

Functionalism

Functionalism claims that mental states are logically linked to behaviour, but they aren't reducible to it. Mental states are states that exist 'between' input (e.g. stimulus, experience) and output (e.g. behaviour). To characterize a mental state, we need to describe its typical inputs and outputs, e.g. what typically causes pain and what pain typically causes is quite different from what typically causes beliefs, and what they cause. In listing these inputs and outputs, we can't refer only to the stimuli and behaviour – mental states have causal relations to other mental states, e.g. pain normally causes the belief that one is in pain. So the definitions of mental states will be interdependent. We can't eliminate talk of mental states in favour of talk of behaviour.

On this view, we can say that mental states are functional states. Any mental state can be analysed in terms of the links it has stimuli, behaviour and other mental states. This analysis also rejects type identity theory. That theory claims that mental states and properties just are physical states and properties. This means that a species with a different kind of brain, or no brain at all – that uses something other structure to think, feel, etc. – could not be in the same mental states as us.

This seems just wrong, to the functionalist. The property of 'having the function x' is a property that can occur in many different physical things. For example, 'being a mousetrap' is a functional property. There are lots of different mousetraps, built in different ways, using different methods and materials. 'Being a poison' is a functional property. There are lots of different sorts of poisons, that work in different ways and are made of different chemicals. So 'being in pain' is also a functional property – lots of different physical ways, different brain states, that could be 'being in pain'. This might not just vary from one species to another; it could vary from one individual to another, or even in one individual, from one time to another.

CAUSAL ROLE (OR 'TELEOLOGICAL') FUNCTIONALISM

There are different ways in which we can understand the idea of 'function'. In the most popular version of functionalism, 'causal role functionalism', the idea is understood causally. A mental state is a causal disposition to act in certain ways, and to have certain other mental states, granted inputs and other mental states. In other words, a mental state has a particular causal role in causing other mental states, and together with other mental states, in causing behaviour. We pick mental states out by their causal role.

This is the idea of function that we find in the examples above. 'Being a mousetrap' involves having certain causal properties, viz. trapping a mouse. The idea of 'being a poison' is also a causal idea.

Now, in each of these examples, the functional property depends on a set of physical properties. Some physical state or other (some arrangement of parts) 'realizes' – has, on this occasion – the causal role that is 'being a mousetrap'; some chemical state or other, in each case, realizes 'being a poison'. Likewise, mental properties such as 'being in pain'

are realized by properties playing a causal role. In human beings, perhaps these are brain properties. However, telling us all about what goes on in the brain then is not to say anything essential about what it is to have a mind (mental properties); for things with very different brains, or with no brains at all, could have mental properties, just as long as they realized the same functional properties, i.e. played the same causal role.

MACHINE FUNCTIONALISM

As a theory, functionalism began in the 1960s in a slightly different form, with a different meaning of 'function'. It rested on a comparison between the mind and a computer. A computer performs a task by going through a series of states governed by a set of rules or algorithm (a program). It is possible to describe a computer that could perform any task that is computational, i.e. which can be broken down into a series of small steps that can be related by a set of rules. The mathematician and code breaker Alan Turing provided the description, and what he described became known as a Turing machine.

A Turing machine is not a physical object, but a mathematical idea. It is a machine with a finite number of possible 'states' that follows a program that specifies, for any state and event, the next state the machine should go into. Each rule in the program has the form 'if the machine is in State1, and it receives Input1, it should go into State2, and produce Output1'. So each state is defined functionally.

A drinks machine provides an example of the sorts of rules. Suppose it vends only one drink, at 60p. Its first state (State1) is to display the sign 'Enter 60p'. Some rules it has would be:

1. 'When the machine is in State1, and it receives the input of a 50p piece (Input1), it should go into State2, and display 'Enter 10p'.'
2. 'When the machine is in State2, and it receives the input of a 10p piece (Input2), it should vend the drink, go into State1, and display 'Enter 60p'.'
3. 'When the machine is in State1, and it receives the input of a 10p piece (Input3), it should go into State3, and display 'Enter 50p'.'
4. 'When the machine is in State3, and it receives the input of a 50p piece (Input1), it should vend the drink, go into State1, and display 'Enter 60p'.'

And so on for all possible combinations of coins adding up to 60p. This set of rules, that specifies every possible state of the machine and every possible transition from that state according to each possible input, is called a 'machine table'.

A drinks machine is very limited in what it can do. A Turing machine can carry out any computation, so its machine table will be huge. But because its number of states, and the number of inputs, is finite, it will be finite.

Machine functionalism is the view that any creature with a mind can be understood as a Turing machine, and mental states can be understood as machine states. These are specified by the machine table, i.e. what a state is can be defined in terms of what it does in response to inputs and other states, and what outputs it produces. As functionalism developed, the idea that mental states are machine states of a Turing machine that follow the rules of the machine table was left behind in favour of the less restrictive idea that they are states defined by their causal role.

FUNCTIONALISM AND REDUCTION

If a mental state is just a state playing a certain kind of function, what is the nature of this state? It could be anything, say functionalists. Functionalism is about what mental states are, not about the nature of the substance that realizes those mental states. It is therefore logically compatible with both substance dualism and physicalism.

However, most functionalists are physicalists. If physicalism is true, then it is a physical substance and physical properties that realize mental properties (e.g. properties of the brain). As we've just seen, perhaps different brain states play the same function in different species. But on each occasion, the occurrence of the brain state is the occurrence of the mental state. This is token identity – each individual instance of a mental state is just a brain state, playing a certain function.

Functionalism reduces mental properties to functional properties; but, even assuming physicalism, it does not reduce them to physical properties. Functional properties occur throughout science, e.g. being an eye (there are lots of types of eye). They are not themselves physical properties, i.e. properties identified by physics. However, functional properties are properties which are realized by physical properties operating in causal relationships. They are not, therefore, radically different from physical properties. There is nothing unique or strange about them. (For this reason, most philosophers do not consider functionalism a form of property dualism.)

A functionalist theory of consciousness

Functionalism claims that mental properties are functional properties. How might a functionalist try to show that consciousness is a functional property?

The first move is to be more precise about what we are explaining. Rather than talking about consciousness, we should try to explain what makes a mental state conscious. Not all mental states are conscious. For example, there are desires and emotions we have that we are not conscious of having; we can discover things about ourselves. What makes the difference between a mental state that is conscious and one that is not? One suggestion is that a mental state is conscious if the person is *conscious of* it. This immediately introduces the idea of a relation, which is what functionalism wants: a mental state is conscious just as a matter of its relations to other mental states and behaviour. For functionalism to succeed, consciousness must be completely reducible to the ways in which mental states interact. So what relations between mental states are involved when a person is conscious of a particular mental state?

David Rosenthal ("Two Concepts of Consciousness") suggests that a mental state, *x*, is conscious if you have an (unconscious) 'higher-order thought' about that mental state, roughly to the effect that 'I am having state *x*'. A state is conscious just in case it is being thought about. For example, if the conscious state is seeing my computer, the thought that makes this state conscious is 'I see my computer'. For a desire to be conscious, I must have the thought 'I want...'. In the normal case, the mental state causes the thought, which in turn makes the mental state conscious.

Rosenthal's theory is very contentious, and philosophers have raised many objections to it. We shall concentrate on just one, which turns out to be an objection to all functionalist theories of consciousness. If we think about sensations, e.g. pain, being conscious, it seems very counterintuitive to say that consciousness of the pain is the thought 'I am in pain', i.e. you feel the pain (consciously) because you have that thought.

It is more plausible to say that you make the judgment 'I am in pain' *because* you feel the pain. If this is right, Rosenthal has not explained what it is to be conscious of the pain.

For further discussion of the objection that functionalism cannot account for properties of consciousness, see the handout 'Qualia'. For discussion of a different objection to functionalism from Intentionality, see the handout 'Intentionality and Artificial Intelligence'.