Phil 100D: Philosophy of Mind   Professor Aaron Zimmerman

<u>Handout #4: Armstrong's Functionalism</u>

1. Some ontological categories: object, properties, propositions, states.

Objects: An object is the kind of thing that has properties. (Physical objects occupy portions of space for periods of time. Abstract objects do not.) An object is the denotation or referent of a singular term: e.g., a name, or a demonstrative expression like 'that'.

Properties: A property is the kind of thing that objects have. Properties are instantiated by objects. An object's properties account for its causal powers (i.e. its powers to affect and be affected by things or to enter into causal relations). Properties are the things expressed by predicates or predicative expressions (e.g. 'is red' or 'is spherical'), gerundive expressions ('being red', 'being spherical'), and they are the denotations of predicate-nominals (e.g. 'justice', 'sphericality').

Propositions: A proposition is something that can be true or false. It is the kind of thing we believe when we believe something. It is the kind of thing we entertain when we think of something. It is the kind of thing we assert when we assert something. A proposition is what is expressed by a grammatical declarative sentence.

States: A state is a complex non-truth-evaluable entity; it is the having of a property by an object for some duration. So, for example, solidity is a physical state consisting of an object's molecules being structured in a particular way. Solidity just is the having of certain structural properties for a period of time. When an object or substance goes from the solid state to the liquid state it changes its properties: it goes from being solid to being liquid.

> Being in pain, believing that 2+2=4, and feeling sad are all *mental properties*.

> The state of a person's mind when she is in pain is a particular *mental state* as are the different states her mind is in when she concludes that 2+2=4 or feels sad.

2. More Metaphysical Distinctions

<u>Essential Property</u>: (a) For any object x and property P: x has P necessarily if and only if x exists, x has P, and x cannot exist without having P; (b) The properties an object has necessarily are that object's ***essential*** properties.

If it is possible for x to exist without having P, having P is not necessary for being x and P is not one of x's essential properties.

<u>Individuating Property</u>: (a) For any object x and property P: P suffices for being x iff x has P and for all objects y: if y has P, then y=x; (b) Those properties that suffice for being a particular object are those object's ***individuating*** properties.

If an object y has P without being x, then even if x has P, P does not suffice for being x and P is not one of x's individuating properties.

<u>A sufficient condition for intrinsicality</u>: For any object x and property P: P is an intrinsic property of x *if* for any possible object y: if y is an exact qualitative duplicate of x then y has P.

Thus, if x has a certain property Q that is had by all of the qualitative duplicates of x that are possible, then Q is an intrinsic property of x.

Note, however, that the condition above is sufficient but not necessary. Take a property G that is not had by all of x's possible intrinsic duplicates, this *does not entail* that G is not an intrinsic property of x's. Why? Because G might be the property: being x. Intuitively, being x is intrinsic to x, but being x is not a property had by anything other than x.

<u>Haecceity</u>: For any object o: o's haecceitic properties include its being o and all those properties of its internal make-up that entail its being o (if there are any such properties).

       Example: Being the produce of a certain sperm-egg interaction?

<u>Intrinsic Properties</u> An object's intrinsic properties are its haecceitic properties and all of those non-haecceitic properties it shares with all of its qualitative duplicates.

       Examples: Shape, size, surface color?

<u>Dispositional Properties</u>: For an object x and property P, P is a dispositional property of x if and only if x's having P *is identical to* x's being disposed to behave in ways $w_1..w_n$ given certain conditions $c_1...c_n$.

       Examples: Solubility, fragility.

<u>Causal Powers</u>: For any object x, intrinsic property P, and dispositional properties D: D are the *causal powers* bestowed on x by P if and only if x has D in virtue of having P.

Examples: A fragile bowl will shatter when struck. Its disposition to shatter when struck is a causal power of it. It has this causal power in virtue of its microstructure. Its micro-structural properties (i.e. its having molecules that are arranged and bonded to one another in a certain way) are intrinsic properties that bestow this dispositional property/causal power on the glass bowl.

3. Functional Accounts of Mental States

A *functional property* P is a property for which there exists a dispositional profile (or set of dispositions) D such that for any x: x's having D is necessary and sufficient for x's having P.

A *functional state* is the state of some object's having some functional property.

Being a carburetor is a functional property. Nothing *can* be a carburetor and yet fail to be so disposed that it feeds an engine an explosive mixture of vaporized fuel and air when properly activated. Moreover, anything that is disposed to feed an engine an explosive mixture of vaporized fuel and air when properly activated is a carburetor.

Importantly, the matter out of which an object is constituted doesn't directly impact whether or not that object is a carburetor. Being a carburetor consists in functioning in a certain way, not in being made of a certain kind of stuff. You classify being a heart as a similarly functional property so long as you think an artificial heart is a heart.

Type-Functionalism: Types of mental states are identical with types of functional states.

Example schema 1: being pain=being disposed to produce behaviors of type B1…Bn and mental states of types M1…Mn when presented with stimuli of types of T1…Tn given that one is in mental states of types S1…Sn.

Example schema 2: Believing that 2+2=4 =being disposed to produce behaviors of type B1…Bn and mental states of types M1…Mn when presented with stimuli of types of T1…Tn given that one is in mental states of types S1…Sn.

> *Question*: How might we fill these schemata out?

Token-functionalism: Mental state tokens are identical with token functional states.

> *For example*: John's pain at t=the state of John's being disposed at t to produce behaviors of type B1…Bn and mental states of types M1…Mn given that he has been presented with stimuli of types of T1…Tn and is in mental states of S1…Sn.

Analytic truth: a sentence s is analytically true if and only if s expresses a truth in virtue of the meanings, concepts or intensions of its constitutive expressions alone and their mode of combination in s. If s is analytically true it is impossible for s to express a falsehood so long as it retains its customary meaning.

> Putative Examples: 'If there is a strongest man, then he is stronger than every other man', 'Vixens are foxes', 'Bachelors are unmarried'.

Synthetic truth: (Negative characterization): A sentence s is a synthetic truth if and only if s expresses a truth but s is not analytically true. (Positive characterization): A synthetic sentence is one in which the concept associated with the predicate is added to the concept that delimits the sentence's subject. If s is synthetically true it is possible for s to express a falsehood while retaining its current customary meaning.

Examples: 'I am teaching', 'Grass is green', 'Trump is president'.

A priori knowledge: A proposition p is known a priori by a subject S if and only if S knows p and S's reasons for believing p do not include facts about S's sense experience.

Examples: A mathematician's knowledge that 2+2=4. Your knowledge that all bachelors are unmarried.

A posteriori knowledge: A proposition p is known a posteriori by a subject S if and only if S knows p and S's reasons for believing p do include facts about S's sense experience.

Examples: Your knowledge that Trump is president. Your knowledge of the weather.

Questions: Is 'Samuel Clemens=Samuel Clemens' analytic or synthetic? 'Is Samuel Clemens=Mark Twain' analytic or synthetic? Is John's knowledge that (if he exists) Samuel Clemens is Samuel Clemens a priori or a posteriori? Is John's knowledge that (if he exists) Samuel Clemens is Mark Twain a priori or a posteriori?

Analytic or A Priori Functionalism: Mental concepts are functional concepts. The concept a person has in mind in virtue of understanding 'belief', 'desire', 'pain', and 'anger' are best "unpacked" or analyzed as concepts given or expressed by expressions of the form: 'being disposed to produce behaviors of type B1…Bn and mental states of types M1…Mn when presented with stimuli of types of T1…Tn given that one is in mental states of types S1…Sn'.

(*) 'Believing that it is raining outside=being disposed to take an umbrella when it looks to one as though it is raining outside or someone tells you that it is raining outside. . .and one wants to stay dry or one wants to help someone else stay dry . . . ..'

(**) 'Wanting to stay dry=being disposed to take an umbrella when it looks to one as though it is raining outside or someone tells you that it is raining outside. . .and one believes that things are as they seem or believes that things are as one has been told they are, and believes that umbrellas help one stay dry and . . .'

The analytic functionalist thinks equations like (*) and (**) are true and analytic: i.e. true in virtue of the meanings of the terms involved. They also think that (*) and (**) are a priori knowable—they can be shown to be true by philosophers doing conceptual analysis. The construction of experiments and the observation of the results of those experiments is not necessary. In this sense (*) and (**) are definitional truths we can use

to interpret the results of experiments rather than hypotheses confirmed through experimentation.

Synthetic or A Posteriori Functionalism: There are true equations identifying mental properties with functional properties, but they cannot be known a priori. We must rely on theories and our observations of the results of experiments performed by cognitive scientists to discover these truths.

Armstrong is an analytic functionalist.

4. The Functionalist Response to the Property Dualism Argument.

(a) Water=H20.

The identity theorist (like Smart) claims that (a) is true but that it is not analytic and the proposition it expresses is only knowable a posteriori.

How can this be? Frege offers an answer: The meaning of 'H$_2$O' and the meaning of 'water' do not simply consist in the substances these expressions pick out.

So what is the meaning of (a)? The descriptivist has an answer. It's something like the proposition expressed by the following sentence:

(b) The clear, drinkable, exceedingly common liquid that fills the lakes, and streams around here=the stuff composed of molecules of two Hydrogen atoms and one Oxygen atom.

So we have **two** (higher-order) properties: (*) *being a clear, drinkable, exceedingly common liquid filling the lakes and streams around here*, and (**) *being composed of molecules of two Hydrogen atoms and one Oxygen atom*, had by **one** substance: water/H$_2$O.

In this case, the two different properties provide **two different ways of knowing** the one substance. The proposition is synthetic because these two *different* properties are the meanings of the relevant expressions (or are determined by the meanings of the relevant expressions). The proposition is only knowable a posteriori because experiments are needed to provide one with a reason to believe that these are two properties of one and the same substance.

But now consider:

(c) Pain=Neural Events of type T.

Clearly, this is not analytic and the proposition it expresses cannot be known a priori. How can this be? The Fregean descriptivist needs to provide an identity that captures the meaning of (c). The appropriate statement would look something like this:

(d) This type of experience=the activation to level L of neural nets of type N in anatomic structures A in the human brain and central nervous system.

(where 'this type of experience' is used by a person in pain to pick out the sensation she is experiencing while in pain).

So what are the two properties by which we know of pain? *Being activation to level L of neural nets of type N in anatomic structures A* is clearly a physical property the realization of which can only be known via observation of the nervous system by those who know the relevant theories of cognitive neuroscience. But ***being this type of experience*** [when this phrase is uttered by someone in pain focusing on their pain) looks to be a <u>mental property</u> of the pain in question. Thus, while Smart's Fregean view seems to allow him to avoid **object dualism** it seems to force him into **property dualism**.

Armstrong's response: Replace (d) with (e):

(e) being disposed to produce behaviors of type B1…Bn and mental states of types M1…Mn when presented with stimuli of types of T1…Tn given that one is in mental states of types S1…Sn= the activation to level L of neural nets of type N in anatomic structures A in the brain and central nervous system.

And so long as our ordinary concepts of M1…Mn and our ordinary concepts of S1…Sn can also be given functional analyses (a big "if" to be sure) we can avoid property dualism. For instance, *being disposed to produce behaviors of type B1…Bn and mental states of types M1…Mn when presented with stimuli of types of T1…Tn given that one is in mental states of types S1…Sn* is not a mental property (so long as the other Ms (i.e. metal properties) mentioned in the analysis can be analyzed in similar terms). Instead, this description gerundive phrase picks out a functional or ***topic neutral property***. In this way, Armstrong tries to escape the property dualism argument.

So this is Armstrong's view: When suitably filled out, 'pain= being disposed to produce behaviors of type B1…Bn and mental states of types M1…Mn when presented with stimuli of types of T1…Tn given that one is in mental states of types S1…Sn' is ***analytic***.

Our knowledge that pain=being disposed to produce behaviors of type B1…Bn and mental states of types M1…Mn when presented with stimuli of types of T1…Tn given that one is in mental states of types S1…Sn is ***a priori***.

'Pain=the activation to level L of neural nets of type N in anatomic structures A in the brain and central nervous system' is ***synthetic***.

Our knowledge that pain=the activation to level L of neural nets of type N in anatomic structures A in the brain and central nervous system is ***a posteriori***.

Question: How plausible is Armstrong's claim that 'pain= being disposed to produce behaviors of type B1…Bn and mental states of types M1…Mn when presented with stimuli of types of T1…Tn given that one is in mental states of types S1…Sn' is analytic and the proposition it expresses a priori knowable? Does Putnam effectively refute this variety of analytic functionalism with his Super Spartans counter-example? Are Super Spartans a coherent idea?