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How Then Can the Nature of These Things Called “Mental States” Be Accounted for?

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Abstract

Series of attempts have been made to find a sufficient account of the nature of mental states. Functionalism took up the baton and Putnam attempted to use a computational means as a potent analogy to describing the nature of the nature of mental states as a physical component of the world. Putnam discovered that to be consistent on the question, an equivalent relation between a functional state and a corresponding environmental evidence is necessary. But he concludes that no intelligent or non-intelligent agent could discover this. This is because of the conflicting and innumerable nature of the possible environmental evidences. However, even if it were possible, there is the Godel's Incompleteness Theorem. That is to be able to justify every other proposition in the universe, there must remain some proposition which is not justified. Therefore, computation becomes arbitrary and trivial because there is no means of establishing the equivalent relation and even to justify it. In all of these, the potent question remains; what is the nature of mental states?

Key Words: Physicalism, Functionalism, Equivalent Relation, Mental states, Machine States.

Introduction

The main quest of the physicalist is how to account for the nature of mental states. Putnam attempts to use a computational hypothesis. For him, the nature of the mental state is analogically equivalent to the nature of a computer machine state. A computer machine manipulates digital codes and symbols to process information and produce output. For him, the same is true of the mind. The mind also manipulates linguistic codes and symbols and then produces behavioural output. Therefore, the mental language could be reduced to logical or formal language of the machine. However, because environmental evidences are necessary for belief fixation, he argues that the hypothesis faces a problem of harmonizing a particular functional program with multiple correlating environmental evidences. For Putnam, this leads to arbitrariness in computation. This also concludes that the nature of mental states has not been adequately accounted for.

Dualism on the Ontology of the Mental States

Descartes classification of a human being into two independent ontological categories created two radical theories about the nature of the mental states. These theories are; dualism and materialism while their proponents are called dualists and materialists respectively. The dualists, such as Frank Jackson, hold that the category of the mental is radically different from the category of the body. The ontology of the mental states occupies a peculiarly different domain of existence. For this, no physicalist study may be able to render the nature of mental states empirical without leaving something fundamental out. Frank Jackson (Jackson 1995) explicitly shows this in the popular knowledge argument.

The knowledge argument reinvigorates the mind-body debates among the scholars on the field. The argument calls for reaction from the both physicalists and dualists such as Lewis and Nemirow, Paul Churchland, Patricia Churchland, Colin McGinn, C. D. Broad, etc. For instance, Lewis and Nemirow (1990, p. 495) argue through their “ability hypothesis”. What the ability hypothesis argues is that what Mary acquired, to them, is a bundle of abilities such as abilities to imagine, remember, and recognize colours or colour experience and not propositional knowledge, (Lewis 1983, p. 131). C. D. broad (a dualist) argues that physicalism will not be able to adequately account for the nature of mental state. This is because mere propositional knowledge about, or ordinary sight of ammonia, for instance, could not suffice to acquire what it smells like unless one has experienced the smell itself, (Broad 1925). This argues that there is something about the nature of the mental states which mere theoretical analysis shall fail to capture.

Physicalist Theories on the Ontology of Mental States

The physicalists’ position is that the mental domain is part of the physical constituent of the universe. Physicalism is the doctrine that all phenomena can be described in its atomic terms and in terms of the principles of space and time. For physicalism, properties of mental life can be accounted for and be reconciled with the apparent properties

of a purely physical world (Kirk 2003, p. 49). This may not be saying more than that everything which exists is no more extensive than its physical properties; that is, there are no kinds of things other than physical things. Thus, for physicalism, “human beings are fully material entities whose workings and properties may be completely explicated by the concept and theories drawn from an ideally complete physics”, (Maslin 2001, p. 71). The dualist contention is that human beings are not fully material entities. This is because mental domain of a human being is not material. If, according to the dualists, the mind is different from the body and physicalists say all that exist is nothing but physical, then; “what is the nature of the mental?” “Is it part of the physical?” “How is this so?” These are the fundamental questions which the physicalists attempt to resolve.

The physicalists approach to the question is in two dimensions. The first is epistemological and the second is metaphysical. Prominent among the epistemological approach is Saul Kripke’s argument on the issues of the appropriateness of the concept, terms, and propositions used to describe or talk about the mental, (Kripke 1980: 50). The second approach is the metaphysical; it is concerned with questions on the ontology of mental state. The need to answer the ontological questions such as “what is that thing called the mental state?” “Does it exist?” “If it exists then what is its nature?” “What makes up mental states?” has been the focus of the physicalists using several theories.

Behaviorism is one of the physicalist theories which sought to account for the nature of the mental in behavioural terms without leaving anything out. By accounting for the nature of the mental in behavioural terms without leaving anything out, it attempted to reduce the mental states to behaviour or behavioural dispositions. Reductionism obtains when the existence of phenomenon A is understood to be nothing over and above the existence of phenomenon B. In this case, Phenomenon A is said to be reducible to phenomenon B. For instance, the phenomenon “water” is understood to be nothing over and above the phenomenon “H₂O”. The same occurs of the possibility of a reduction between the phenomena “NaCl” and the phenomenon “Salt”, “temperature and “mean molecular energy”, “Unmarried adult male and “Bachelor”, “spinster” and “unmarried adult female”, etc. For behaviourism, the only objective and natural property which may adequately account for the nature of human being is behavior.

In other words, behaviourism seeks to do an ontological reduction of the mental to behavioural ontology. Everything about the nature of mental states could be reduced to the nature of human behavior. This is with a view to achieving an objective account of the nature of mental states. Behaviour, to them, is empirically and objectively verifiable, and it employs scientific methodology to account for the nature of mental states. Scientific methodology seeks to reduce an object or a phenomenon to its empirically demonstrable and observable qualities. For instance, consider the judgment; “all metals expand when heated”. This is a general judgment about the behavior of any object that is metal. A logical interpretation of this judgment makes this phenomenon clearer. The judgment does not say

that “there are metals and they expand when heated”. Technically, the judgment says; for each x, if x expands when x is heated, then x is a metal. This judgment only infers that whatever object with this kind of behaviour under that experimental circumstance is a metal. This is the kind of reduction that the behaviourists wanted to adopt on the nature of mental states. Behaviourism attempted to account for the nature of mental states by appealing only to human behavior as observable characteristics of human beings.

For behaviourism, all that is constitutive of the mind is the observable behaviour. Searle asserts that, the crudest version of “behaviorism says the mind just is the behavior of the body. There is nothing over and above the behavior of the body that is constitutive of the mental”, (Searle 2004, pp. 49-50). For instance, behaviourism takes anger to be synonymous with behavioural characteristics of squeezing his face, unusually keeping quiet, and so on? Laughter, cheerfulness, etc, are synonymous with happiness.

Behaviorism became weakened towards the middle of the twentieth century. According to Searle, it especially came under an attack of the linguist Noam Chomsky, (Chomsky 1971). For Chomsky, saying that when we study psychology we are studying behavior is as unintelligent as saying that when we study physics we are studying meter readings. Behavior is used as evidence in psychology, just as meter reading is used as evidence in physics, but it is a mistake to confuse the evidence that we have about a subject matter for the subject matter itself, (Searle 2004, pp. 52-53). Besides, Chisholm has pointed out that behaviorism provides an implausible account of the meanings of our mental state terms, since, intuitively, it may be possible for a subject to have the mental states in question without the relevant behavioral dispositions — and vice versa, (Chisholm 1957). For example, Jingo may believe that it's going to rain even if he may not be disposed to wear a rain coat or take an umbrella when leaving the house or to perform any other rain-avoiding behaviors, if Jingo doesn't mind, or actively enjoys, getting wet. In other words, the statements which will explain Jingo's behavior in this circumstance will fail to link Jingo's behavior to a rain expectation behavior.

Mind-brain identity theory is another physicalist attempt to provide an adequate account of the nature of the mental state as a component part of the universe. This theory was advocated by philosophers such as U.T. Place, (1956, pp. 44-50), J.J.C. Smart, 1962, pp. 160-172), Herbert Feigl, (1967), D.M. Armstrong, among others. Identity theory argues that mental states must be capable of being physically described. Proponents of the identity theory strictly rely on the scientific methodology and findings, especially, on the scientific findings of the neurologists and the neuro-anatomists. Thus, for the identity theorists, properties of the nature of mental states are reducible to the nature of the processes in the human brain. Identity theory states that when two accounts pick to the same phenomenon, those accounts are accounts of the same phenomenon.

For instance, pain state is seen as a state in the brain. So also are states such as hunger, anger, belief, desire, feeling, and so on. It is then held by the identity theorists that

the statement; “I am hungry” is reporting a state which is a product of some processes going on in the brain. In other words, the experience of “being hungry” is a process in the brain and a sufficient account of the processes in the brain must be able to render it intelligible. Therefore, for Smart, “let me first try to state more accurately the thesis that... in so far as a sensation statement is a report of something that something is in fact a brain processes. Sensations are nothing over and above brain processes” (Smart 1962, Chalmers 2002, pp. 60-68).

As a matter of fact, identity theory holds that one can give a comprehensive account of man without recourse to any form of souls –spirit, spirituality or ‘ghost stuff’. That is the point that J.J.C. Smart made in;

for a full description of what is going on in a man you would have to mention not only the physical processes in his tissues, glands, nervous system, and so forth, but also his state of consciousness (which are his brain processes): his visual, auditory, and tactual sensations, his aches and pains, (Smart 1959, pp. 141-56)

For him, it is not the thesis that, for example, ‘after image’ or ‘ache’ means the same as ‘brain process of sort X’ (where ‘X’ is replaced by a description of a certain sort of brain process). It is that in so far as ‘after-image’ or ‘ache’ is a report of a process, it is a report of a process that happens to be a brain process.

Some objections are raised against mind-brain identity theory. For instance, Jerry Fodor argued that a significant statement cannot follow from the identity of the mental term with physiological term, Fodor 1971, p. 135). For instance, it is argued that “no statement of the form “x is y” could be significant where “x” is a mental term, “y” is a physiological term, “is” means identity, and all terms bear their current senses.” (Fodor 1971, p. 135). Claims such as this, he argues, violate the Leibniz law of the indiscernibility of the identicals. The law of the indiscernibility of the identicals states that what is called ‘a’ and what is called ‘b’ are identical just in case ‘a’ and ‘b’ possesses equivalent properties. Therefore, such an identity becomes false, (Malcolm 1964, pp. 115-125, Shaffer 1065, pp. 96-98).

Besides, it has been objected by the dualist that identity theory has not been able to provide a sufficient understanding of the nature of mental states as a material constituent. It has not been able to account for the phenomena experience or *what it is like* to have an experience. But *what it is like* is a property of the mental state. This property of the mental must be accounted for before the account of the nature of the mental state could be adequate. But identity theory did not capture this property. In other words, identity theory has not been able to completely reduce the nature of the mental to its material constituent. Besides, the possibility of a one-to one correspondence between the mental properties and brain properties has been questioned by Abelson, (Abelson 1970, pp. 85-90). This failure calls

for another theory to take care of the weak points of identity theory in a bid to adequately account for the nature of the mental states. One such attempt is supervenience.

Supervenience states that mental events owe their existence and features entirely to physical events. It argues that mental events do not have separate and independent powers of their own. Besides, any alteration in the physical event has a corresponding alteration on the mental event, (Maslin 1996, p. 32). In other words, there can be no mental difference without physical difference. Supervenience is being proposed by the philosophers who wanted to uphold physicalism while rejecting identity theory, (Davidson 1980). For supervenience, though it may be impossible to identify mental properties with physical properties in a one-to-one fashion, mental properties may still be anchored to, or be grounded in, physical properties. It attempted to avoid some of the difficulties of the identity theory. This is the view of Davidson;

Although the position I describe denies there are psychophysical laws, it is consistent with the view that Mental characteristics are in some sense dependent, or supervenient, on physical characteristics. Such supervenience might be taken to mean that there cannot be two events exactly alike in all physical respects but differing in some mental respects, or that an object cannot alter in some mental respects without altering in some physical respects (Davidson 1970 *reprinted* Davidson 1980, p. 214).

This is saying that no two things that are physically alike can be mentally (or psychologically) different, and a being's mental properties will be determined by its physical ones. This means that if there is mental states, it can occur only in systems that can have physical properties; namely physical systems", (Kim 2009: 40). The existence of mental states depends on the existence of physical states. Mental states in this sense do not have an independent existence. Davidson's thesis that mental states supervene on their physical states is a premise to his consequent thesis; anomalous monism, (Maslin 2001, p. 202).

Among some of the objections which led to the fall of supervenience theory is that it makes a physical property a necessary requirement for having mental property. This is because supervenience holds that for an organism to be capable of having mental states that organism must have some physical base properties. This position is that only organism with physical properties is qualified to have mental properties. Some functionalist philosophers, such as Ned Block (1980), have accused supervenience of restricting the scope of organisms which are capable of having mental states. Functionalism sought to build a theory of the nature of the mental states while avoiding the difficulties of identity theories and supervenience.

Functionalism is a recent theory in the philosophy of mind. It was developed as a response to various problems which confront behaviourism and identity theory and supervenience. The thesis of functionalism is that what makes something a mental state of a particular type does not depend on its physical structure but rather on the way it functions, or the role it plays, in the system of which it is a part. This is a definition which does not seek to determine the nature of the system in its physical constituents but solely in its functional nature. A gatekeeper, for instance, may be described as a system or organism which monitors and screens movements in and out of the gate of particular premises. To clarify the accounts of functionalism, Searle and Block identify and use Carburetors, Thermostats, and Clocks and even kidney, (Searle 2004: 64). Carburetors, Thermostats, and Clocks are not described by their physical structures by the functionalists. For Block,

What it is for something to be a carburetor is for it to mix fuel and air in an internal combustion engine--*carburetor* is a functional concept. In the case of the kidney, the *scientific* concept is functional--defined in terms of a role in filtering the blood and maintaining certain chemical balances, (Block 1980, also Richardson 1979)

Functionalists hold the position that the physical structure of these entities does not determine what they are. What determines their nature is their causal function. So, if it is asked; what is a clock? It is defined as *a mechanism which enables us to tell the time*. This is a functional definition of a clock. Now, it must be noted that the physical structure of the clock does not matter. It can be made out of gears and wheel, it can be made out of an hourglass with sand in it, it can be made of quartz oscillators, it can even be made out of any number of physical materials, it does not matter, Searle 2004, p. 64). Once it enables us to tell the time, it is a clock. The same description is true of Carburetors and Thermostats, (Putnam 1975, p. 293, also Searle 2004, p. 64) For Putnam, "... and it doesn't matter at all that the *physical realizations* of those states are totally different", (Putnam 1975, p. 693). The point Putnam raised is that these descriptions are abstract descriptions. Therefore, it may be possible that these abstract descriptions are multiply realized by different physical organisms. This definition does not refer to physical component of any organism neither does it refer to a particular organism or person. The point is whatever realizes this function, or whatever does the job is a gatekeeper. In like manner, functionalism identifies mental states by their functional characteristics in a system. Hence, mental state is described as identical with functional state.

Analytic functionalism, psycho-functionalism, Homuncular functionalism, Black Box functionalism are variants of functionalism which Putnam rejected. One of his points against some of those variants is that using conceptual formulations and pure *a priori* reasoning to describe the nature of mental states as part of the physical world will yield controversial *meanings* about concepts. Besides, conceptual analysis mainly leads to circular analysis of concepts or, at most, it leads to infinite regress of conceptual

considerations, (Putnam 1975, p. 432-433). For Putnam, such endeavour will not lead to any concrete outcome about the nature of mental states. Putnam then adopted a scientific hypothesis as a possible means of taking care of the problem. In that scientific hypothesis, he favours machine functionalism and employs the idea of Turing machine as a model of an organism, (Putnam 1975, p. 433). Putnam was enthused by Turing thesis and the structure of the Turing machine. Thus, he adopted the functioning structure of the digital machine, as a viable means of hypothesising the nature of mental states. So, what came to be known as machine/ computational functionalism is Putnam's adoption of and hypothesizing the nature of the state of Turing machine.

Putnam adopted machine state as an analogy of mental states as demonstrated by Turing machine. Machine states are functional states of an automaton. Computing mechanisms manipulate complex strings of digits, (Putnam 1975: 365). The structures and processes in question are complex in the sense that in the interesting cases, there are recursive rules and instructions describing the causal relationship between inputs and outputs. It follows that properties which make up the description of machine state; such as Machine Table, Description of a State, Algorithm, etc, are also thought to be necessarily and sufficiently applicable for the description and study of mental state. Putnam, therefore, concluded on computational functionalism by stating that mental states are (probabilistic) Turing machine states, (Putnam 1976b, also Lowe 2004, p. 46).

There are a number of objections which are leveled against functionalism and especially computational functionalism. One of such arguments against functionalism is that its account of the nature of mental states leaves out phenomena experience which is an essential feature of the mind. This is because, as it is argued, it is possible to satisfy the functionalist description and not have the appropriate mental phenomena. Some of the objections are contained in absent qualia argument, spectrum inversion, Phenomena experiment by Jackson and Nagel, China Brain by Ned Block, and Chinese Room Experiment by John Searle. However, the strongest challenge against machine/computational functionalism came from Putnam himself.

Putnam's Problem with Computational Hypothesis of the Mental States

Apart from identifying his hypothesis as sloppy because it set to establish an identical relationship between a Turing machine state, which is adequately constrained on its machine table, and psychological states of a human being, whose detail account of its nature is not available at present, (Putnam 1975, p. 292). Putnam raises another technical difficulty against the hypothesis. The description of Turing machine state identifies memory and learning, not as new states, but as new information. This means that given a new input, the present state of the machine together with memory and learning determines what the next state will be. But an understanding of the nature of a psychological state differs from this. Memory and learning are not new information. They are treated as some inherent part of human psychology which contributes into determining the present state.

This apparent disparity already distorts the analogy. Turing machine state no longer have the same structure with mental state, Putnam 1975, p. 298). This is a technical fault. Putnam then concludes that; “So, even if I am a Turing Machine, my machine states are *not* the same as my psychological states” (ibid)

In the case of psychological state, learning and memory are additional and preceding states, whereas they are just additional information printed on the tapes in the machine state. By being additional information, it means that as the input is new, so also is the learning and memory. It implies that any internal process which follows is just newly processed; no information from the previous learning or from what is stored in the memory. But this is at variance with psychological state; our learning is based on induction. Induction presupposes memory capacity and this is an internal capacity. Information from previous memory and learning are determinant factors to the next state given a particular input. Therefore, psychological state cannot be a machine state.

Putnam’s Arguments in “Representation and Reality”

In *Representation and Reality* (Putnam 1988), Putnam identifies some problematic consequences which his hypothesis raises against an attempt to reduce mental state to machine state. Instructively, he still strongly holds that at a critical level mental state is describable in machine terms even though we might not have had detail knowledge of how to go about the reduction process at present. He is therefore unwilling to give up the thesis that mental state is equivalent to functional states of a computer machine. “This much – and it was central to my former view – I shall not be giving up in this book, and indeed it still seems to me to be as true and as important as it ever did”, (Putnam 1988, p. xii). However, we may not worry so much about the portion which Putnam intends to repudiate in *Representation and Reality*, but of course, we may not be in doubt about the portion he intends to withhold. This might not be unclear to us by the understanding of the background from which Putnam approach mind-body problem. The next few lines after this quote makes it so clear what is it that Putnam intends to do in this book. Part of what he wanted to do is “try to do a trick attributed to adepts in jujitsu of turning an opponent’s strength against himself...” (Putnam 1988, p. xii). One portion of the hypothesis which Putnam wanted retained is the assumption that there is no property in nature which cannot be computationally described.

Putnam challenged the notion of multiple realizability however. This notion states that a particular mental state described as an abstract functional state can be implemented by different physical substrates. In other words, ‘pain state’ described as an abstract functional state is capable of being multiply realized by various physical structures. Mental state cannot be identical to any of the physical structures (brain structures) which realize it. This is Putnam’s core argument to prove that mind –brain identity theory is false. Now Putnam identified that similar problem confronts the notion of multiple realizability. For him,

The purpose of these chapters is to argue that mental states are not only compositionally plastic (the same “mental state” can, in principle, be a property of systems which are not of the same physical constitution) but *computationally* plastic as well – the same mental state (e.g., the same belief or desire) can in principle be a property of systems which are not of the same computational structure. Mental states cannot literally be “programs”, because physically possible systems may be in the same mental state while having unlike “programs.” (Putnam 1988, p. xiv).

If it is true that mental state is a software program of the brain (the digital machine) which can be multiply realized, then meanings of concepts, and propositions are determined in the machine table and are abstractly defined. Machine table is a pure abstract process. This further implies that the nature of causal relationship among terms, concepts, and statements of beliefs is determined in the abstract machine table (where the software is being processed). Then, it follows that *meaning is in the head* and environmental evidences do not play any role. This conclusion is implicitly against Putnam’s *naturalism*. For Putnam, “meaning is determined by reference” and that is why “We cannot individuate concepts and beliefs without reference to the environment”, (Putnam 1988: 73). This means that “Meanings aren’t “in the head”” (Putnam 1988, p. 73). Putnam illustrates the point further with his “Twin Earth” thought experiment. This thought experiment is used to substantiate the point that environmental factors play a substantial role in meaning fixation.

The theory which presupposes that meaning is in the head is against Putnam naturalism. If meaning is not in the head, then propositional attitudes expressing mental states such as ‘believing that it is raining, feeling certain that the book is on the table, believing that the weather is cold, and so on, cannot be “states” of human brain and nervous system considered in isolation from environmental evidences. If empirical evidences from the environment are necessary to determine the meaning of a particular statement of belief which expresses a functional state, then states expressed by the statements definable in terms of parameters which would enter into a software description of the organism, with no input from the environment, cannot be “functional states” of the brain, Putnam 1988, p. 73)

If meanings are not exclusively in the head and if it is construed as including empirical information from the environment, it means that the environmental factor plays a role in determining the functional program that a particular system will compute. For instance, functional system *A* in environment 1 will compute functional program for mental state *X* based on the empirical evidence available for it. System *B* in environment 2 will compute functional program for mental state *X* based on the empirical evidences available for it. For instance, if Jack is in pain because of cold weather, this mental state is different from Jane’s pain caused by hot weather. These are different functional/computational

structure. But surely, we would agree that the state describing predicate “being in pain” is the true for both of them regardless of the differences in their input and programming. Following this description, we would have several different functional programs computed for the same mental state X because of differences in the environment. This is the analysis of Putnam’s argument that it is possible for systems with different functional programs to be in the same mental state. This proves the point that computational functionalism which describes a mental state as an abstract computational state of the brain cannot be correct.

If different functional system can be in the same mental state, then to be able to have an adequate description of mental states, there must be a means of establishing relationship among all the *physically possible systems*. For Putnam, the only way to do this is by showing an *equivalent relation* between the structures of all these physically possible systems. By “physically possible systems” we mean functional organism cum environment. And by the notion of “equivalent relation”, this is the one that satisfies the properties of reflexivity, and transitivity. Logical relations of reflexivity, and transitivity are to be used to show a relationship among all the possible *physically possible systems*. And Putnam’s argument is that this is an impossible task. This is because if such an “equivalence relation existed, it would be *undiscoverable by physically possible intelligent beings*.” (Putnam 1988: xv) This is an impossible task because there are so many conflicting pieces of information and empirical evidences which will make this equivalence relation possible.

The question is; in computational terms how do we represent or harmonize conflicting empirical evidence and or conflicting functional structure? This is because, as there are innumerable different environments and cultures and their various means of impinging on our nerve endings, so also are differences in the way that each person perceives the environment. Beyond this immediate environment, how do we accurately compute all possible environments, possible meanings of concepts and conceptual representation by individual organism which shares similar characteristics? This is Putnam’s reason for the supposed impossibility of that task. But without the possibility of this equivalent relation among all physically possible organisms, there cannot be a possibility of an adequate description of the nature of mental states as physical component of the world.

Gödel’s Incompleteness Theorem and Computational Hypothesis

The idea of Kurt Gödel’s Incompleteness theorem is that for any system of logic suitable for reasoning about elementary arithmetic, there exist arithmetical truths that cannot be proved in that system of logic, if that system of logic is consistent, (Buechner 2008: 8). Logic is the language of computation. This is a limitation on the nature of the machine state. If mental state is an equivalent of machine state, then this is also a limitation on the account of the nature the mental states. However, for Putnam, even if the description of an equivalent relation is possible, then whether or not the description is correct can never

be justified by the method of justification prescribed by the description itself. The description implied is a formal one which is done with the formal or logical language.

The argument is, suppose the formal description we wish to do is tagged ‘the Master Program of the mind’, it is subject to Gödel’s theorem. Then, whether the Master Program is correct or not cannot be justified either formally or informally. A formal description will be subject to Gödel’s theorem. The correctness or otherwise of the description could not be ascertained. No informal means of describing the equivalent relation. This is because such a description requires a formal procedure. Besides, such a description will be too large to be described informally. This is the summary of the Putnam’s use of Gödel’s theorem to show that an equivalent relation among different computational description cannot be formally or informally proved.

Now, this conclusion leads to the second argument which is called the *triviality argument*. The argument is that if an equivalent relation among different functional structures could not be proved, then it means that computation becomes arbitrary and there is no means of justifiably determining and precisely describing the relationship between a functional system and a computable program, which a particular functional organization implements at a particular time. And since it has been shown that there are numerous but different programs which individual functional organization can implement at a time, then there is no way of ascertaining which one a particular functional organization is running at a time. For instance, since there is no means of justifying the correctness or otherwise of the functional program, a human functional organization may compute any arbitrary program.

Since, it is impossible to establish an equivalent relationship among the numerous possible physical systems there is no means to identify a particular functional system with a particular computable programme. Suppose F1, F2, F3, F4, F5 Fn are possible functional systems. Suppose the possible computable programmes are X1, X2, X3, X4, X5, Xn. It means that it is possible for any F to compute any X of the possible computable programmes. Goats, frogs, and other animals are examples of functional systems that also compute programmes. If any functional system can compute any programme, then, according to Putnam, it is possible for a human functional organization to implement frog’s, or goat’s, or any other programme. And in as much as the printer beside me is also a functional system, it may be computing market structure as a programme.

Furthermore, there is no way to determine what a functional organization is or is not implementing at a particular time. This is the point that Putnam is making in “The difficulty with this claim, and with all such claims, is not that physically possible organisms don’t have functional organizations, but that they have too *many*” (Putnam 1988: xv). The main point is that computation becomes arbitrary. Therefore, there is no way by which a sufficient description of the nature of mental states as a physical component of the world can be provided through arbitrariness. This is the summary of Putnam’s triviality argument.

By this it is evident that the nature of mental states has not been adequately shown. At this point it may be reasonable to ask the question again; what then is the nature of mental states?

Conclusion

This research has shown that the nature of mental states is not yet adequately accounted for by any of the physicalist theories. This became apparent in the difficulties which Putnam's variant of functionalism encountered. But then, it may still be asked; what is this thing called "mental states" and how can it be adequately accounted for? From the discourse some truths have emerged concerning the nature of mental states. First, it is apparently established that mental states are nothing supernatural or that whose nature belongs otherworldly. The fact which has become convincing is that mental states are natural states. Second, however evasive the nature of mental states might appear at present, since it is natural, it is accountable by a naturalist theory. In passing, the problem may be that the appropriate theory which will do the right job is yet to be discovered. As Chalmers opined, the problem may even be with our linguistic scheme, (Chalmers 1996: xi). But skeptically, in order for a greater portion of natural processes, principles and functions to be understood, there must be some things which may not be understood even though they are natural. Gödel's problem, you say! In other words, I am skeptical of the argument that nature can adequately understand itself. Something natural must remain unjustified for other natural things to be justified.

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