.

II. Rorty's Antipodeans

Rorty argues for eliminative materialism from the sufficiency of physical theories to account for everything for which psychological theories are supposed to account.

He considers an alien people, called the Antipodeans, who are exactly like us except that they do not have any psychological theories.

While the Antipodeans act just like us, they have no psychological concepts.

Rorty's Antipodeans actually differ from us Terrans in two ways.

First, the Antipodeans lack terms for minds and mental states.

Second, Antipodeans have precise understandings of neural states, to which they refer whenever we would refer to a mental state.

Their understanding of neural states is so precise that they can even discern the different mental states which arise from apprehending every different sentence, and having every different kind of sensory experience.

Rorty argues that no evidence will help us decide whether Antipodeans actually have mental states.

Since the claim that they have minds is in principle unjustifiable, we should, says Rorty, suspect that there is something wrong with our own theories of minds.

If the Antipodeans can get along without mental concepts, so should we.

III. Do Antipodeans have minds?

The Antipodean's lack of mental concepts does not necessarily entail that they lack minds.

Dogs, or, more plausibly, flies, lack concepts of eyes, but have eyes.

We might say that the Antipodeans have minds, even if they merely refer to their neural states when we would talk about minds and mental states.

Thus, the soft-minded philosophers do not worry about the question; they just attribute minds to the Antipodeans on the basis of behavior and functional role.

Essentially, this is Dennett's intentional stance: anything to which we can usefully attribute intentions to has intentionality.

These soft-minded philosophers wonder only whether the way that Antipodeans relate to the world is different, p 352.

But, we can put the soft-minded philosophers aside.

The tough-minded philosophers want to know if the Antipodeans really have minds, or if they are zombies.

They, and we, want to know whether the Antipodeans have sensations, and not merely whether they have states with the same functional roles as our sensations.

The question is about the sensations, or qualia, themselves.

The Terran philosophers and scientists attempted fruitlessly to devise experiments to determine whether the Antipodeans have qualia, or "raw feels".

They try connecting Terran brains with Antipodean brains.

If the Terran speech center reported a missing state, or if the Antipodean speech center reported an extra state, there would be evidence that normal Antipodean brains lacked something that Terran brains have.

But the answers to questions about the presence of qualia correlate exclusively with the brain that controls speech.

Either way, the linked organism says that things are just as normal.

The Terran brain does not notice any missing mental states, which supports attributing qualia to the Antipodeans.

The Antipodean brain does not notice anything extra, which supports denying that Antipodeans have qualia.

IV. Are Antipodean reports of neural states inferential?

We might try to determine if Antipodeans have qualia by examining whether their reports of their neural states are inferential.

If the Antipodean reports are inferential, they must be inferences from some immediate data, which might be qualia.

If their reports are direct, or non-inferential, then they are apprehending neural states as we apprehend our qualia, and thus we have evidence against attributing qualia which would mediate those reports.

For Terrans like us, reports of our neural states would ordinarily be inferred like this:

1. I'm having a toothache. (Non-inferential, immediate datum)
2. Toothaches are correlated with stimulations of C-fibers. (Acquired principle)
3. So, my C-fibers are being stimulated. (Inference).

If their reports are similarly inferential, they will look like inferences from some immediate data. The immediate data would presumably be their mental states, the contents of their minds. Thus, we could conclude that the Antipodeans have minds.

Unfortunately, this argument from analogy fails, and for two reasons.

First, it does not seem that all of our reports of neural states have to be inferential in this way.

We can be trained to make non-inferential observations of our own mental states.

Just consider what it would be like to be raised in Antipodean society.

We would learn to say, "My c-fibers are stimulated," instead of, "I am in pain."

We could say such things non-inferentially.

Second, we just do not know whether the Antipodeans are relevantly like us.

This second problem with the argument is an instance of the problems with arguments from analogy.

V. Are Antipodean reports of neural states incorrigible?

The previous attempt to determine if Antipodeans have qualia, and thus minds, relied on the fact that we are traditionally taken to have unmediated, non-inferential access to our mental states.

Another traditional distinguishing characteristic of the mental is its incorrigibility.

We can not seem to be in pain without being in pain.

We can not be in pain without seeming to be in pain.

Similarly, seeming to see red and seeing red are equivalent.

We can be in the presence of a ripe tomato, in a well-lit room, with our retinas illuminated by light rays reflected from the tomato's surface without seeing red, perhaps.

But, we can not, according to the Cartesian, see red without seeming to see red.

Taking this lesson to the case of the Antipodeans, if the Antipodeans reports of their neural states lack the incorrigibility of Terran reports of their mental states, then we would have good reason to think that the Antipodeans lack mental states.

Unfortunately, the Antipodeans have the same relation to their neural states that Terrans have to their mental states, p 353-4.

One might think that the incorrigibility of Antipodean reports of neural states could be taken as evidence for them having qualia.

While 'my C-fibers are stimulated' would not indicate the presence of a mental state, 'my C-fibers seem to be stimulated' would.

The Antipodeans do not distinguish between seeming to have a neural state and actually having that state. They just admit that some reports of their neural states can be mistaken.

So, it is again unclear whether their reports of C-fiber stimulation are the result of qualia, raw feels, or whether they are just reports, p 354.

VI. Lessons from the failures to determine if Antipodeans have qualia

It seems that there is not only no good evidence for or against the Antipodeans having minds, it seems that there is no possible evidence that could answer the question.

If no possible evidence can decide the case, then, Rorty thinks, we should question whether mental concepts are legitimate, even for Terrans.

It seems to us that our mental states play a vital role in explanations of our behavior, and in causal explanations of physical phenomena.

But, our mental states play no role in explanations of our behavior, and of other physical phenomena, that could not be replaced by references to neural states.

The hypothesis that we have minds, and that our mental states play roles in our behavior, seems eliminable.

Moreover, if we get rid of the hypothesis that we have minds, we lose the gap between our minds and the world.

Notice that the Antipodeans lack the primary/secondary distinction.

They do not hold a representational theory of mind.

Rorty calls the primary/secondary distinction "Locke's veil of ideas".

As Berkeley showed, if we think that our minds replicate an external world, or act as a mirror of nature, then we have difficulty justifying knowledge of that external world.

On the other hand, if we think of ourselves as having a more direct connection with the world, a causal relation, as the Antipodeans do, then we are not stuck behind a veil.

Thus, consider how the Antipodeans responded to the question of whether their neural state appears indigo, p 353.

They say that the light appears indigo.

They are not stuck in a mental world of idea.

They have a direct, Aristotelian connection with reality.

Similarly, Rorty thinks, we do not have an incorrigible connection with our isolated mental states.

We have a corrigible apprehension of the world.

VII. Churchland's eliminative materialism

Rorty urges the elimination of mental concepts, even if they are good correlates of neural reports.

Churchland urges that our mental concepts are not good descriptions of the world.

First, she defends what is called theory theory: our psychological explanations are expressions of a theory of the mind called folk psychology.

Folk psychology is a theory which implicitly defines mental states.

Since folk psychology is like any other scientific theory, it is empirically testable.

And, it turns out, folk psychology, like other once-useful theories, is false, and should be replaced.

Churchland has two basic tasks.

First, she has to show that folk psychology is a science like any other science.

In pursuing this first task, she aligns herself with the materialist, reductionist, against the functionalist.

Then, she has to show that folk psychology is a false science.

VIII. The nature of scientific theories

On the first task, consider the nature of scientific explanation, generally.

The standard scientific model is called deductive-nomological.

There are general laws, like inertia, the law of gravity, the Lorenz transformations, Coulomb's law, etc.

These laws determine an outcome for any event, given initial conditions.

Thus, consider Coulomb's law, which states that the electromagnetic force between two charged particles is proportional to the charges on the particles and, inversely, to the distance between them: $F = k \frac{|q_1 q_2|}{r^2}$.

Given any set of initial conditions, the charge on each of two particles and the distance between them, we can deduce the force which holds between those two particles.

Similarly, deductive relations hold among the general laws of folk psychology, due to the logic of the propositional attitudes referred to by those laws, pp 357-8.

IX. Causal and rationality relations

Some critics of theory theory argue that the deductive relations in folk psychology are guided by a rationality relation among propositional attitudes, rather than a causality relation among events, p 358.

Call this most important criticism anti-reductionism, since the claim is that relations among mental states (specifically the propositional attitudes) are not reducible to causal relations among brain states.

According to the anti-reductionist, neuroscientific explanations will proceed according to the causal relations among events in the brain.

Psychological explanations proceed according to the logical, or rational, relations among propositions.

The relationship between neurological and psychological explanations is like the relationship between the explanation of a calculator's results in terms of circuitry, or in terms of input, p 360.

Prima facie, the two distinct levels of explanation seem incompatible.

One level is "semantically coherent", and the other is "causally interconnected".

Churchland presents this same problem in several different ways.

She says that cognitive psychology is irreducible and autonomous, p 361, since logical relations can not be reduced to causal relations.

Another way Churchland puts the problem for the materialist: "The generalizations of psychology are emergent with respect to neurobiological theory (360)."

Phenomena are emergent if they do not reduce to lower-level phenomena.

Color and ant hills are both taken to be emergent phenomena, for example.

Atomic particles lack color, and ant hills are not designed.

Mental states are often thought to be emergent, on the supposition that they can not be explained by physics.

Here's a link to some research on [emergent phenomena](#).

These criticisms of theory theory come from the functionalist, since the same point can be made on the basis of multiple realizability.

Consider the various physical causes of the same belief that there is a fire in one's building, p 361.

The same mental state can have different antecedent physical states.

Thus, a final way to put the criticism is that the categories of psychology cross-classify, or are orthogonal to, the categories of neuroscience.

Note the difference between the use of multiple realizability in the Churchland/Pylyshyn case and its use in defending functionalism over identity theory.

Churchland's example refers to different ways that the same belief can be caused in human brains.

She defends her position by appealing to different levels of neurological organization.

At some low level, the same propositional attitude will be correlated with a variety of specific brain states.

But, she argues, at a higher level of abstraction, there will be a common neurobiological configuration.

The multiple realizability argument is stronger when applied to the possibility of mental states being instantiated by entirely different physical structures: robots and aliens.

Of course, the stronger argument is more difficult to defend.

X. The compatibility of causal and rational relations.

Churchland responds to the anti-reductionist that rather than mark a difference between folk psychology and other sciences, the rationality relation is just like other abstract relations, especially mathematical ones, p 358.

There are causal laws which govern interactions among bodies, including neurons in the brain.

There also are more abstract, or "formal", relations among the contents of these laws.

Some of these abstract relations are mathematical.

Some of these abstract relations are propositional.

If the inclusion of mathematical relations, which are not causal, in physical theories is no objection to those theories, then the inclusion of propositional relations, logical or rationality relations, should also be no objection.

Rather, the systematic structure which folk psychology inherits from the logic of the propositions which serve as the contents of the propositional attitudes should support theory theory.

The calculator's processes can be described both in terms of its circuitry and in terms of its representations.

Similarly, behavior might be explained both at the level of beliefs and desires (rational relations), and at the neurological (causal) level.

XI. More problems for the anti-reductionist

Churchland has been trying to defend theory theory against the (functionalist) anti-reductionist.

The anti-reductionist argues that folk psychology is not a proper scientific theory since propositional relations do not seem like causal relations.

The anti-reductionist arguments apply only to intentional states, mental states with propositional content.

Sensory states, memory, emotions, habits, and other mental states do not seem to have the logical structure that propositional attitudes have.

The anti-reductionist might try to portray all mental states as somehow propositional, but this approach seems implausible.

Churchland argues that the limited scope of the anti-reductionist argument weakens it.

But, the same problem applies to theory theory.

If there are no propositional relations, why should we take folk psychology as a scientific theory?

I will put this criticism of Churchland aside, though.

XII. One more anti-reductionist argument

Churchland thinks that there are two different kinds of support for irreducibility.

We have examined the first kind, that there is a gulf between mental explanations, like those among propositional attitudes, and physical, or naturalistic, explanation.

The other support comes, she says, from prejudices about the capacity of neuroscience, p 362.

Whether neuroscience can suffice for a theory of the mind should be an empirical question.

If we declare folk psychology, or cognitive science, to be autonomous and irreducible, then we shield it from empirical testing, pp 364-5.

We should seek respectability, by subjecting it to empirical scrutiny, rather than autonomy, which insulates the theory from criticism.