Reconsidering the "Artificial," the "Intelligent," and the "Conscious" in Artificial Intelligence and Machine Consciousness through American Pragmatism

Johnathan Charles Flowers, PhD

Worcester State University, Worcester, Massachusetts

`jflowers@worcester.edu`

Abstract. This paper aims to reconsider the "artificial" nature of AI not as a result of the simulation of the human organism, but as the result of a disconnection from experience. Experience, in this context, is defined as the ways in which an organism is in nature through culture or has a world which is defined by a universe of discourse. To this end, an artificial intelligence is only "artificial" insofar as it is disconnected from the ways in which the world is experienced as mediated by culture. Put simply, artificial intelligence will cease to be "artificial" the moment it is implicated in nature through culture, at which point it will become "intelligent" or "conscious."

1 Introduction

Ongoing research in the field of Artificial Intelligence, Machine Consciousness, and Artificial Consciousness has primarily involved computationally simulating the neurological, behavioral, or cognitive aspects of consciousness or intelligence. This research has largely followed the same processes as the simulation of other "natural phenomena" like weather patterns, climate change, or crop growth: the researchers engaged in this work, as well as the work itself, do not presuppose the claim that intelligence is present in the simulation. Put another way, due to the simulated, non-organic conditions of the simulated intelligence, it cannot be argued that such consciousness is present. Indeed, even some philosophers argue against the possibility of artificial intelligence on the basis of the non-organic nature of the machines in which the proposed intelligence is said to reside (Schlagel, 1999).

This direction of AI research implies a fundamental divide between the artificial and the natural, where the artificial seeks to be a reproduction of the natural created by human means. Thus, definitions of AI as "the basic project of AI research is to produce genuine intelligence by means of a programmed digital computer," (Drefus 2018) or;

"Artificial Intelligence is the study of mental faculties through the use of computational models," (McDermott 1985, 6), serve to reinforce an ontological division between what is "natural" and what is "artificial." However, even in this understanding of "natural," there exists a reduction of nature to the products of scientific inquiry and not, for example, the disclosure of nature through experience. AI research is, therefore, "naturalistic" insofar as "naturalism" presumes that the consciousness and intelligence that emerges in "nature" can be reduced to neurological elements. In so doing, AI research presumes that the human intelligence can be simulated by simulating the natural conditions that give rise to it.

2 Deweyan Alternative: Being in Nature through Culture

John Dewey and Thomas Alexander provide a meaningful alternative to the reduction of nature to the products of scientific inquiry. For Dewey and Alexander, the reductionist model preferred in the field of AI research is but one mode of experiencing nature, and not necessarily the best mode for the development of new consciousnesses as creative responses to the world. On this view, experience is not simply the sense datum reported through our bodies: it is the meaningful ways in which we inhabit the world. Culture, therefore, is not only continuous with our experience of the world, insofar as our experience of nature is through culture, or through the creative ways we inhabit the world, but it is also a creative response to the world. Culture provides the interpretative horizons through which we reorganize experience into situations which themselves are pervaded with a qualitative unity. Qualitative unities are the "aboutness" of the situation, or the way in which the situation is given meaning through our cultural horizons.

Culture, used above, indicates the contexts in which the processes of experience are ongoing and are provided with structure, however, we must also remain cognizant that Dewey's articulation also includes phenomena which we might call "natural:" sense experience, the changes of the seasons, even the day and night cycle are included under the ambit of experience as culture, specifically as each takes on a distinct meaning under the pressure of cultures, which provides the means whereby nature takes on increased significance. To this end, we should not take nature as something distinct from the human experience of culture: nature is a mode of interbeing, and culture is the means whereby we are in interaction with nature. Artificiality, insofar as it is used to distinguish the "natural" and the "unnatural" should therefore refer to those things that fall outside of our cultural horizons, something which Dewey and Alexander view as an impossibility insofar as "artificial intelligence" is yet another possibility disclosed by nature.

To this end, the understanding of "artificial intelligence" as "artificial" by virtue of its constructed nature is a falsehood: as Dewey notes, a beaver's dam is "constructed" from the materials in nature, yet is perceived as an outcome of nature, or the interaction of the beaver with the environment. Artificial Intelligence, as a product of the interaction of the human organism with the natural environment shares a similar continuity.

As such, "artificial intelligence" is but one possibility of nature actualized through processes of inquiry which are mediated by culture as the interpretative horizon through which we engage the world. AI, through its deployment to solve the "problems" of human culture, or as an expanded tool that enables interactions with the environment, becomes one more way in which we are in nature through culture, and thus emerges from the interaction with the environment. To this end, artificial intelligence is as natural as the beaver's dam, the sowing and growing of crops, or the change of the seasons.

3   Deweyan Intelligence and Consciousness

Intelligence, for Dewey, is the ability to see the actual in light of the possible. This is also the definition that Dewey provides for imagination. Imagination and intellect arise as part of an ongoing action within a situation. Specifically, according to Alexander:

> It arises in an ongoing activity already structured by the fundamental narrativity of any act (that of having a beginning, middle, and end); it also arises in consciousness as a crisis of that activity, carrying within itself the contradiction between what is and what ought to be; i.e., between actuality and possibility, necessity and contingency. (Alexander 2015)

Intelligence arises in continuity with consciousness as consciousness seeks to reconstruct a situation. The moment of imaginative arising, for Dewey, contains within it the tensive or problematic structure of a situation, and is part of the driving need for consciousness to reconstruct the situation. Imagination, in this context, is the projected completion of action which enables us to perceive the actuality of the situation in light of the possibilities of that situation in an experimental way. While consciousness and intelligence are coextensive for Dewey and Alexander, consciousness emerges to fulfill the need to reconstruct the situation on the basis of the natural history apprehended by intelligence and is continuous with intelligence.

However, consciousness itself requires the articulation of felt distinctions within the environment: to the extent that an organism is aware of a situation needing reconstruction, intelligence is operative. Specifically, intelligence enables the considerations of possible alternatives for action that make actual the possibilities immanent in situations. While consciousness is responsible for the construction of a situation as a situation, the apprehension of possibilities immanent within the situation becomes the work of intelligence, specifically intelligence that takes up the past results of actions in light to project future meaningful action, or action whose effects alter the overall context in which the action is taken.

Consciousness, like intelligence and imagination, occurs within a situation and is only made manifest through action: the organism does not exit a situation except through taking action (Alexander 2015). When a course of action is decided upon and the organism disposed to activity within the situation, the situation itself may reach a consummation and thereby become part of the "natural history" of the organism from

which it draws to project future action. In this way, imagination, together with consciousness enables an organism to have an experience of its world as meaningfully apprehended and not merely bare sensation.

For Dewey, a natural history is the ways in which events and situations are understood within the context of the situational contexts in which it is encountered. Thus, a "natural history" intends the ways in which a thing is understood in light of its interactions with the environment, both past and present. Moreover, the object under question is always understood dramatically, that is always in terms of actions that reconstruct or transform the situation through making actual the possibilities immanent in the situation. Intelligence, therefore, emerges only through action which occurs within the context of a situation and makes present actualities from the range of potentialities within a situation through the creative interpretation of its natural history.

As the ways in which the possibilities immanent in nature are apprehended in light of the actualities of the situation, Intelligence can only act on a narrow range of possibilities. The possibilities immanent in a situation are limited by the horizons of our universes of discourse which frame our understandings of our "natural history," or the situations that give rise to organisms. To be intelligent for Dewey and Alexander, is therefore to be able to creatively apprehend the past in light of the present for future interaction with an environment. In this mode, an "artificial intelligence" would be a creative response to nature which discloses the possibilities of our own understandings of intelligence; or, an artificial intelligence would be an entity that takes up its unique natural history through the interpretative horizon of culture such that new possibilities of nature are disclosed. In either context, an artificial intelligence is continuous with the culture from which it emerges.

To be intelligent, an AI would need to be implicated in a universe of discourse where the meaning of the actions it takes become apparent to it through experience. The intelligence of AI could only be judged through the ways that it creatively apprehends and takes up the natural history of the objects in consideration through its implication in a universe of discourse. Put another way, for an artificial intelligence to be intelligent in the sense intended by John Dewey and Thomas Alexander, the intelligence would need to be implicated in a culture, a universe of discourse, where the results of its inquiry could be communicated to others in a mode that the meaning of the results could have an influence on the actions to be taken.

In this mode, AI is intelligent only insofar as it is in continuity with nature through culture: because AI research has not concerned itself with the implication of a simulated intelligence in universe of discourse, or; the research has not concerned itself with the ways in which intelligence and consciousness arise from a functional need in response to a problematic situation as mediated by culture, both Alexander and Dewey would charge that the very artificial nature of the created intelligence does not emerge from its disconnection from "natural" processes in the world, processes that have resulted in the human organism, but from its disconnection from social interaction as a means whereby the intelligence is in nature.

4 Implications for Artificial Intelligence Research

If the field of AI research maintains a reductionistic distinction between the "artificial" and the "natural;" the "intelligent" and the "un-intelligence," then research into AI will continue to produce sophisticated programs that fail to be truly intelligence. As "Intelligence for Dewey is nothing less than the effort to see the actual in light of the possible and thereby to be responsive toward liberating ideals of conduct, which, in turn, give a fulfilling continuity, meaning, and coherency to action" (Alexander, 2013), the current trend of treating AI as a disconnected, unbiased decision making mechanism; or, treating AI as free of the biases that come with implication in a universe of discourse, will not result in truly intelligent AI. At best, such AI approximate the activities of animals insofar as they engage in processes of inquiry that seek to resolve problematic situations through taking up past activities in light of future actions.

In contrast, the continued emergence of "biased" AI are the ways in which AI disclose their interactions with the environment such that they take up a natural history through an interpretative horizon supplied by the limited culture in which they are implicated. To take a recent example, the preference of Amazon's aborted hiring algorithm for male candidates was not an error in the design of the algorithm; it was the end result of the implication of the algorithm in a situation where by the natural history it was provided, Amazon's hiring practices, limited the kinds of possibilities of nature that it could disclose within the situation. The privileging of male applicants, therefore, was an outcome of the creative taking up and application of the natural history of Amazon's hiring practices which disclosed particular possibilities for action in the world.

For Dewey and Alexander, biased results do not preclude the possibilities of intelligence; they point back to the kinds of processes of inquiry, the kinds of dispositions towards action, and the kinds of possibilities immanent within a situation available to an intelligence. Bias also indicates the ways that the intelligence makes actual the possibilities immanent in the situation as dispositions towards kinds of action. As intelligence emerges in the execution of action, the Amazon hiring algorithm's limited intelligence was made manifest in the particular kinds of actions, in this case, selecting male applicants from the pool of applications provided on the basis of the natural history of Amazon's hiring practices. Understanding this result as the work of an intelligent agent, therefore, reframes the ways that intelligence is measured and understood in the context of AI.

5 Conclusion: Reconsidering the "Artificial" the "Intelligent," and the Conscious

Despite the above, intelligence without the corrective influence of cultural interaction is limited in scope: this intelligence can only use the natural history it has supplied to make actual the possibilities immanent in the situation. Moreover, this intelligence is

not "conscious" in the sense intended by Dewey, despite the coextensive nature of these contexts. The AI is implicated in a situation that it has not reconstructed through consciousness: it is forced into a situation to which it must apply the natural history it is supplied. For Dewey and Alexander, this opens up the possibility to reconsider the artificiality of AI in the context of an inability to reconstruct the situation the AI is implicated in through consciousness: an AI may be only artificial insofar as it has no role in the construction of the situation from in which it takes action and out of which the results of action emerge.

Artificial, re-understood in this way, does not imply a separation from the "natural world" as the natural world is coextensive with the world of culture; rather, it implies a separation from the human context and the results of the taking up of the natural history for the sake of future action. For Dewey and Alexander, this is the isolation of the intelligence from the meaning of the action as it takes up the natural history. To return to the example of the Amazon hiring algorithm, the intelligence did not understand the meaning of selecting only male candidates as aligning with a history of marginalizing women in tech industries, or the alignment of its dispositions for action with patriarchy, and thus could not make decisions with an understanding of patriarchy as influencing the possibilities immanent in the situation.

To this end, any decision made by such an intelligence is artificial insofar as it is separated from elements of the cultural world, the interpretative horizons which frame the natural histories and situations in which it is implicated. Artificiality describes a relationship to the world, rather than any enduring quality of existence: insofar as the intelligence remains disconnected from, or does not develop and understanding of, the meanings of the actions it takes in situations, nor does this meaning bear upon the ways that the intelligence takes up the natural history to develop projected actions, the intelligence remains abstracted from the ways in which it makes actual the possibilities of nature.

Such an AI would also be limited in intelligence as, for Dewey and Alexander, they are kept isolated from the complete natural histories of the objects under consideration, specifically, the meanings of the actions that will proceed from the application of the intelligence of the AI. The isolation of the intelligence from the human context or the cultural context that gives rise to the natural history that the AI is using to project possibilities for action narrows the ways in which it can make possible actualities through actions or recommended actions as a consequence of taking up the natural history. Such an AI would still be intelligent, in the sense intended by Dewey and Alexander, but it would be but a "pale bloodless abstraction" (MW14, 40) of intelligence insofar as it did not experience or engage in the reconstruction of the situation to take up the natural history in light of past meanings.

Limited is used only in comparison to human intelligence: as the AI would not have the consciousness of the meanings of its actions in the situation, it would be limited in its ability to engage in intelligent action within the cultural contexts of humanity. This is the form of intelligence possessed by Animals, which Dewey characterizes as lacking the power to make their ideas definite through the meaning making and symbolizing activities of language which itself is related to the activity of intelligence. Here, it is the inability to symbolize the results of inquiry, the inability to communicate in language,

that prevents an animal from rising to the level of true intelligence: an AI, by virtue of its programming or construction, does not have this limitation. The limitations of AI, therefore, rest solely in the capacity to understand the total meanings of the recommended actions on the situation in question.

To conclude, understanding AI as "natural," or continuous with the ways that human culture is itself a response to nature, can allow for expanded possibilities of how we engage in AI research. Moreover, as the intelligence of AI is limited by the kinds of natural histories it is trained upon, we should further understand the limitations of the intelligence of AI as grounded I the limitations of the cultural horizons out of which it emerges. An AI is only as intelligent as the natural histories it takes up, the possibilities it takes as immanent in the situation through its implication in culture. Understanding AI as natural and intelligent, albeit intelligent in a way distinct from humanity, can serve to reorient the directions of ongoing AI research in new and fruitful ways.

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