

Hilary Putnam on the Nature of Mental States

Jason Zarri and David Marrufo

Topic: Putnam proposes to discuss the question, “Are pains brain states?”

I. Identity Questions

A. Putnam begins by examining certain rules that were in force in analytic philosophy at the time of his writing, for in his view the question of whether pains are brain states could not be sensibly discussed without examining them. These rules are:

1. Statements of the form “being A is being B” can only be true only if they follow from the meaning of ‘A’ and ‘B’.
2. Statements of the form “being A is being B” are philosophically informative only if they are reductive.

These are good rules, Putnam thinks, only if one still believes in a 1930’s style reductive analysis.

B. Some terminology:

1. For Putnam, *properties* are things which can be naturally represented by predicates and functors (of an arbitrary number of places).
2. For Putnam, *concepts* can be identified with synonymy classes of expressions (although he doesn’t think they *are* synonymy classes).

C. To say that two properties, P_1 and P_2 , can only be identical if the terms ‘ P_1 ’ and ‘ P_2 ’ are synonyms is mistaken, and obliterates the distinction between properties and concepts.

D. Some philosophers think the sentence “Pain is a brain state” violates rules of English, but their arguments are unconvincing. If pain cannot be a brain state because one can know that one is in pain without knowing anything about one’s brain states, then temperature cannot be mean molecular kinetic energy because one can know that a stove is hot, and hence that it has a high temperature, without knowing anything about the energy of the molecules that make it up.

E. Some philosophers think that a property P_1 can be empirically reduced to a property P_2 only if they are both associated with a region of space-time, and the same one at that. Temperature and molecular energy can be associated with the same space-time region, but these philosophers think that having a pain in one’s arm and being in a certain brain state cannot. Putnam replies with an analogous case involving mirror images: No one would deny that the image is just reflected light, although it looks to be behind the mirror’s surface.

F. Some philosophers say that any evidence taken to establish an identity between pain states and brain states is just as good evidence that they are merely correlated with brain states. Putnam replies that if this were true, one could also say that any evidence taken to establish an identity between light and electromagnetic radiation is just as good evidence that light is merely correlated with electromagnetic radiation. If we have reasons to believe questions like “What is light, if it isn’t electromagnetic radiation?” and “What are pains, if they aren’t brain states?” are misconceived, we also have reason to believe that pains are brain states.

G. Putnam raises the question of whether saying that pains are brain states is meaningful, because it involves no change of meaning or extension of usage, or meaningless, because it does involve a change of meaning or extension of usage. Putnam thinks that both alternatives are so badly defined that he can’t accept either. How, then, can we address the question “Is pain a brain state?” Putnam says we should allow statements of the form “pain is A”, where ‘pain’ and ‘A’ need not have the same meaning, and see if such statements can be empirically confirmed.

II. Is pain a Brain State?

A. Putnam says he will offer an empirical hypothesis as to what pain is. He proposes to argue that pain is not physical-chemical brain state, but a wholly different kind of state, namely a functional state of an entire organism

B. Putnam introduces the concept of a *Probabilistic Automaton*, a concept which applies to Turing machines and other machines that go from one state to another with a certain probability, though for non-Turing machines the probabilities involved may be between 0 and 1. He generalizes the concept to include the idea that such an automaton can have sensory inputs which fix the probabilities for a transition to a new state or to a motor output. The states and inputs specified by the probabilities of transition. Putnam calls the set of probabilities of transition a *Machine Table*.

C. Putnam also introduces the concept of a *Description* of a system, because a system can realize multiple different Probabilistic Automata at the same time. A Description of a system is a true statement about it that says there are distinct states for which the probabilities of transition determine which states are correlated with which states, or with which sensory inputs, or with which motor outputs. The Machine Table of the system is the *Functional Organization* of that system under that Description, and any particular state of the system at some time t is the Total State of that system under that description at t .

D. Putnam is now in a position to state his conjecture that “being in pain is a functional state of the organism”:

1. Any organism which can feel pain is a Probabilistic Automaton.
2. Any such organism has a type of Description, and to be able to feel pain is to have a Functional Organization of the right type.
3. No such organism consists of parts which also have the type of Description that would satisfy (2).

4. For any Description of the type that would satisfy (2), there are some states such that an organism that that Description applies to is in pain if and only if its sensory input is one of those states.

E. Putnam thinks his conjecture is no more vague than the idea that pain is a brain state. Still, one can ask two questions about regarding it.

1. What kind of Functional Organization is necessary for being able to feel pain?
2. What is distinctive about the states mentioned in (4) above?

F. Putnam answers these questions as follows:

1. The Functional Organization must include a preference function, an inductive logic, and pain sensors.
2. The states mentioned in (4) are greatly disvalued by the organism's preference function.

G. Putnam thinks his conjecture is easier to investigate than the brain state hypothesis, both mathematically and empirically. The hard part is going to be how to generalize from specific organisms to psychological laws governing organisms in general. He then proposes, next, to compare his hypothesis with two rivals, that pain is a brain state and that pain is a behavioral disposition.

III. Functional State versus Brain State

A. Brain-state theorists admit only physical-chemical states, and exclude all non-physical states. Functionalism, according to Putnam, is compatible with Dualism.

B. Why prefer Functionalism to the Brain-State theory?

- a. The Brain-State theorist makes a very strong and implausible claim: any organism is in pain if and only if (1) it possesses a brain of a suitable physical-chemical structure, and (2) its brain is in that physical-chemical state.
- b. Thus, the physical-chemical state of pain must be a possible state in the brains of reptiles, mammals, mollusks, etc.

- c. Moreover, must also not be possible that any physical creature can be in that brain state and not feel pain.
 - d. Ambitious hypothesis: just as eyeballs have parallel evolutionary development across species, pain can have the same correlate across species. Putnam thinks this is highly implausible.
 - e. Brain-State theory becomes even more implausible when you consider that the theory puts forth the claim that every psychological state is a brain state and developed consistently across creatures in the same way. The Brain-State theorist can only save himself by *ad hoc* assumptions.
- C. Positive Arguments for Functionalism. Similarities in behavior give reason to believe in similarity in function (ex. thirst).
- a. Putnam believes it is more likely that psychological laws are species-independent than it is that neurophysiological laws are species-independent.

IV. Functional State versus Behavior Disposition

- A. “To argue that pain is neither a brain state nor a functional state is like arguing that heat is not mean molecular kinetic energy from the fact that ordinary people do not (they think) ascertain the mean molecular kinetic energy of something when they verify that it is hot or cold.”
- B. Behaviorist explanations of pain are circular, “pain =def the disposition of X to behave as if it were in *pain*.”
- C. In Contrast, Functionalism accounts for pain as a certain state of receiving sensory inputs that play a certain role in the Functional Organization of the organism.
 - a. Sense organs function is to detect “input” of damage to the body.
 - b. Example of two animals, one with pain fibers cut, the other with pain fibers uncut, and both exhibiting same behavior. Argument against Behaviorism.

V. Methodological Considerations

A. Pain is more likely to be correlated with a functional state than a brain state or behavioral disposition.

B. Laws of Psychology can be derived from functional states

C. Functional state is not only correlated with, but also explains, pain

D. Avoids questions and statements that are at odds with naturalism, i.e., empirically senseless.

Bibliography

Putnam, Hilary. "The Nature of Mental States," reprinted in Chalmers, David J. *Philosophy of Mind: Classical and Contemporary Readings*. New York: Oxford University Press, 2002.