

Contemporary Issues in Philosophy of Mind & Cognition

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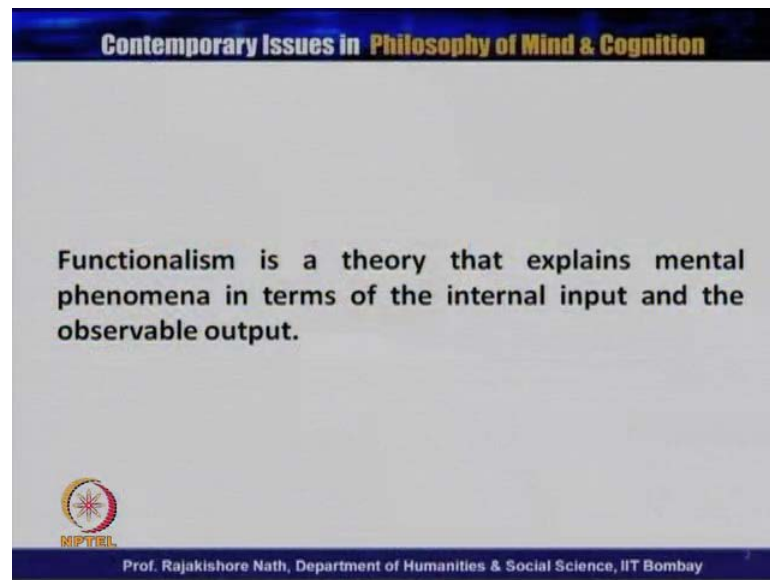
Departments of Humanities & Social Science

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Lecture No. #14

Functionalism

(Refer Slide Time: 00:39)



Functionalism is a theory of mind which plays vital role in the contemporary issues of philosophy mind and cognitions. Today I am going to explain about functionalism, because this thesis plays vital role in the philosopher mind. Functionalism may be defined as a theory that explains mental phenomena in terms of the internal input and the observable output.


It explains mental states as a functional state, and this is a theory that explains mental phenomena in terms of the internal inputs and observable outputs as I told you, but it takes mental state as a, is the internal causes of behavior, because in this functionalism synthesis, they explains mind as a kind of internal causes of behavior, where one cause is that and another effect is there, and at the same time, this functional synthesis which is against over the dualism because the functionalist holds that the mind is not something

that exist apart from the physical, because for them, mind is not something physical rather than it is something functional.

(Refer Slide Time; 01:30)

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- Against dualism, the functionalist holds that the mind is not something that exists apart from the physical.
- Against materialism, the functionalist denies that mental states are identical with physical states.

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Therefore, it goes against dualism. Against materialism, the functionalist denies that mental states are identical with physical states. For functionalism, it is not the physical substantiate itself that is important. What rather the way in which the physical substances organized. Admits in network of interrelated mental states and processes which explains the mind as a complicated systems of a process can be realized in a machines.

According to Hillary Patnam is one of the classical founder of functionalist tests. He characterize the functional as a model of mind. According to which, psychological states have simply computational states of the brain. Even if there is no psychology according to functionalistic model of mind. According to Patnam, the proper way to think of the brain is as, as, a digital computer. Our psychology is to be described as the software of this computer is functional origins. The main concern of the functionalism is to specify the relations between the different sorts of thought and behavior.

It is the view that, mental states are defined in terms of their causal relations to sensory inputs, behavioral outputs and other mental states. It acknowledges the fact that it impulsive to identify the mental states with behavioral dispersions, but it characterizes mental state by referring to behavior as the as the output. By characterizing mental states in terms of other causal roles, functionalism explains how a subject behaves in different


circumstances. For example, when we experience pain, our experience has a characteristic pain. Thus we have a conscious experience and experience with certain qualities or qualia, but for a function, these qualities are particular kind of causal role in our psychological processes, but in the case of qualia as we know that, qualia is a qualitative conscious experience, and this concept plays vital role in the philosophy of mind whenever we explain the non computational view of mind.

It is mind non computational region which goes also against functional states that establishes it is because of the conscious experience which qualia, which cannot be explainable in third person perspective, but the whole functionalist are explaining, it is a kind of, **kind of**, third person perspective of mind, not the third person perspective of mind.

(Refer Slide Time: 04:43)

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- According to functionalism, there are three different kinds of causal relationship for mental state's causal role.
- First, there is the input condition that a subject's environment states can cause that subject to have a certain type of mental states. For example, injury to one's leg causes him/her to feel pain.

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(Refer Slide Time: 05:05)

Contemporary Issues in Philosophy of Mind & Cognition

➤ Secondly, there is the output condition that a certain type of mental state can interact causally with other mental states of the same subject, e.g. feeling pain in his/her leg causes him/her to believe that the leg has been injured.

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Secondly, there is the output condition that a certain type of mental state can interact causally with other mental states of the same subject, that is, feeling pain in his or her leg causes him or her to believe that the leg has been injured.

(Refer Slide Time: 05:25)

Contemporary Issues in Philosophy of Mind & Cognition

Thirdly, there is the internal role condition that there are characteristic ways in which a certain type of mental state can give rise causally to the bodily behaviour of its subject. For example, the subject believes that his/her leg has been injured and he/she has a desire to relieve the consequent pain and cause the leg to withdraw from harm's way.

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Again, thirdly, there is the internal role condition that there are characteristics ways in which a certain types of mental state can give rise causally to the bodily behavior of its subject. For example, the subject believes that his or her leg has been injured and he or


she has a desire to relieve the consequent pain and cause the leg to withdraw from harm's way.

(Refer Slide Time: 06:03)

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For functionalism, mental states are characterized as 'software' states of a computer like in terms of their relations to the computer's 'inputs' and 'outputs.'

H. Putnam, 'The Nature of Mental States', in *The Philosophy of Mind: Classical problems/Contemporary Issues*, (eds.) B. Baekley and P. Ludlow, p. 355.

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Thus, there is an input output relations between the environment and the mind and the behavior of the subject, but for functionalism, mental states are characterized as software states of a computer like in terms of their relation to the computer's input's and output's.

(Refer Slide Time: 06:27)

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The term 'hardware' refers to the physical computer itself and its peripheral devices, such as the keyboard for input, video screens and printers for outputs, and external or 'passive' memory tapes/disks/drums for both. It contrasts with the term 'software', which denotes a sequence of instructions that tell the hardware what to do.

Paul M. Churchland, *Matter and Consciousness*, p. 101.

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But according to church land is one of the profunder of functionalistic model of mind as well as a lego scientific model of mind. Purchase land, the term hardware refers to the


physical computers itself and its peripheral devices such as the key board for the input, video screens printers for outputs and external or passive memory, tapes, disks, drums for both. It contrasts with term software which denotes a sequence of instructions that tell the hardware what to do.

Thus software of a computer means it is storing of a particular piece of information's, which is live case objects possession of certain believe a sophisticated may be contrasted with a hardware state of the computer, such as on electromagnetic state of certain of its circuits which correspondingly is linked to a neural state of a person's brain. For example, the computer inputs are key strokes on its key board, where as its outputs are pattern displays on its video screen. These are linked to simulations appears of objects sensor organs and moment of these are, are, body.

(Refer Slide Time: 07:51)

Contemporary Issues in Philosophy of Mind & Cognition

According to functionalism, the biological function of the heart is to circulate blood through the body and thereby keeping the body oxygenated and nourished. The biological function of the brain is to gather information from the body's environment and process that information in accordance with certain 'programs' that have been 'installed' in it either by genetic evolution or else through learning processes.

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But according to this kind of functionalistic model mind is says that, the biological functions of the heart is to circulate blood through the body and thereby keeping the body oxygenated and nourished. The biological function of the brain is to gather information from the body's environment and processes that informs in accordance with certain programs that have been installed in it either by genetic evolution or else through learning processes.

For a functionalistic, the same mental state can be physically realized in a variety of different ways, and so, it is multiply realizable. The multiple realizable model of mind is

one of the classic example for the functionalistic model of mind. This model says that there can be indefinitely many different physical properties which are total realization of the same functional properties.

(Refer Slide Time: 09:03)

Contemporary Issues in Philosophy of Mind & Cognition

"... while having a given total realization of a functional property is sufficient for having that property, it is not necessary for it—that same functional property could be instantiated in virtue of the instantiation of some quite different total realization of it."

Sydney Shoemaker, *Identity, Cause, and Mind: Philosophical Essays*, p. 265.

However, Block and Fodor have argued that the same physical state can realize different functional properties at different times, or in different circumstances, or in different creatures.

Hed Block and J. Fodor, "What Psychology States are Not," in *The Philosophical Review*, Vol. 81, 1972, p.165.

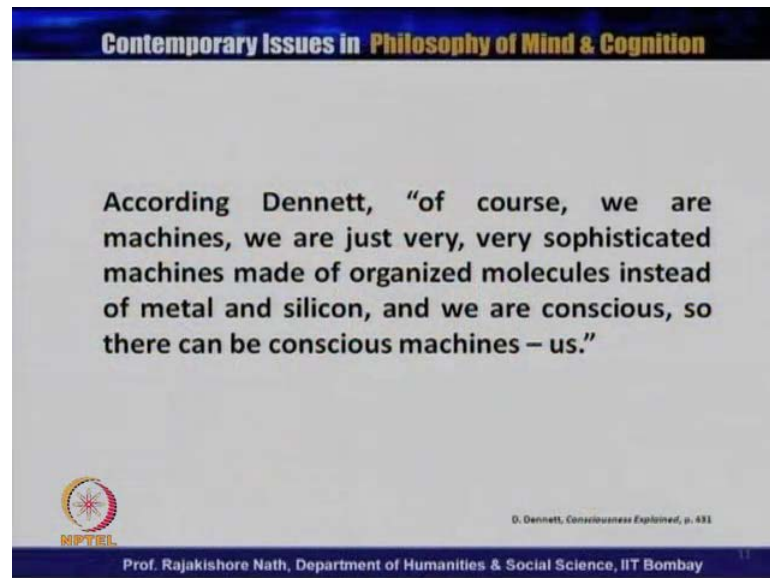
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According to shoe maker and while having a given total realization of a functional property is sufficient for a having that property, it is not necessary for it - that same functional property could be instantiated in virtue of the instantiation of some quite different total realization of it. However, Block and Fodor have argued that the same physical state can be realize different functional properties at different times, or in different circumstances, or in different creatures. But according to functionalizing, mental states and processes are functional kinds. They accept physicalism and claims that our mental states are implemented in a neural step and not it in a spiritual step.

So, and the label of discussions, there is the causal and logical relation among perceptions believes desires and behaviors, and on the structural level, there are spiking frequencies of neurons patterns of excitations and many other mental activities, but on the other hand, if you see the multiple of that model which is given by denials Dennett, he suggest that the similar kind of explanations and he says that the function of the human mind and as of the computer, the brain system function in relation to the different sub system. So, there are multiple drops which operate artificial system.

So, **so**, the analogy beneficial because it analyses consciousness from the point of view of language processing. This is given in photon precisely in the sense that a linguistic or language speaking beam is considered not only as a conscious beam, what all say rational beam. Even the robot has information processing systems can also be characterized as intelligent systems.

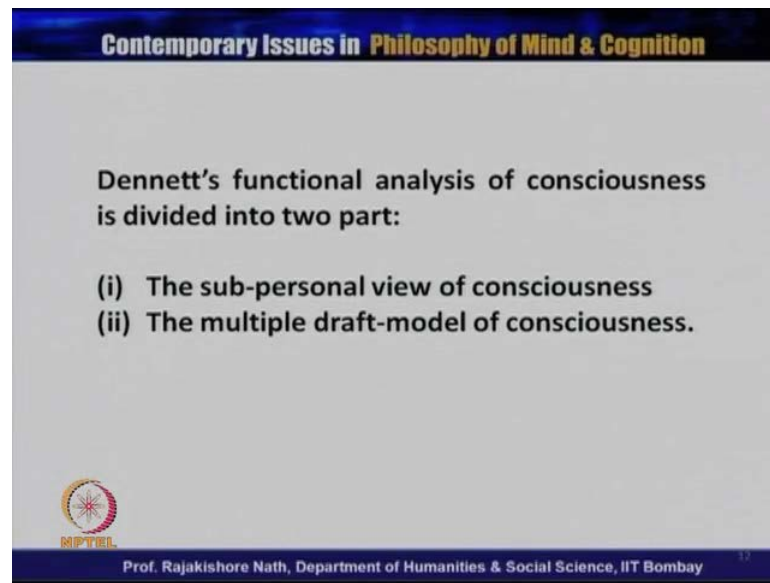
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According to Dennett, we are machines, we are just very very sophisticated machines made of organized molecules instead of metals and silicon, and we are conscious, so there can be conscious machines like us. So, human thought processes or language processing in the artificial systems are analog us to each other. In the case of the conscious thought processes, we are aware of our thoughts. At the same time, there is a psychochemical process which ozone in our brain.

Dennett is one of the strong functionalistic a model of mind and he has been a arguing that mind can be explainable in terms of machines. Dennetts functional analysis of consciousness is divided into two parts namely: the sub-personal view of consciousness and the multiple draft-model of consciousness.


(Refer Slide Time: 12:16)



Contemporary Issues in Philosophy of Mind & Cognition

Dennett's functional analysis of consciousness is divided into two part:

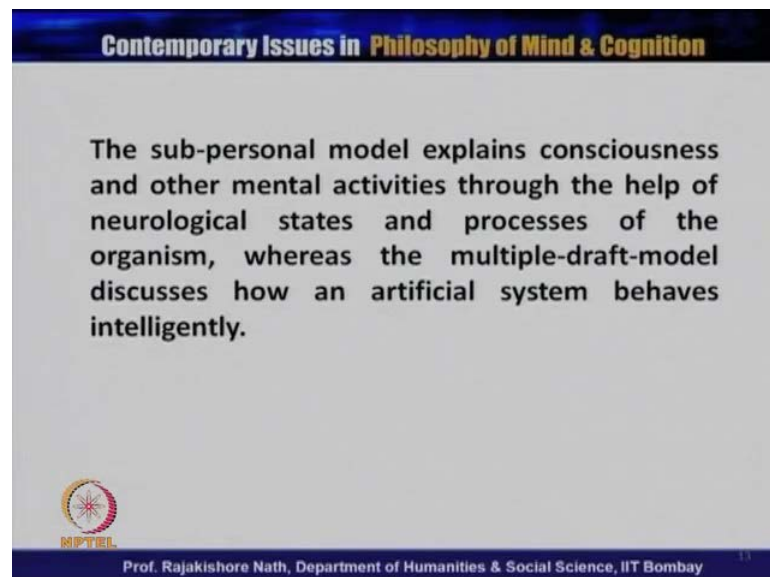
- (i) The sub-personal view of consciousness**
- (ii) The multiple draft-model of consciousness.**

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The sub-personal model of consciousness explains consciousness and other mental activities through the health of neurological states and processes of the organism, whereas the multiple-draft-model discusses how an artificial system behaves intelligently.

(Refer Slide Time: 12:25)



Contemporary Issues in Philosophy of Mind & Cognition

The sub-personal model explains consciousness and other mental activities through the help of neurological states and processes of the organism, whereas the multiple-draft-model discusses how an artificial system behaves intelligently.

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Dennetts offer a functional explanation of consciousness and the sub-personal level. The sub-personal level of explanations of consciousness try to explain not how the human being are system of organism, but how the system is being constituted and how the

various functions involved in different physiological patterns of the organism function together and that function structure would help us in defining the capacity involving in causing consciousness or particle conscious behavior. A state of consciousness is simply one which exhibits characteristics patterns of causal relations to other states both mental and physical. For the cognitive theorist, a functional state of the brain is just like a computational state of a computer.

It is seems we have a perfect model of a functional organism in a computer program. A computer program can be described as a beam functional organism of the hardware. The programmers provide the organization of the hardware which causes it to produce a described result. Nowadays, functionality argues that mental states are like in the processing states of a computer. The way human mind is a functioning the same way system is functioning.

Therefore, for functionalistic thus known distinction between or difference between mind and body or mind and machines. According to the computer functionlogy which is artificial intelligent or strong artificial intelligent especially on the strongAIand AI model artificial intelligent model mind, which I will be discussing elaborately in the future lectures, but the concept of artificial intelligence are strongly is very much related to that to the functionalistic states of mind.

The way AI are strong artificial intelligence a scientist as claiming that the possibility to have a machines which are minds same way. In the classic way, functionalistic model are trying to explains that the brain is a computer and the mind is a computer program implemented in the brain. Mental states are just program states of the brain; however, the functionalistic phase a problem regarding consciousness. This seems to think that our conscious feeling of pain consistent tell in the functional analyzed program states of a digital computer in our skull.

Thus, when it comes to conscious feelings such as pain, there is a difference between functionalistic and others. According to our ordinary commonsense and conceptions, planer on prison in sessions, that is, they are unpleasant in our qualitative subjective experience, whereas the functionalistic believe that pains are physically states; that are part of patterns or functionalism in brains. In human beings, the functional or organism is like this certain input stimuli such as injuries causes physical states of the nerves system,

and there is in turn casual sort of physical output behavior. These are computational information processing states.

In humans, these functionally organized physical skills do not causes pain. They are just pains. A functional defines any mental state in terms of its typical relation into other mental change and its behavior. Functionalism can be more easy to understood today comparison way the relationship between a computer and its program. While talking about computers, it is convenient to make a distinction between hardware and software. The hardware of a computer is a, what it is physically made of transistors, circuits, silicon chips, screens, key board and many other physical properties are there.

The software on the other hand is the program, the system of the operations which hardware carried out. The hardware can usually be adopted for huge in a number of different systems. The software is usually a complicated system of instructions to the computer hardware which can be physically carried out in a number of different o s. What achieving the same result it is very difficult.

Functionalism as a theory of mind as I have explained which is concerned with the software about thought rather than the hardware. It is not a theory about the hardware of thought at all allow. It is certainly compatible wide various of kinds of physicalism. It is neutral about what sorts of physical system, mental programs operates in it. Its main concern is to specify the relations which are held between the different sorts of thought and the behavior.

Therefore, function does not give on adequate on conscious experience and senescences, such as what it is like to be in pain or to be in happy or to be thinking about either or to be thinking about framed or to be thinking about something else. Why it is not committing because of its commitment to the physicalism. Functionalism, it is says by many philosopher as it is does not give a sufficient account of counts experience and synthesis, because it pains account for the real nature of the mental states, because it reduce mental state to the machine states. The way material a a list either uses mind into matter for functions, there exist a mind into machines. The functionalist always leave out the qualitative subjectively some of our mental states.

They are certain qualitative experiences involved with our mental states such as seeing a red object or having a pain in leg and many other mental, but function it describes only these experiences in terms of their causal relations and list out is very difficult to explain the concept of mind because without this it is very difficult to the concept of mind and consciousness as well as in the metaphysical way self. Metaphysical you can explain about consciousness; metaphysical you can ask you something else consciousness, but metaphysically you can or explain something machine as a self which is belongs to some conscious some subject.

And therefore, a functionalism is able to explain the mental states in terms of the functional set of the brain, but cannot explain the inner or qualitative nature of our mental state. In case of color sensation, for example, for viewing a tomato, I have what real, really a sensation of green prior you have the normal sensation of red, but since we have no way of comparing our inner qualia and we both have the same observations among objects. There is no way to tell why that my spectrum is inverted relative to yours. The problem for functionalism is that even if my spectrum is inverted a relative to yours, we remain functional isomorphic with each other's. My visual sensations is functionally identical with yours visual sensation.

Therefore, they are the same type of state and it does not make sense to suppose that. My sensation is really essence of an green. If it meet the functional condition for being sensation of red, then the definition, it is a sensation operate. According to functionalism, a spectrum inversion of the object described is role out by definition. Therefore, functionalism fails to characterize our color experience. In case of spectrum inverse, there is no difference between mine color experience and you color experience, because in respect of color experiences, we are functionally equivalent; that means mine color experiences and your color experiences would exciting the same pattern of causal relation to environmental mental states, other mental states and also other mental states and also other after, they would have exciting the same causal role.

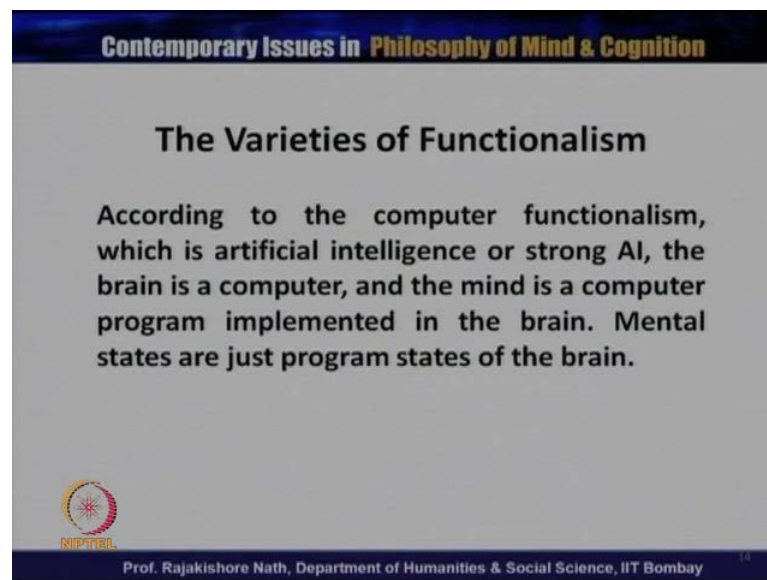
Our color experiences is have the most striking feature called qualitative character, which we have already discussed that according to function, the mental states are functional state, that is, the mind is a complicated machines and mental processes or computational processors, which can be realized in a machines, but mental states are

realized by their relation to their senses to stimulations or inputs by, by, other inner states or their behavioral aspect.

Consciousness would be mental processors with certain kind of causal relation to the inputs. There are so many different varieties of functionalism. Each based on different model and all of which try to specify the difference sorts of inputs output relations. The main concern of the function is to specify the relations between different sorts of thought and behavior. It tries to individuates mental states causally as mental states have mental causes and effects as well as senses causal and the behavioral effects. Thus functionalisms explains that or mental states are naturally related to what goes on in the brain or the center nerves systems. In any case, there are physical states and or related with each other through causal relation.

For example, an intelligent robot has mental state. What its thinking depends on silicon chips rather than biological neurons. Some of the limitations and criticism is to AI model of mind which I will be discussing in the next lectures, but let us see the varieties of functionalism.

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According to these computer functionalism which is artificial intelligence or strong AI, the brain is a computer and the mind is a computer program implemented in the brain. Mental states are just program states of the brain.


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Contemporary Issues in Philosophy of Mind & Cognition

According to strong functionalism, our concept of a particular mental state type has a state whose tokens have a strictly defined causal-functional role or ultimately sensory input and behavioral output. For every psychologically distinct type of mental state M, there is a distinct corresponding functional role R.

In case of moderate functionalism, for every psychologically distinct type of mental state M, there is some functional role R, which can be assigned to M. In this case, which functional role corresponds to which type of mental state has to be determined by empirical investigation.

Michael Lockwood, Mind, Brain, and the Question, p. 25.

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Secondly, the strong functionalistic model of minds says that, our concept of a particular mental state type has a state whose tokens have a strictly defined causal-functional role or ultimately sensory input and behavioral output.

For every psychologically distinct type of mental state m , there is a distinct corresponding functional role r . In case of, but in the case of moderate functionalism for every psychological distinct type of mental state m , there is a some functional role r which can be assigned to m . In this case, which functional role corresponds to which type of mental state has to be determined by empirical investigations, but in the case of a common functionalistic model of mind.


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Contemporary Issues in Philosophy of Mind & Cognition

According to strong functionalism, our concept of a particular mental state type has a state whose tokens have a strictly defined causal-functional role or ultimately sensory input and behavioral output. For every psychologically distinct type of mental state M, there is a distinct corresponding functional role R.

In case of moderate functionalism, for every psychologically distinct type of mental state M, there is some functional role R, which can be assigned to M. In this case, which functional role corresponds to which type of mental state has to be determined by empirical investigation.

Michael Lockwood, Mind, Brain, and the Question, p. 25.

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This common functionalistic model claim that the same mental state can be physically realized in a different variety of ways, that is, for every mental state m, there are different ways of realizing it what matters is the functional organization of the state and not the stuff out of which it is made. This is called multiple realizability theories, and which I have already explained and some of the things which I will be explaining in the while I will explain on artificial intelligence a model of mind.

(Refer Slide Time: 26:35)

Contemporary Issues in Philosophy of Mind & Cognition

In his essay "Mad Pain and Martian Pain", Lewis discusses two kinds of beings, which experience pain differently than normal humans. In the case of mad pain, the subject experiences pain when doing moderate exercise in an empty stomach; further, it improves his concentration for mathematical reasoning. On the other hand, Martian pain takes place in a Martian organism constructed of hydrolic hardware rather than neurons. Here the point is that pain is associated only contingently with either its causes (as in mad pain) or its physical realization (as in Martian pain). We cannot specify *a priori* its causal role or physical realization.

David Lewis, Philosophical Papers, Volume 1, Oxford University Press, Oxford, 1983, p. 122.

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But Lewis in his essence on Mad Pain and Martin Pain discusses two kinds of beings which experience pain differently than normal humans. In the case of mad pain, the subject experiences pain when doing moderate exercises in an empty stomach. It improves its concentrations for mathematical reasoning. On the other hand, Martin pain takes place in a Martin organism constructed of hydraulic hardware rather than neurons. Here the point is that pain is associated only contingently with either its cause as in mad pain or its physical realization as in Martin pain. We cannot specify a priori its causal role or physical realization.

As you have seen that, according to multiple realizability, there can be indefinitely many mind pain and physical properties which constitute the realization of the same functional properties. However, it is also true that the same physical states can be realized in different functional properties and different times or in different circumstances or in different creatures. The functional states are multiply realizable in the sense that a functional state can be identical to any particular physical realization of it.

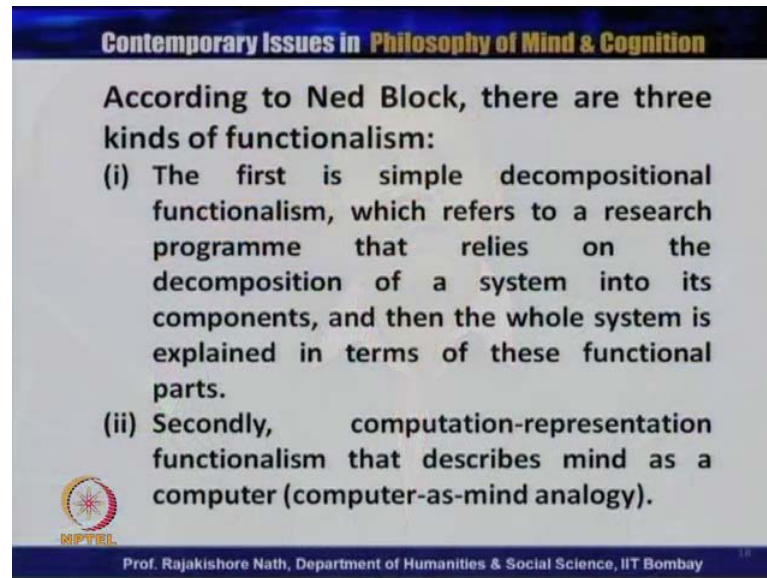
For example, someone could write a program using two completely different types of computer, which use different sorts of hardware to run the same program. In this sense, the program is said to be multiply realizable in that any number of computers may be used to realize the same program. Functionalism takes state of mind and mental to be functional states and properties.

But in the case of mental properties, according to the multiple realizability model of mind, they are multiply realizable but not identical with material properties. For example, the same mental property - the property of being in pain - may be realized by one property in a human being and to a certain extent by another property in an insect. For the functionalist, each someone has now a particular pain, then he or she can imagine that this pain is realized through a particular neural state. That neural state has an identifiable material structure and this may be studied by low level hardware science like neurobiology.

Therefore, for functionalism, what makes the state a realization of a pain is not its material constitution, but it is occupying a particular kind of causal role within our nervous systems. Thus multiple realizability implies that there is a higher level functional description of physical state in terms of their causal role which abstracts from

the low level physical constitutions. It is within search functional properties that mental properties can be identified. Now, you have to see the way Ned Block is explaining functionalism.


(Refer Slide Time: 30:24)



Contemporary Issues in Philosophy of Mind & Cognition

According to Ned Block, there are three kinds of functionalism:

- (i) The first is simple decompositional functionalism, which refers to a research programme that relies on the decomposition of a system into its components, and then the whole system is explained in terms of these functional parts.
- (ii) Secondly, computation-representation functionalism that describes mind as a computer (computer-as-mind analogy).

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According to him, there are three kinds of functionalism - the first is simply decompositional functionalizing which refers to a research program that relies on the decomposition of a system into its components, and then the whole system is explained in terms of these functional parts.


Secondly computational-representational functionalism that describes mind as a computer or computer-as-mind analogy. Psychological explains under computational-representational functionalism is act into provide a computer program for the mind. Thus mental processes are same as beam the composable to a point, where they can be thought of as a processes that are as simple as those of a digital computer or simply a during machine.

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Contemporary Issues in Philosophy of Mind & Cognition

(iii) The metaphysical functionalism is a theory of mind that hypothesizes that mental states simply are functional states. The metaphysical functionalist claims that mental states are functional states because they have the causal relations between inputs, outputs and other mental (i.e. functional) states of the system, as in the Turing machine.

Hed Block, 'Introduction: What is Functionalism?' *Readings in Philosophy of Psychology*, (ed.) H. Block, p.171.

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19


Lastly, block identify that metaphysical functionalism this form of functionalism is a theory of mind that hypothesize that mental state simply are functional states. The metaphysical functionalism or the meta metaphysical functionalist claims that mental states are functional states because they have the causal relations between inputs, outputs and other mental states of the system as in the Turing machines.

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Contemporary Issues in Philosophy of Mind & Cognition

The Machine functionalism describes human brains in three levels:

- The first two are scientific levels such as biological, (neurophysical) and the machine-program or computational.
- Third is the common sense level of folk-psychology.

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20

But the machine functionalism describes human brains in three levels - the first two are scientific levels such as biological and the machine-program or computational; the third is the common sense level of folk-psychology. At the first level, biology describe human neuro biology in functional term and next available neuro-physiological distinction of brain states, and the second level, psychologist walk out the machine for that is realizable by the low level neuro anatomy.

And describe the same brain state through more abstract computational terms. At the third level, psychologist also explains behavior characterized in every day terms by the referring to stimuli and to the intervening mental states such as believes digits type identifying the mental states with functional or computational states as they want.

The functionalist things that all of our mental states can be defined in terms of functional states. Functional states play causal role in the system; it does not matter what the increasing make of those states is. In humans, they are certain kinds of brain state. What in martins which I have already shown in Lewis examples and he says that, they would like to be different sort of states in the case of martins. In an appropriatory programmed computer, they would be electronic states and these would be different physical realization of the same causal role. The functionalistic thus identify our mental state with causal roles. According to ned block, functionalism is guilty of physicalism, because for the functionalistic, pain is identical to a physical state or it is a first order physical properties or that is token physicalism. However, some philosopher do not accept this because they argue that, if functionalism is true, then physicalism probably false.

If pain is a functional state, it cannot be brain state because creatures without can realize the same Turing machines programmed as creatures with brain states, but blocks objects into commonsense functionalism in that, it is too liberal, that is, it attributes mental state to too many things including things which intuitively have no mental a life, because in the case of commonsense a functionalist which is specify that, inputs in terms of light and sound falling on one sense organs and output as the moment of a hands and legs.

The, define mental states in terms of causation to these inputs and outputs. The creatures which are capable of having those mental states will have inner states standing in causation to inputs and outputs of those sorts, but what about creatures that lack our sense organs and lack hands or legs whatever creature with different neural structures

then ours or creatures with no neurons. These known human creatures obviously will lack mental states according to functionalism. That will be a kind of according to Ned block, but functionalism accept the idea that, according to such a view that it is a possibility imagine that the imagine mind is like, a like unconscious creatures that do not persist qualia, such creatures which pupils funtionalistic criteria for possessing mind could not be set to be human in the sense of the term. In other wards, the non-functionalistic argue that qualia are necessarily in addition to any functionality explanation account for minds.

Functionalism agrees that brain states are expensive for mental states, but disagree that their identical with them. It argues that neurological states or brain activities helps to realize mental states which then lead to behavior. In this way, it serves the mind proposing that brain states are low level activities that helps realize high level mental states. To understand this point, we discusses, let us discuss about a computer. Suppose we ask a computer to add the numbers 3 and 7, and the one level, at that is at a low level, what is happening in the computer is dependent on the hardware, and other level, high level, the computer software is calculating the answer since computers have the different hardware and they work in different OS.

We cannot describe the process, the process of conclusion or the activities of hardware. However the functionalistic argues that the processes of calculation is simply realized by the hardware. Therefore, the software is function of the hardware. For a functionalistic, consciousness would be a mental processes with certain kinds of causal relation to the inputs to the other mental states or processes and to certain behaviors. One can also the extension of unconscious beams that had the same behavior and the same brain states brain state as a conscious beam, but having no qualia.

The functionalistic theory face to proof the qualitative aspects which I have already argued and which I will be explaining more on high level explain concept of mind especially the phenomena concept of mind, but in the case, let me explain little bit error the limitation of the functionalistic a model of mind, but what is the light to be consciousness is a inner there in the case of machine functionalism, because it is possible to say that brain states causes consciousness or the functional states are caused by brain state, but these things do not tell us how the subjective experiences themselves arises.

The problem with these is that our subjective explains or the most real for us. We know what it is to fill frame or to remember beam or the part, beam or the part, but the functional view does not look like include this picture. Therefore, functionalistic fails to account the consciousness mind and qualia are qualitative experience. There are many criticism, many limitations to functionalistic model of mind that I will be explaining in the future lectures. Thank you.