

Types and tokens

Here is a way of thinking about the “type”/“token” distinction. Look at this box:

mind	body	love
love	hate	mind
mind	love	body

How many words does the box contain?

It depends on how you count. In one sense, the box contains nine words, arranged in a 3x3 square. But in another sense, it contains only four words—four *different* words, that is--“mind,” “body,” “love,” and “hate.” The reason for the disparity is that the box contains more than one **token** of the same word-**type**. There are three different tokens, or occurrences, of the word(-type) “mind,” and three tokens or occurrences of “love,” and two of “body,” and just one of “hate.” That adds up to nine tokens, but there are only four types represented in the box.

Suppose there are four creatures who are all in pain right now, as I write this, at 10:55 p.m. on Tuesday, February 3, 2009. They are: Jack, David, Oscar, and Click*Two-Squeaks. Jack is Jack Smart, Professor J.J.C. Smart as we know him, author of “Sensations and Brain Processes.” David is D.M. Armstrong, author of *A Materialist Theory of the Mind* and other light classics. Oscar is an octopus, author of nothing much. Click*Two-Squeaks is a Venusian (that’s why I could produce only an approximation of his real name).

Suppose further that each of our four victims is in some physiological state or other that occupies the common-sense causal role we associate with pain. Jack’s c-fibers are firing, and their doing that is the state that is, in him, typically caused by bodily damage and typically causes grimacing, wincing and bla bla bla [“pain” behavior]. David’s c-fibers are firing too. Oscar doesn’t have c-fibers, but he has *o-cells* that by coöperating in some way also play the common-sense “pain” role. Click*Two-Squeaks isn’t even carbon-based, much less has c-fibers, but is in a characteristic physiological state that Venusian doctors call “plink-sh’mp#!ing,” that plays the common-sense “pain” role in Venusians.

Assume just for the sake of exposition that Armstrong's theory of the mind is correct. Then, in virtue of the facts just recorded, Jack, David, Oscar and Click*Two-Squeaks are all in pain. Being in pain is something they all have in common; pain is a *type* of mental state. And being *pains* is something their respective physiological states all have in common. So there is one single type of state that all our four characters are in. But there are four pain tokens or individual pains: Jack's pain at 10:55 p.m. on Tuesday, February 3, 2009, David's pain ditto, Oscar's ditto, and Click*Two-Squeaks'. The word "pain" can be used to mean either the type or a token of the type.

Now let's return to the Identity Theorist's statement, "Every mental state is identical with some brain state." What none of the Identity Theorists noticed at the time is that this formula is *ambiguous* as between state types and state tokens, and the difference matters.

Interpreted as referring to types, the Identity formula means that every mental state type is identical with some brain state type. This is the **Type-Identity Theory**. According to it, a mental state type, such as pain, is identical with a brain state type, such as c-fiber firing: Pain, always and everywhere, *just is* c-fiber firing, from which it follows that every creature that is in pain has its c-fibers firing. But it is the latter sort of claim that Putnam argues is chauvinist. Oscar and Click*Two-Squeaks seem to be in pain, but neither of them has c-fibers at all. Place or Smart might dig in his heels at this and insist that despite appearances, Oscar and Click*Two-Squeaks are not in pain, precisely because they don't have c-fibers; but that would seem arbitrary, callous and perhaps racist. Since the mind-brain correlations that Smart takes as evidence have been observed only in human subjects, we have been given no reason to think that the Identity Theory is true across the board, outside our species, which is to say that we have no reason to think the *Type-Identity Theory* is true.

What about the other interpretation of the Identity formula, in terms of tokens rather than types? On that interpretation, it says just that every mental state token is identical with some brain state token. This is the **Token-Identity** thesis, a far less ambitious claim than the Type-Identity Theory. And it is upheld by our interspecies scenario. We have four pain tokens, and each one is identical with some brain state token broadly speaking, or at least with some physiological state token: Jack's and David's pain tokens are identical with their respective c-fiber firings; Oscar's pain at 9:25 p.m. etc. is identical with his o-cell activation at that time, and Click*Two-Squeaks' is identical with his plink-sh'mp#ling then.

Thus, the Token-Identity thesis can be true even if/though the Type-Identity Theory is false, for it says nothing about types. (Of course, it is still a materialist thesis and may be false for other reasons. For example, the final objection put by

Black's ghost at the end of the Smart-Black handout works, if it does work, against the Token-Identity thesis just as much as it does against the Type-Identity Theory. We shall see that there is more to be said for Objection 4, too, despite Smart's bluff dismissal.)

If the Type-Identity Theory is indeed false, whether or not the Token-Identity thesis is true, we still need a type theory for pain, that is, an answer to the questions, "What is pain, per se?" and "What is it that all pains have distinctively in common?" (And so on for every other type of mental state.) Armstrong has given us such a theory, for the Causal Analysis serves as one: It says that pain (the type) is a certain causal role, and that what pains have in common is that they play that role.

Notice that as before, this Causal Theory of pain does not itself entail materialism, because for all it says, the "pain" role is sometimes played by ectoplasm states. The Type-Identity Theory entails the materialist Token-Identity thesis, but the Causal Theory does not. If one wants to appeal to the Causal Theory as a way of being a materialist, one must superadd the Token-Identity thesis, as Armstrong does.

Putnam offers us a different and competing type theory, though it resembles Armstrong's in being based on the idea of role-and-occupant. In class I called it Functionalism. However:

TERMINOLOGICAL WARNING

In his article, Ned Block uses the label "Functionalism" much more broadly than I do. He uses it (rightly) to include Putnam's theory, which he calls "machine functionalism" and Psychofunctionalism, but also to include the Causal Theory of Armstrong and Lewis, which he calls "a priori functionalism" and "Functionalism" with capital F. I regret any confusion caused by this. It's Block's fault. He should have his ears cut off.