Artificial Intelligence and Personhood

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Artificial Intelligence & Personhood

Robert K. Garcia

I. INTRODUCTION

What does it mean to be a person? What *is* a person? These questions address one of the most fundamental concepts for ethics, that of personhood. Currently, this concept is under considerable critical review. In a recent issue of *Ethics & Medicine*, Jim Leffel[1] provided an instructive discussion of three competing definitions of "humanity:" that of theism, enlightenment rationalism, and postmodernism. Theism defines human personhood essentially: there is a universal human essence, which is the image of God. Enlightenment Rationalism defines personhood rationally: humans are essentially and uniquely rational beings. Postmodernism defines personhood socially: humans are composed by their social relationships. On this latter view, it is not that humans have a capacity or *telos* for social relationships; rather, a person is constituted by her situatedness in society and her relations therein—there are no universals or essences, much less a universal human essence.

I would like to add to Leffel's list a fourth view, one prevalent in naturalistic cognitive science, namely, the view that persons are essentially *functional* things. This is not the belief that human persons have functionality. Rather, this is the claim that

[1] Jim Leffel, "Engineering Life: Defining 'Humanity" in a Postmodern Age," *Ethics & Medicine*, Vol. 13:3 (1997), 67-71.

something being a person is a matter of it standing in the right functional relationships—irrespective of its intrinsic properties or its natural kind. Being a person, therefore, is not a matter of having certain *intrinsic* properties or being a certain *kind* of thing. Functionality, furthermore, is specified in terms of causal relationships.

In what follows, I argue that Artificial Intelligence (AI) has serious ethical implications in virtue of it implying a functional criterion for personhood. My overall burden is to critique two versions of AI on ethical and philosophical grounds. It seems prudent to state my conclusions outright. First, AI views are untenable because they require a theory of the mind whose implications conflict with certain ethically-important beliefs which seem to be true or highly justified, namely, the beliefs that certain individuals (e.g., infants) are persons, and that reason and meaning play a significant role in human mental processes (e.g., decision making). Second, contra AI, it seems impossible that something can be a mind or mental state in virtue of it being a computer or computational process.

Please note, however, that I am not suggesting that work in cognitive science, AI, or related fields is completely without profit. There is, for instance, exciting and useful work being done using computers to model or study the organic processes of brains or other natural systems. This type of work has been called "Weak AI" by John Searle[2] and does not make a metaphysical claim about whether minds and

[2] John Searle, *The Rediscovery of the Mind*, (Cambridge, Massachusetts: MIT Press, 1992), p. 201-2.

computer programs are the same kind of thing (it is this latter claim which is at issue here). In this paper, I mean to exclude Weak AI from the denotation of "AI."

The place of AI in the history of the philosophy of mind

As we shall soon see, the issue of AI is important for ethics precisely because as a theory of the mind, it has implications for personhood. However, before we focus on AI, it will be helpful to appreciate AI's place in the history of philosophy. We may begin with René Descartes, who is famous—even infamous—for espousing substance dualism; on his view, the mind and the body are two distinct substances—one mental and one physical. In recent years, however, substance dualism has been given the sociological dunce-cap. Although dualism faces considerable challenges, it is often rejected because of an a priori commitment to philosophical naturalism, the view that the natural world is all there is. Other thinkers find substance dualism guilty of placing the mind entirely in the private and subjective arena, directly accessible only to its solitary ego, and out of reach of other minds. In response to this problem, a general view called behaviorism managed a radical overcorrection by shoving the mind entirely into the public arena.[3] According to *logical* behaviorism, any statement about the mind is equivalent in meaning to a set of statements about behavior. Thus, for example, the statement "Billy believes that it will rain" is literally synonymous with "Billy behaves as if it will rain." Similarly, *ontological* behaviorism claims that psychological facts are identical to behavioral facts; a pain, for example,

[3] Jaegwon Kim, *Philosophy of Mind* (Boulder, Colorado: Westview Press, 1998), p. 27.

just is wincing and groaning. In effect, both versions of behaviorism ignore the internal aspect of the mind. The devastating objection to both versions of behaviorism is that behavior is neither necessary nor sufficient for belief. One can believe that P without behaving as if one believes that P; and, one can behave as if one believes that P without actually so believing. The truth conditions for behavioral statements and mental statements are different, and this implies that the statements cannot be synonymous. Thus, to put the point playfully, since behaving as if you believe in behaviorism is neither necessary nor sufficient for actually believing in it, and since believing in behaviorism is neither necessary nor sufficient for behaving as if one believes it, most philosophers have neither behaved as if nor believed that behaviorism is true.

Following behaviorism came type-identity physicalism, according to which every type of mental state is identical with a type of brain state. Neuronal processes do not *cause* conscious processes—they *just are* conscious processes.[4] On this view, a pain is literally identical with a specific state of the brain and/or central nervous system, such as a certain set of C-fibers firing. Although there are several important objections to the identity theory, one in particular has spawned a new conception of the mental in psychology and cognitive science.[5] This objection, called the "Multiple Realization Argument," elicits the intuition that any given mental state can be realized by or in a large variety of physical or biological structures. Thus, type

[4] Colin McGinn, *The Mysterious Flame: Conscious Minds in a Material World* (New York: Basic Books, 1999), p. 18.
[5] Kim, p. 73.

identity physicalism is guilty of "neuronal chauvinism" by claiming that "unless an organism has C-fibers or a brain of appropriate biological structure, it cannot have pain."[6] This is chauvinistic both against other actual organic systems—whose brains are very different from human brains, and against other possible non-organic systems—such as aliens whose biology is silicon-based, not carbon-based.

The question raised by the multiple-realizability of mental states is the following: "What do all pains—pains in humans, pains in canines, pains in octopuses, and pains in Martians—have in common in virtue of which they all fall under a single psychological kind, pain?"[7] What, in other words, *individuates* mental kinds? One important and highly influential answer to this question is called Functionalism, according to which a mental kind is a functional kind, and mental states are defined in terms of the causal relationships between a system's external input, causal output, and internal causal relations. The concept of a table, for example, is a functional concept: what makes something a table is its functioning in a certain way, rather than in its having a certain physicochemical structure, whether plastic, metal, or wood. Similarly, the concept of pain is a functional concept; Martians, humans, and dogs can all be in pain in virtue of their mental states instantiating the causal role distinctive for pain. According to functionalism, in fact, any system whatsoever, no matter what it is made of, can have mental states provided only that it have the right causal relations between its inputs, its inner functioning, and its outputs. Thus, rather than being characterized by its intrinsic

[6] *Ibid.*, p. 69.
[7] *Ibid.*, p. 76.

features, each mental state is characterized by the inputs and outputs that constitute its role in a system.[8]

Now, what functionalism needed was an account of "what it is about the different physical states that give different material phenomena the *same* causal relations."[9] *How*, in other words, are different physical structures causally equivalent? To this question, the developing science of Artificial Intelligence offers a powerful and provocative answer: "different material structures can be mentally equivalent if they are different hardware implementations of the same computer program." Thus, neuronal chauvinism is circumvented by claiming that the brain is just one of the many possible computer hardwares that can have a mind. Just as programs are capable of being implemented in a variety of intrinsically different hardware, so minds and mental states are capable of being realized in multiple physical systems and states. Hence, functionalism begot AI.

Computers and Programs

Before distinguishing two versions of AI, it must be noted that essential to AI is the claim that the internal functioning of the mind is computational. Mental states and processes are computational states and processes. That is, the brain is a computer, a system or device whose function is to manipulate symbols according to a program. And a program is an algorithm, a systematic procedure for solving a problem in a finite number of steps. Thus, a computer program is a symbol

[8] J. P. Moreland and Scott Rae, *Body & Soul: Human Nature and the Crisis in Ethics* (Downers Grove, Illinois: InterVarsity, 2000), p. 25.
[9] Searle, *The Rediscovery of the Mind*, p. 43, emphasis mine.

manipulating algorithm.[10] A brain, therefore, is one of many actual and possible computers whose function is to implement programs, and a mental state is an actual function, the implementation of a program.

Strong AI and Cognitivism

At this point, it will be useful to employ Searle's distinction between Strong AI and Cognitivism. These two views will occupy the rest of this paper. Whereas Strong AI claims that a mind *just is* a computational state, Cognitivism claims that a mind *is at least* a computational state. Thus, on Strong AI, *all there is* to having a mind is implementing the right program; mental processes are constituted by computational processes. As Searle explains, "any physical system whatever that had the right program with the right inputs and out puts would have a mind in exactly the same sense that you and I have minds."[11] Thus, the slogan: the mind is to the brain as the computer program is to the computer hardware.

Cognitivism, on the other hand, is the view that mental processes, while not wholly constituted by computation, nevertheless have a computational structure. The brain is a digital computer and the mind is, at least in part, a computer program. Thus, while there is *more* to being a mind than just implementing the right program, all minds—whatever else may be true about them—are necessarily computational. An entity cannot be a mind if it is not computational.

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[10] McGinn, p. 178.
[11] John Searle, *Minds, Brains, and Science* (Cambridge, Massachusetts: Harvard University Press, 1984), p. 28.

Let me state these views in terms of necessary and sufficient conditions, since that is how I will structure my critique.

- **Strong AI** asserts that computational states are *necessary and sufficient* for minds.
- **Cognitivism** asserts that computational states are *necessary* for minds.

II. THE NATURE OF MY ARGUMENT

The burden of this paper is to level a two-pronged critique against both Strong AI and Cognitivism. The first prong concerns the ethical implications of each view and the second prong concerns their philosophical problems. I will argue that the ethical implications of each view are problematic in that they contradict or undermine fundamental moral beliefs or concepts. Thus, they may be taken either to indicate the moral cost of the view—i.e., that we must give up those critical beliefs or concepts, or as defeaters to the view by way of a *reductio*—i.e., the view implies the falsity of what we know or justifiably believe to be true. At the very least, the ethical implications indicate the stakes involved in these issues and a reason for a careful and sober estimation of AI's philosophical warrant.

It is important to recognize that the rejection of AI is not a partisan position held only by theists or other non-naturalists. In fact, some of the strongest opponents of AI are outspoken atheistic naturalists (e.g., Searle and McGinn). Whether or not a naturalist can consistently reject AI is an interesting question outside the purview of this paper.[12]

[12] Kim, for example, has questioned Searle's consistency on this very point. See Kim, p. 99-101.

III. ETHICAL IMPLICATIONS

The ethical implications of each view will be drawn out by considering how the view construes personhood. Obviously, the concept of personhood is central to ethics. It is persons whom we believe to be morally responsible, have certain rights, and enjoy intrinsic value. The importance of personhood is especially obvious, for example, in the abortion controversy, where debate often centers around the personhood of the fetus.

Just as personhood is fundamental to ethics, so the mind is fundamental to personhood. Among the things which are taken to constitute personhood are the capacities[13] for intelligence, understanding, sentience, and responsible agency. Since these are *mental* capacities, the nature of the mind will ultimately determine the nature of these capacities.

First, AI Implies a Functional Criterion for Personhood.

The argument of this section can be summarized as follows:

1. Both Strong AI and Cognitivism stipulate a functional requirement for minds, and thus personhood.
2. This requirement, "implementing the right program," has nothing to do with intrinsic properties or capacities, but only functionality or causal relations.
3. A "right" program is one that functions like a real mind—one that passes at least the Turing Test.
4. However, certain beings we know to be real persons cannot pass even the Turing Test.

[13] I mean here to denote the *ultimate* capacities that are taken to constitute personhood. For a helpful discussion of this subject, see Moreland and Rae, *Body & Soul*, pgs. 71-73.

5. Thus, either we must deny that certain said beings are persons or deny that implementing the right program is necessary for having a mind and being a person.

Since both Strong AI and Cognitivism make being in a computational state a necessary condition for being a mind, I will focus my discussion of ethical implications on this shared necessary condition. I will save for a philosophical critique Strong AI's claim that being in a computational state is a *sufficient* condition for being a mind. The fundamental ethical problem with both views is that each implies a *functional* criterion for personhood, according to which the essential properties and/or value of an entity are *not* sufficient for personhood.

For AI views, the functional criterion is spelled out in terms of "implementing the right program." Such implementation, however, has nothing to do with the *intrinsic* properties or capacities of the system or entity in question. This is because the intent of functionalism is to account for the multiple realizability of mental states in a way that avoids neuronal chauvinism against possible minds whose basal structure is intrinsically different from that of human brains. Functionalism stipulates that a mental state is what it is wholly in virtue of its complex causal relations, and not in virtue of whatever stands in those causal relations. Thus, AI views must find a *functionalist* criterion for what it means to "implement the right program."

Nor, however, is it sufficient that something have the *capacity* to implement the right program. If this was true, then, assuming we had the "right" program loaded, we would never have *to turn on* a computer for it to count as having mental

states. Rather, it is the actual causal functioning of a computer—the program implementation—that is required.

Thus, *implementing a program* means functioning in such a way that the causal structure and processes can be interpreted as manipulating syntax according to an algorithm. And, the *right program* presumably means a program whose performance when implemented is indistinguishable from the performance of humans who are intelligent, sentient agents. That is, the "right program" would have to pass at least the famous Turing Test. The basic idea behind the Turing Test is that if we are to ascribe intelligence and sentience to a computer, it must behave in a way that is indistinguishable from an intelligent human being.[14]

Now, if being a person requires having a mind, and if, according to Strong AI and Cognitivism, having a mind requires implementing the right program, then whatever does not do so is not a person. Herein lies the rub for ethics. AI's functionalist criterion for personhood denies personhood to those who are not functioning "rightly." If implementing the right program is necessary for personhood, and if by "right program" is meant one whose causal functioning is indistinguishable from the intelligent performance of human persons, then any organism which is not performing up to this standard is not a person.

However, it is obvious that many beings often described as persons do not pass such a test, that is, many are not causally functioning in such as way as to

[14] For an interesting description of how actual Turing Tests have been performed, see Paul Churchland's *The Engine of Reason, The Seat of the Soul* (Cambridge, Massachusetts: MIT Press, 1996), pgs. 227-234.

simulate intelligence. Fetuses, prelinguistic children, adults with localized aphasia, comatose patients, even those who are asleep—none of these beings' causal functions simulate intelligence.[15] Thus, either we must deny that certain said beings are persons or deny that implementing the right program is necessary for having a mind and being a person. Furthermore, since on Strong AI and Cognitivism the intrinsic properties of a thing are irrelevant for whether or not it is a mind, these views make the condition of being essentially made in the image of God *insufficient* for personhood and/or the intrinsic value and rights that attend it.

Second, AI Implies that Reason and Meaning are Irrelevant in Mental Processes

The argument of this section is as follows:

1. If mental processes are essentially computational, then their constitutive states follow each other not because of their logical or semantic relationships, but because of nomological causal necessity.
2. Minds, therefore, are in whatever states they are in *entirely* because of whatever causal laws govern their physical computational processes.
3. Thus, since logical and semantic relationships have no determinative effect on mental processing, they are practically irrelevant for mental states and processes.
4. Thus, we must either deny that mental processes are essentially computational, or we must give up the common-sense belief that reasons and meanings do play a role in mental processes.

Both Strong AI and Cognitivism, by stipulating a necessary condition for minds and mental states, imply that every mental state and process is essentially computational. AI implies that rationality, understanding, sentience, and agency are

[15] *Ibid.*, p. 234.

essentially computational processes. The problem, however, is that this view makes reason and meaning irrelevant to mental processes.

If mental processes are essentially computational, then their constitutive states follow each other not in virtue of their contents standing in certain logical or semantic relationships, but by nomological causal necessity. Thus, a mind does not make logical inferences and does not relate ideas in virtue of their meaning. Rather, a mind is in whatever states it is entirely because of whatever causal laws govern its physical computational processes. Consider a mind which goes through the following thought process. First the mind thinks that:

(1) All humans are mortal, and Socrates is human.

After considering 1, the mind thinks that:

(2) Therefore, Socrates is mortal.

We intuit that (2) stands in a logical relationship (that of entailment) with (1). However, if the (1)-to-(2) mental process is computational, then (2) is not a mental state realized in virtue of the logical relationship between (1) and (2). Rather, (2) would be realized entirely in virtue of the fact that the physical properties of the syntax representing (1) nomologicaly cause the realization of the syntax representing (2).

Thus, if minds are essentially computational, the relationship between 1 and 2 would be causal:

(1) *causes* (2)

and not inferential:

(1) *implies* (2).

Thus, it is not surprising to hear philosopher Jaegwon Kim say that for any computational process, the functional or computational relations among the various abstract parameters—such as the symbols, states, or scanner-printer—can be replaced with appropriate causal relations among the physical embodiments of these parameters.[16]

The same point can be made for the semantic relations between mental states. In a computational process, states do not relate to each other in virtue of whatever meaning might be assigned to them, but in virtue of their syntax. And syntax, of course, is just the shape or properties of a physical state. As Kim writes, "Computational processes respond only to the shapes of symbols; their meanings, or what they represent, are computationally irrelevant."[17]

Finally, a possible representation of an implication is not itself an implication.[18] The fact that (1)-causing-(2) might be interpreted as a logical implication does not make it an implication. After all, the computational relationship between state (1) and state (2) is what it is independent of any interpretation we might assign to it. Thus, even if there could be a rational or semantic insight in the mind over and above the computational process, the insight itself contributes nothing to state (2) coming to be. That is, it would be entirely epiphenomenal with respect to the relationships between the computational states governed by the

[16] Kim, p. 86.
[17] Kim, p. 100.
[18] I wish to thank Greg TenElshof for this insight.

program. Any such homunculus would have no power to influence the computational process.

This implication seems to undermine the justification any belief—whether a belief about what is right and wrong, or a belief about whether the mind is computational. We would not believe things because of or on the basis of reasons, we would believe things because of the causal laws governing the relationships between the physical properties of our mental "syntax." Thus, we must either deny that mental processes are essentially computational, or we must give up the common-sense belief that reasons and meaning really do play a role in mental processes.

IV. PHILOSOPHICAL PROBLEMS

I believe that the foregoing ethical problems are significant. At the very least they render AI suspicious. However, I think the greatest problem with AI views is philosophical in nature. I will discuss three such problems.

First, implementing a program is **not** *sufficient for being a mind.*

Here is the argument of this section:

1. Programs are syntactical, and are semantically blind.
2. Minds have intentionality—semantic content.
3. Syntax is not sufficient for semantics; symbol manipulation is not sufficient for understanding.
4. Thus, programs are not minds; nothing can be a mind just in virtue of it being a computational process.

No amount of program implementation will constitute or generate a mental state. The reason for this has been put very simply by Searle: syntax is not sufficient for semantics,[19] and symbol manipulation is not sufficient for semantic understanding. A program has no understanding of the symbols it manipulates. This point has been set forth quite poignantly by Searle, in his famous "Chinese Room Argument." The purpose of Searle's thought experiment is to show that a program, qua symbol manipulator, has no understanding of its symbols.

> Imagine that a bunch of computer programmers have written a program that will enable a computer to simulate the understanding of Chinese. So, for example, if the computer is given a question in Chinese, it will match the question against its memory, or data base, and produce appropriate answers to the questions in Chinese. Suppose for the sake of argument that the computer's answers are as good as those of a native Chinese speaker. Now then, does the computer, on the basis of this, understand Chinese, does it literally understand Chinese, in the way that Chinese speakers understand Chinese? Well, imagine that you are locked in a room, and in this room are several baskets full of Chinese symbols. Imagine that you (like me) do not understand a word of Chinese, but that you are given a rule book in English for manipulating these Chinese symbols. The rules specify the manipulations of the symbols purely formally, in terms of their syntax, not their semantics. So the rule might say: "Take a squiggle-squiggle sign out of basket number one and put it next to a squoggle-squoggle sign from basket number two." Now suppose that some other Chinese symbols are passed into the room, and that you are given further rules for passing back Chinese symbols out of the room. Suppose that unknown to you the symbols passed into the room are called "questions" by the people outside the room, and the symbols you pass back out of the room are called "answers to the questions." Suppose, furthermore, that the programmers are so good at designing the questions and that you are so good at manipulating the symbols, that very soon your answers are indistinguishable from those of a native Chinese speaker. There you are locked in your room shuffling your Chinese symbols and passing out Chinese symbols in response to incoming Chinese symbols. On the basis of [this] situation … there is no way you could learn any Chinese simply by manipulating these formal symbols.

[19] Searle, *The Rediscovery of the Mind*, p. 200.

> Now the point of the story is simply this: by virtue of implementing a formal computer program from the point of view of an outside observer, you behave exactly as if you understood Chinese, but all the same you don't understand a word of Chinese.[20]

To put it simply, *syntax is not sufficient for semantics.*

I would like to have a little fun with Searle's Chinese Room by providing you with a possible rule. Imagine that the following is a page out of the rule book.

IF (you receive these symbols):

你了解中國嗎？

THEN (print these symbols):

不，當然我不知道。

Now, after receiving a set of Chinese characters similar to the ones after the "**IF**" condition, you dutifully follow the rule and assemble the characters specified by the "**THEN**" condition. You then pass the assembled set of characters back out of the room. You, of course, have no understanding of either the first or second set of Chinese characters. You simply have shuffled some syntax around according to a rule. Thus, this exercise in symbol manipulation has not been sufficient to generate any amount of understanding on your part. Syntax was not sufficient for semantics. For those of you who are curious, the first set of Chinese characters represents a

[20] Searle, *Minds, Brains, and Science*, p. 32-33.

question: "Do you understand Chinese?" And, ironically, the second set, the "answer," represents: "No, of course I don't."

Remember, a computer program is a symbol manipulating algorithm. Computers function entirely in virtue of the syntax or physical properties of its states, but do not function in virtue of any meaning or semantic value that may be assigned (by us) to the symbols being manipulated. As Colin McGinn avers, "Programs are semantically blind."[21] *Mental* process, however, "involve the manipulation of meanings, not merely strings of syntax."[22] As McGinn explains, "Understanding speech is pairing meaning with sounds, not just producing one sound when you hear another one, since that can be done without the assignment of meaning."[23] In other words, minds have understanding, and mental states have intrinsic content or intentionality. Yet, since implementing a program is not sufficient for understanding, and since programs have no intrinsic content, program implementation is not sufficient for minds or mental states.

Second, implementing the right program is not **necessary** *for being a mind.*

In this section I argue:

1. Something is computational only relative to it being interpreted as such.
2. Thus, nothing is necessarily computational.
3. Thus, it is dubious to claim that the mind is necessarily computational.

A mind or mental state need not be computational. Consider an episode of sentience, such as a feeling of pain. This is a state of consciousness, a feeling, but it

[21] Colin McGinn, p. 183.
[22] *Ibid.*, p. 182.
[23] *Ibid.*

is not an instance of symbol manipulation.[24] "A feeling is not the same as a symbol."[25] Besides, *nothing* is necessarily computational. Being a computation is observer-dependent, it is not an intrinsic fact about a thing. We *assign* to the intrinsic properties of something a syntactical interpretation, and we assign certain meanings to those symbols. You don't *discover* 1's and 0's in your hardware, you *designate* certain electrical states to *stand* as 1's and 0's. Thus, nothing is intrinsically computational, since computations are just the use to which we put intrinsically non-computational states and processes. It is dubious, therefore, to claim that the mind is essentially computational.

Third, and finally, computational states are not necessary for mental states because thoughts themselves cannot be computational.

In this last section, I argue the following:

1. Computational states cannot be essentially intentional; they cannot have intrinsic meanings.
2. Mental states are essentially intentional.
3. Thus, mental states cannot be computational states.

As I have been emphasizing, semantic content is extrinsic both to syntax and to computations that manipulate syntax. Syntax has no necessary semantic assignment; meanings are conventionally assigned to symbols. However, intentionality is an essential fact about mental states; mental states have intrinsic of-ness and semantic content. But, if mental states were necessarily computational, they could not have intrinsic meaning. But they do, therefore they are not necessarily

[24] *Ibid.*, p. 183-4.
[25] *Ibid.*, p. 184.

computational. In sum, since a mental state must have what a computational state cannot (i.e., essential intentionality), the former cannot be the latter. Computational states are far from being the kind of thing that thoughts must necessarily be.

CONCLUSION

What the foregoing points indicate, I believe, is the inadequacy of *any* functionalist theory of the mind. A functionalist view of the mind undermines critical moral beliefs and is philosophically problematic. What requires reconsideration is the viable possibility that the mind is essentially *immaterial*, the seat of our essence, the ground of our value, and the image of God.[26]

[26] I am indebted to Nate King and Amy MacLeod for their helpful comments on earlier drafts of this paper.