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Putnam, Searle and Boden on Mental Cognition versus Machine Cognition: The Journey back to the Beginning

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Abstract

The main question of this paper is to account for the nature of mental states. Putnam's hypothesis opines that the nature of mental states is analogous to the nature of machine states. Searle challenges Putnam's hypothesis in the Chinese room experiment. The experiment shows that it is indeed possible to satisfy Putnam's requirements for having a particular mental state without having the mental states in question. The question which is being pressed in this paper is whether, in view of Boden's position, what actually constitutes meaning of codes and symbols, or whether codes and symbols, have independent meanings different from the transferred ones?. This is to examine whether Searle's arguments still maintains its plausibility against Putnam's computational hypothesis of the mind. The paper concludes that from Boden's view, Searle's justification for his challenge only raises the original question; the question concerning the nature of mental states.

Key Words: Chinese room, Computational Hypothesis, Symbols and Codes, Computer machine, Machine table.

Introduction

What Putnam's computational hypothesis of the mind specifies is that the nature of human mind is

synonymous with the nature of the machine states. This is exemplified in the analogy of Turing machine. Therefore, the hypothesis claims that at the fundamental level of description, an appropriately programmed machine is a mind. But, Searle challenged this position in his popular Chinese room experiment. This experiment demonstrates that Putnam's hypothesis might be necessary about the nature of mental states but not sufficient. The reason is that it is possible to satisfy the requirement of the hypothesis without having the mental states in question. This is because while computation is syntactical, cognition is semantical.

However, Boden, and Newell and Simon, challenged Searle's submission against the hypothesis. For Boden, nothing differentiates the digital symbols and codes from linguistic symbols and codes. For her, both comprises synonymous characteristics. In that wise, what is called meaning is arbitrarily conferred on codes and symbols depending on circumstances and or conventional needs. The paper argues that Searle's justification for his challenge only assumes and raises the original question.

Searle's Chinese Room Experiment

What Putnam's popular hypothesis[1] argues is that the nature of mental state is determined by its causal relations to stimulus input, behavioural output, and corresponding mental states, as specified by the Table

[1] Putnam, H, "The Nature of Mental States". In Putnam H. (ed) *Mind, Language and Reality: Philosophical Papers.* London: Cambridge University Press,1975, pp 429-440

of instruction. It is argued that this process is computable by any Turing Machine. This is characterized by the analogy of Turing machine.[2] The claim, therefore, is that whatever is constitutive of the mental states is nothing over and above and it is equivalent to the description of the nature of the machine states. The distinction between syntax and semantics is strongly underlined by Searle's Chinese room experiment. The argument from the experiment concludes that the nature of machine states is syntactical while the nature of the mental states is semantical.

The Chinese room experiment is a direct attack on the claim that thought can be represented as a set of computable symbolic functions. Searle describes a person (Searle-in -the -room) who only speaks English. He is in a room with only Chinese symbols in baskets and a rule book written in English for moving the symbols around. The Searle –in –the room is then ordered by some Chinese-out- of- the- room to follow the instruction in the rule book in order to send certain symbols out of the room when given certain Chinese symbols. Suppose that Chinese speakers are communicating with the Searle- in –the- room via the Chinese symbols. According to the experiment, it would be absurd to claim that the English speaker (Searle-in-the –room) understands Chinese language simply based on these syntactic processes.

Searle raised two main arguments in the experiment. The first is that it is possible to satisfy Putnam's

[2] Turing, A.M. (1950) "Computing Machinery and Intelligence" Mind 59, No 2236, (1950): 433-460. Reprinted in Boden M. A. (1990). (ed) *The Philosophy of Artificial Intelligence*, Oxford, Oxford University Press, pp 40-66.

computational hypothesis and not having the mental state in question. The Searle- in- the- room only has the syntax of the Chinese symbols and not the semantics although he was able to produce correct answers to the questions. That is, though he is able to turn out correct symbols, there is something about the knowledge of the Chinese symbols that Searle- in- the- room does not seem to possess. The knowledge of the semantics of the language differentiates Searle- in- the- room from a native Chinese speaker. While Searle- in- the- room has the syntax of the symbols, he does not have their semantics.
Searle argues that:

> The limitation was corrected by computer functionalism to the extent that it at least specified a mechanism: the computer program that mediated the causal relations between the external input stimuli and the external output behavior. But the difficulty with that theory is that the program is defined purely formally or syntactically, and consequently does not, qua program, carry the intrinsic mental or semantic contents that human mental states actually have.[3]

Searle seems to be making a prima-facie distinction between machine state and mental state. This is arguing that the nature of the machine states is syntactic. It only consists in specifying the structural arrangements of the codes and symbols used in the

[3]Searle J. *Philosophy in a New Century: Selected Essays. Opt cit*, p 60

computation based on some certain recursive rules or instructions. For him, this structural process obviously lacks the intrinsic meaning or semantic content of the codes and symbols involved. Correspondingly, Searle argues that this is what differentiates a human being from a computer machine. Whereas a machine state consists of syntactic process mental states consists of the semantic content of the codes and symbols.

For instance, in the assignment of number addition; the machine does not have the meaning or thought of or about the numbers. It is incapable of independently conceptualizing numbers in various ways or raising the perennial question about the possibility or otherwise of the ontology of numbers. It only adds in accordance to the appropriate table of instruction. But, not only are the human beings able to add these numbers, questions about the meaning and ontology of these numbers are parts of such mental phenomenon. Besides, it is also opined by some biological naturalists that there is something it is like to know that 2+2=4. The main point, therefore, is that syntax is not semantics.[4] It is argued that computational hypothesis is purely syntactical while mental states involves both syntactical and semantic in nature. Machine states, therefore, are insufficient to accounts for the nature of mental states.

The second point is that computational hypothesis only attempts to simulate cognitive and mental capacities. But according to Searle, "simulation is not duplication."[5] Simulating a particular phenomenon is like imitating the phenomenon. Machine states hypothesis is simulating mental states in the sense of

[4]Searle J. *Philosophy in a New Century: Selected Essays. Opt cit*, p 68

[5]Searle J. *Philosophy in a New Century: Selected Essays. Opt cit*, p 68

artificially programming a system to demonstrate human cognitive capacities. A calculator is artificially programmed to demonstrate computer machine's arithmetic capabilities. This is done to show that human arithmetical cognitive capabilities are computationally or mechanically demonstrable. However, the description of a calculating process in a calculator is not synonymous to the account of cognitive ability of human being regarding calculation. It is clear from Searle's argument that, in this case, imitation cannot be the duplicate of the original. There are however, some things which might be successfully simulated or imitated. Indeed, it is possible to simulate digestion, rain storms, arithmetic abilities, and so on. Anything which is capable of precise definition may be successfully simulated. But, for Searle:

> it is just as ridiculous to think that a system that had a simulation of consciousness and other mental processes thereby had the mental processes as it would be to think that the simulation of digestion on a computer could thereby actually digest beer and pizza.[6]

The point is that it is implausible to think that the simulation of a phenomenon or an event is the real phenomenon or the event. The claim is that machine state is just a simulation of the mental state and that it is not equivalent to the mental state. For Searle, the only means to arrive at the mental states is to duplicate it and not to simulate.

[6]*Ibid*, p 68

> You would have to duplicate, and not merely simulate, the actual causal powers of human and animal brains. There is no reason in principle to suppose that we would have to have organic materials to do this, but whatever material we use we have to duplicate the causal powers of actual brains.[7]

This means that for a system to duplicate mental states, it must be such that it possesses the right sort of properties with which to duplicate the causal powers of the brain. However, this also enunciates that simulation is not equivalent to duplication. The argument which comes out of this analysis is that for the nature of mental states to be accurately and adequately accounted for, the human organic system has to be duplicated. The computational hypothesis fails, as an account of the mental states, because it is just a simulation and not a duplication of mental state.

Searle's Distinction between Syntax and Semantics

What is apparent in the Chinese room experiment is that there appears to be distinction between syntax and semantics. This opinion is vividly shared by Ned Block.[8] Searle identifies this distinction as a major challenge against computational hypothesis. One of Searle's[9] main arguments against Putnam's hypothesis is that computation is about mere syntactical description. Syntactical description is

[7]Searle J. *Philosophy in a New Century: Selected Essays. Opt cit*, p 62

[8] Block N. "The Computer Model of the Mind." In Alvin Goldman (ed) Readings in Philosophy and Cognitive Science. Cambridge, Mass: MIT Press, 1993, p 819-831

[9]Searle J. *Philosophy in a New Century: Selected Essays.* (New York: Cambridge University Press, 2008), p 70

about the structural arrangements of the symbols, codes, or sentences. It is not about the semantic of the mental content. Block's summation of the issue might be instructive;

> At the most basic computational level, computers are symbol-crunchers and for this reason the computer model of the mind is often described as the symbol manipulation view of the mind.[10]

Semantics deals with the meaning of terms, concepts and sentences, which may represent codes and symbols and how this is determined. For computational hypothesis to account for the mental states, it must be able to account for the semantics nature of mental content. For this difficulty, Searle opines; "The program by itself is insufficient to constitute mental states because of the distinction between syntax and semantics."[11] It may be asserted that, just as Searle-in-the- room, all that is done in the computation appears to be mere structuring, arrangement and re-arrangement of digital codes and symbols. Supporting this point, Searle argued that syntactical knowledge does not guarantee semantical knowledge. According to him:

> The program by itself is insufficient to *constitute* mental states because of the

[10] Block N. "The Computer Model of the Mind." In Alvin Goldman (ed) Readings in Philosophy and Cognitive Science. Cambridge, Mass: MIT Press, 1993, p 828

[11] Searle J. *Philosophy in a New Century: Selected Essays.* (New York: Cambridge University Press, 2008), p 70

> distinction between syntax and semantics. And it is insufficient by itself to *cause* mental states because the program is defined independently of the physics of its implementation. Any causal power the machine might have to cause consciousness and intentionality would have to be a consequence of the physical nature of the machine. But the program *qua program* hasn't got any physical nature. It consists of a set of formal, syntactical processes that can be implemented in the physics of various kinds of machinery.[12]

Searle's point might be understood in two distinct but correlated senses. First, computational functionalism is inadequate as an account of the nature of mental states because it is abstractly formulated independent of the physical structure of the implementing system. For him, for computational hypothesis to account for the nature of mental states, the account must be in conjunction with the account of the nature of the implementing physical structure. In the case of Putnam's machine structure, the account of the nature of machine states does not include the account of the implementing physical structure. The point is that computational hypothesis may only be necessary but not sufficient to account for mental state. Second, the syntactical knowledge is distinct from semantical knowledge and one does not presuppose the other.

The knowledge of computational hypothesis is syntactical because it consists of formal processes and abstract structure which can only be implemented by

[12]Searle J. *Philosophy in a New Century: Selected Essays.* (New York: Cambridge University Press, 2008), p 70

multiple physical structures. This is called multiple realisability. It is argued by Searle that mental states possess semantical properties of the mental content. This enables the system to generate mental states. But because syntactical processes cannot generate mental state, therefore, computational hypothesis is unable to account for mental states.

For instance, compare these two statements of belief; (1) “Ade loves his parents”, and (2) “Blgars grears his gerondo.” In matters of structure, there can be no controversy that the two statements are syntactically the same. Both of them consist of subject and predicate. It appears that both of them satisfy required grammatical rules for a standard sentence. But the identifiable problem is about the meaning of the second sentence. Whereas the first sentence makes a clear conventional sense of meaning, therefore makes sense, the second, in this sense, does not. The reason why the first sentence makes a sense are twofold. First, it makes its conventional linguistic meaning. Second, there are corresponding environmental evidences to which the statement refer. In other words, both are syntactically the same, but meaning is conventionally conferred on one. It carries the semantics of the speaker. It follows that no symbol or code carries an inherent meaning independent of the speaker. However, whatever makes the sort of “Ade loves his parents” carry the speakers’ conventional sense and not “Blgars grears his gerondo,” is a matter for further discussion.

Suggestive as this insight might be, it appears that it only turns around to present the question anew. The

question is; what is the nature of meaning? How do speakers formulate meaning? The point made in this example is that syntactical equivalence does not guarantee semantical equivalence. For Searle, it is impossible to generate semantical content from mere abstract computational process. This is because "There isn't any such thing as understanding in addition to symbol manipulation, there is just the symbol manipulation."[13] This is the reason for the conclusion that computational process lacks this semantical content. In syntactical structure, environmental facts does not have any influence and therefore, meaning is not involved. For instance, the logical validity of (P →Q) does not necessarily presuppose the meaning of either P or Q. In other words, whatever P or Q represent does not matter and has no influence in the validity of the rule. This is underlined by Newell and Simon in "Logic, and by implication all of mathematics, was a game played with meaningless tokens according to certain purely syntactic rules."[14] The understanding of the mental concepts carries with it the meaning of the terms and concepts used. Therefore, the hypothesis which only relies on mere syntactical structure are not sufficient as an account of mental states.

Searle[15] claimed that computational hypothesis muddled up the difference between syntax and semantics. The hypothesis presumes that syntax is sufficient for semantics, that is, "The symbol

[13] Searle J. *Philosophy in a New Century: Selected Essays.* (New York: Cambridge University Press, 2008), p 69

[14]Newell A. and Simon H. Computer Science as Empirical Enquiry: Symbols and Search, In Boden M. A. (ed) *The Philosophy of Artificial Intelligence*, *(*Oxford: Oxford University Press,1990) p 112

[15] Searle, J (*ibid)*

manipulation is all there is to understanding."[16] But, what produces semantics is more than mere abstract code, and symbol manipulation. Here is the correlation; whereas the process of symbol manipulation is abstractly described independent of the implementing physical system, this is not true of semantics. The nature of mental states combines both the syntactical and semantical underpinnings. The assumption which prevails in Searle's view is that the nature of the implementing organic system is necessary in the adequacy of the account of mental state. It is then supposed to means that syntax plus the implementing organic system is capable of generating semantics.

Further, every meaning is attached to a point of view. Every point of view is attached to a set of environmental facts. The point of view must belong to some agents. However, as Searle[17] argues, computational hypothesis faces a difficulty because it abstracted syntax away from the nature of the implementing physical organism. It is proposed that semantics, which deals with the meaning of statement of beliefs, is caused by neurobiological processes in the brain. Therefore, "Any causal power the machine might have to cause consciousness and intentionality would have to be a consequence of the physical nature of the machine."[18] But, this is exactly what the machine states hypothesis denies. However,

[16]Searle J. *Philosophy in a New Century: Selected Essays.* (New York: Cambridge University Press, 2008), p 70
[17] *Ibid*
[18]Searle J. *Philosophy in a New Century: Selected Essays.* (New York: Cambridge University Press, 2008), p 70

this line of reasoning raises some obvious questions. First, what is this thing called the semantic of the mental content? How do terms and concepts assume meaning? Searle's argument takes these for granted. But these are the issues. These questions reverts back to the initial fundamental question of the nature of mental state.

Searle[19], however, admits that at some levels of description processes in the brain are syntactical. This is because sentences and symbols are also variously and differently arranged in the brain. For Searle, "there are so to speak, "sentences in the head.""[20] To underscore the point that there are sentences in the head, it may be obvious that, for human beings, some mental contents are propositional. Propositions are structured in statements. For instance, thinking is done with statements in whichever language it is done. It seems impossible to perform some psychological tasks such as; thinking, meditating, comparing, contrasting, arranging, and so on, without using sentences. The activity is carried out "perhaps in the language of thought."[21] The language of thought is supposed to mean the mental language which is used to carry out ones thought activities. Thought activities, among other things, must consist of statements.

These activities and, therefore, sentences are certainly in the head. But, sentence may get their

[19] Searle J. "The Critique of Cognitive Reason". In Goldman Alvin (ed) Readings in Philosophy and Cognitive Science. (Cambridge, Mass: MIT Press, 1993)
[20]Searle J. "The Critique of Cognitive Reason". In Goldman Alvin (ed) Readings in Philosophy and Cognitive Science. (Cambridge, Mass: MIT Press, 1993), p 836
[21]*Ibid*.

meanings in connection with environmental evidences. It remains to be determined how terms and concepts derive their meaning in the head and in connection with the environmental facts. A pertinent question however, is whether thinking and language of thought are distinguishable. Again, that statement gets their meanings through environmental evidences only compounds our problem. The question *how*, and *why* are waiting to be answered. To answer these questions without specifying how the brain does it appears difficult if not impossible. But, this again is the main question.

What follows from these is that there is the structural arrangement of sentences in the brain. But, this structural arrangement is combined with the awareness of the meaning of the sentences. Scholars such as Ned Block realized that thought process is done through a combination of syntax and semantics. For Block, "When it finds a match, it sends a signal to a third component, whose job it is to retrieve the syntactic and semantic information stored in the dictionary"[22] For instance, "it rained, therefore, the ground is wet" combines the two notions viz; syntax and semantics. The difference between "P →Q" and "it rains, then the ground is wet" is in the meaning of the terms involved in the second proposition combined with its syntax.

[22] Block N. "The Computer Model of the Mind." In Alvin Goldman (ed) Readings in Philosophy and Cognitive Science. Cambridge, Mass: MIT Press, 1993, p 819

However, "it rains", consists of symbols and or codes. These codes and symbols are used to represent and express a phenomenon in the brain. This process may be termed encoding. What is in the brain is transferred to, represented and expressed by these symbols and codes. The issue then appears to be easier afterall! The question now is; what is the nature of the phenomenon in the brain? How does it come to be expressed in some particular symbols and codes? Again, easier as these questions appear, they are raising the main issue about the nature of mental states.

This discussion, therefore, centres on two germane questions. The first is the question concerning how the brain works in structuring these sentences. The second is how these sentences in the head get their meanings. The first question has to do with syntax while the second question deals with semantics. For syntax to guarantee semantics, "it has to have a meaning or semantic content attached to the symbols."[23] But computational description is only constitutive of mere symbol manipulation which is devoid of semantic attachment. What goes on in the mental states are more than mere symbol manipulation. When I express a sentence such as "this is my friend," there is a phenomenon of something in my head which I express. Besides, there is the feeling of awareness of my expression. Thus, there is something that machine states hypothesis lacks which

[23]Searle J. *Philosophy in a New Century: Selected Essays. opt cit*. p 61. This is because, syntax or computation or symbol manipulation in itself is not constitutive of, nor sufficient for, thinking because it is defined entirely syntactically and it is expected that thinking has to have something more than just symbols.

makes it unable to account for the nature of mental states. However, this conclusion is also, clearly, not in favour of Searle except the questions; what does it mean to know?, and what does it really mean to be conscious or aware of a mental content?, are settled. Again, these questions suggest that the ground of Searle's arguments is based upon some assumptions. These assumptions are actually the main question at the issue. The main questions are; what really constitutes the mental state? How can the nature of mental state be accounted for? What is the nature of consciousness?

Boden's Argument against Searle - in -the - Room Experiment

Boden argues to show that there is nothing in the nature of mental states that machine states hypothesis does not account for. For her, human languages are also made up of linguistic codes and symbols which are literally un-interpreted. Concepts and terms employed in communication are only conventionally defined by transference of meaning to the meaningless codes and symbols. Combining semantics and syntax together enables us to understand how to arrange and interpret the unarranged and un-interpreted codes and symbols. This brings about what we refer to as understanding. For her:

> The view held by computational psychologist, that natural language can be characterized in procedural terms, is relevant here: words, clauses, and sentences can be seen as mini-programs.

> The symbols in a natural language one understands initiate mental activity of various kinds.[24]

Furthermore, Boden opines that Searle's hypothesis fails to support the point that syntax cannot account for semantics. [25] For instance, there is a measure of cognitive understanding of language by Searle-in-the-room. This means that the man in the room understands the rules which were written in English. He was able to arrange the Chinese symbols by his understanding of the instruction written in English language. This means that right in that room, meaning is defined and something is understood. That is, in the room, he understood the meaning of the English words regarding the Chinese symbols and codes. If he understood the meaning of the English words regarding the Chinese symbols, then he understood something. It may be asserted that he, indirectly understood the meaning of Chinese symbols. The only problem which may arise is that of translation and or interpretation.

This further means that even though computer may not have a cognitive understanding of external symbols and stimulation, it has a cognitive understanding of its own program language through which it manipulates other symbols. This upholds a position that computers also possess an understanding of the semantics of its own language. The reason is that, the instruction table defines the

[24] Boden, M. A. "Escaping from the Chinese Room". In Boden M. A. (ed) *The Philosophy of Artificial Intelligence.* (Oxford: Oxford University Press, 1990) p 96

[25] Boden, M. A. "Escaping from the Chinese Room". In Boden M. A. (ed) *The Philosophy of Artificial Intelligence.* (Oxford: Oxford University Press, 1990)

meaning of concepts and or symbols used in statement of belief according to the *whims and caprice of the programmer*. But, this may not be correct unless it is agreed that meaning is transferrable. However, the question is; is meaning transferrable? This is another troubling question.

Putnam's Meaning as Reference and the Nature of Mental States

We must understand what meaning is to judge whether it is transferrable or not. Putnam's conclusion that "Meaning is reference"[26] perhaps, only raises some further questions. This, founded on realism, may suggest that meaning is fixed independently of human awareness. However, this does not appear to be the case for two reasons. First, if Putnam is correct, then in reminiscence of Berkeley view[27], I should lose the meaning of "this is a black and white television set" when the object is no longer present. But this does not seem to be the case. Even, long after the immediate experience, I still find the statement retaining its meaning. This may, be attributed to, first, the brain's information storage capacity as well as the capacity to identify some

[26] Putnam, H. *Representation and Reality*. (Cambridge: MIT Press, 1988) pp 19-41

[27] Berkeley, G. "A Treatise Concerning the Principles of Human Knowledge," in *The Empiricists; Locke*, *Berkeley*, *Hume*. (New York: Anchor Books, A Division of Random House, Inc. 1961), pp 135-305

words with some object which are not present. Second, in line with Kant's nature of knowledge, empirical data are processed and meaning is determined in the brain[28]. However, this may not be taken just for a given. The question is; how does the brain produce the phenomenon called meaning? This, actually, is a variant of the main issue.

Second, "meaning is reference" may not settle the question that meaning is fixed independent of human awareness because there are some sentences or concepts which may appear to fall without the scope of meaning as reference. For instance; "I am thinking about my death". The two key terms are "thinking" and "death". They do not appear to have direct referents, yet they seem to mean something. Hence, the statement means something to us but that meaning does not appear to be determined by its referent. The problem is how the meaning of statements and concepts as these are determined and how. It does not appear that all natural phenomena could be reduced to statement such as "water is H_2O". In other words, it may be the case that meaning is reference eventually, but the nature of mental state must be understood first for the plausibility of this claim to be determined. The point is "meaning is reference", contrary to its intention, has not absolved us from the notorious question of the nature of mental states. The nature of mental state must be understood for the correctness or otherwise of "meaning is reference" to be determined.

Now, getting back to the point, it appears meaning is transferrable. The only question is how this occurs.

[28] Kant, I. *The Critique of Pure Reason*. (New York: Everyman Library, 1978) p 25

The answer may not readily be available now. But I think, if this were not so, programming, writing, even understanding wouldn't have been possible. If this is taken for granted then two apparent observations could be made. First, this strongly suggests that meaning is transferred to the codes and symbols through the table of instruction. If this is true, then some implications may follow. First, it may follow that code and symbols, as well as the terms and concepts generated from them are initially meaningless. For instance "is" is meaningless apart from how it is defined by human cognition. This appears to be the case, and interestingly it is reminiscent of anthropocentricism. However, it is no longer just enough to shrug around with anthropocentricism, what enables the human brain to generate codes and define meaning into them should be addressed.

The second implication is that it may be impossible to know whether or not codes or symbols have or could have independent meaning. For instance, assume that for man this symbol {Ø} means *phai*. This same symbol may mean a different thing for a Martian say *fhohi* or for a Venusian say *Qhoi etc,* and eventually trailing indeterminacy. But, it is not impossible that this symbol has an inherent independent meaning. It appears that there must be something which each of those means. The question is; how can this be known? It may only be difficult but not impossible to understand what the symbol means for the Martian or Venusian. That can be done if we are able to interact with them to understand the meaning they attach to the symbol. For instance, the object that gives light to this planet is called "Sun" by the

earthians. It may not be our business what other aliens call it. But, the question still remains; what is that object?

One answer to this question is that it is inconceivable how we are to know what it is. This is because it means that we can only know what it is only when we become that thing. This is inconceivable. This is the issue. Symbols and codes assume their meanings from points of view. Points of view is points of view of some individuals. It seems to suggest that reality beyond some particular points of view are shut out. This is underscored by Nagel's argument[29] in *Mortal Questions*, that it is difficult to have and understanding of bats awareness. This further suggests that Putnam's "Meaning is reference", if true is from a point of view. It follows that whatever we may understand about the nature of meaning is through the study of point of view. This could only be understood by the study of the nature of human mental states. Now we are back to the same original question.

Conclusion

The main finding of this paper is that Searle's intriguing challenge against Putnam's computational hypothesis, through the Chinese room experiment, only raises the original question; what is the nature of mental states? Whereas this is the main question, Searle builds on the assumption that this question is settled. Saying that Putnam's hypothesis might be satisfied while the mental states may still not be attained presupposed an understanding of the nature of mental states. And when what is to be proved is

[29] Nagel, T. *Mortal Questions*. Cambridge: Cambridge University Press, 1979

advertently used to prove another position, then the charge of *pettito principii* lurks around. Second, building upon the first charge, Margaret Boden, argued that linguistic code and symbols also have synonymous nature and exactly behave as computational codes and symbols. For them, nothing distinguishes one from another. This, ultimately, raises a question about the nature of meaning. The paper argues that the question concerning the nature of meaning depends upon and is determined by the question of the nature of mental states. The question again is; what is the nature of the mental states?

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