

COUNTERING THE ARTIFICIAL INTELLIGENCE THREAT¹

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ABSTRACT: Artificial Intelligence (AI) is nothing but a rule based mimicry of our life form that will only ensnare those of us who buy into its illogical premises. The reality of the world is not what we see nor is it the physical objects whose behavior is described by the classic physics that has developed since the time of Newton to dominate our thinking.

In this paper I will outline the next step in the evolution of our thinking process and thereby eliminate the threat that AI poses. This step replaces objects with events which give context to both the qualia we experience and the objective world we believe that explains their appearance. The framework of the event oriented world view is now complete. In the next step we will conceive of reality as a form of action, where action is the material of events. In this presentation I will show how the record of events normally drafted as a block universe can be expanded to include both the physical and mental aspects of our existence. The resulting Cognitive Action Theory will be shown to be a superset of quantum theory and quantum theory will be shown to be a mental projection of properties ascribed to the interior of matter. We believe to be seeing such matter from the outside. Unfortunately this interior is always beyond the grasp of our sense and therefore a theoretical construct that is a changeable creation of our minds. The next evolutionary step in our understanding of ourselves is to recognize the “I” as a loop in time.

To confuse a robot, who undoubtedly possesses the same primitive consciousness as all material, with the timeline of our own existence is simply to confuse the tool with the creator and director of the tool. It is the agenda behind the tool not the tool of artificial intelligence

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that may succeed in enslaving us, and unless we fail to recognize the true source of this danger they may actually succeed.

KEYWORDS: Cognitive action theory; Event ontology; Artificial intelligence

1) THE ERROR IN THE COMPUTER SCIENCE ANALOGY

Artificial Intelligence (AI) is based upon the analogy between a computer and our belief that we know how a conscious being actually works. This analogy is shown in figure 1 where a computer on the left side has been programmed to recognize a real world object and print out its name and a human is placed on the right side who is asked to perform the same function. Both write the word “apple” on their respective output device. Because these are the the same, it is assumed both physical systems recognize the same thing.

In case of the human we, 1st person observers looking down on the scene, assume a picture of the apple and clock appears in the humans mind. We further assume what the human sees is essentially what we see only from a slightly different location. The 2nd person’s experience is imagined to appear in a thought bubble connected to his physical brain by a small series of additional bubbles. The fact that contemporary scientists neither know or have any plausible explanation for how the mind body connection actually happens has been called the “hard problem of Consciousness” (Chalmers 1997). Explaining how we conscious beings experience what we see and feel is in my opinion the grand challenge of science in our time.

The challenge is being worked on by a growing community, exemplified by the Foundations of Mind conference and Henry Stapp’s seminal work announcing to the

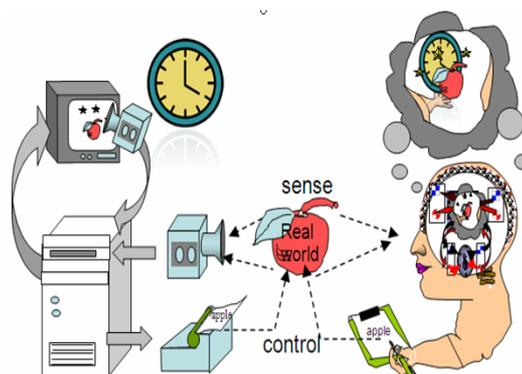


Fig. 1 The Computer Science Analogy

world that classic physics thinking is in principle inadequate to explain consciousness and the first step in doing so will require the adoption of quantum theory (Stapp 1993). I have advanced Stapp’s idea by identifying the inadequate treatment of the observer in conducting and interpreting physical experiments (Baer 2015b, 2017). I have further initiated the development of a new

theory- called Cognitive Action Theory CAT- of physics based upon action flow through objective and subjective phases of a self-explanatory measurement cycle in time (Baer 2015a, 2016).

In contrast the current main stream belief assumes an emergent property of material complexity produces the conscious phenomena. Such individuals believe that by building sufficiently complex computers something akin to the monitor display being observed by the camera shown on the upper left side of figure 1 is seen by the machine. The invention of the Turing Test (2011) proposes that if a machine can be constructed to perform the same functions as a human, i.e. recognize an apple, among other tests, then the machine is consciously aware of something like the human. Conversely such a belief reduces the human and his conscious experiences to a machine. Here lies both the danger and the fatal flaw in AI.

If humans are, according to our societies fundamental beliefs, merely a machine then 1) humans can be replaced by machines and 2) humans, like machines, become an expendable commodity since no additional value is attributed to their conscious awareness beyond their functional utility. Both these tendencies are clearly evident in our society and unless we change our ways the future will evolve into a robotic society where humans and machines both become cogs in a big wheel that can be bought and sold as any other material object.

2) THE FUNDAMENTAL FLAW IN CURRENT THINKING

The fundamental flaw in current thinking rests on the assumption that there is an

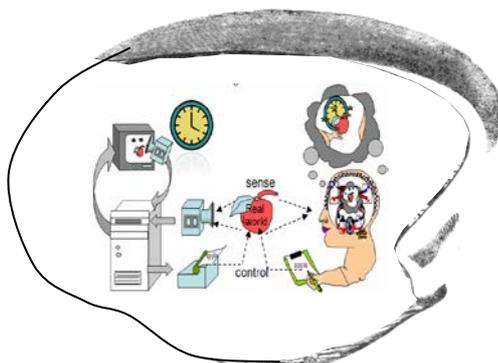


Fig. 2 The ubiquitous 1st Person

objectively real object to be sensed by either the human or the computer in figure 1. This assumption is called “naïve reality” and assumes that because our 1st person experience looks like objects that Reality must be made of objects. Once adopted this assumption allows us to develop classic physics, western medicine, and sociologic policies based upon objectivity while at the same time simply ignoring the unique and

powerful capacity that actually having conscious experiences provides.

Figure 2 shows the entire computer science analogy in the 1st person perspective. The picture shows the nose of the 1st person as seen from the left eye. He is looking at

the human, the computer, and the apple representing an objective real world. From this perspective one can see the actual situation. No one has ever seen a real object directly. Instead the only verifiable reality are the perceptions enclosed in the cartoon thought bubble while what is conventionally conceived as the real objective world has actually always been taken to be a theoretical inference. In eastern philosophy the assumption that we see objects existing independently of our perception of them is called “maya” or illusion. By recognizing the fact that none of us has ever seen anything that has not been gathered through our biological sensory process allows us to question the validity of the computer science analogy and its derivative operational belief that we are purely objective material bodies.

The debate regarding the objective reality of the world we see in front of our nose goes back to the ancient Greeks and like much further into antiquity. Plato, as shown on the left side of figure 3, assumed we were like prisoners in a cave, chained to see only the shadows and reflections of the true reality outside. Aristotle as shown on the right taught that we are directly looking at reality through the windows of our senses.

In modern terminology the prisoners are like the little man inside our skull who is

conceived to have the properties of consciousness. Plato assumed the little man sees the result of sensory processing on the back side of the retina, while Aristotle either ignores or assumes there is a one-to-one relationship between what is outside and what is perceived. Simple anatomy or extensive fMRI investigations have shown that nothing in the brain even closely resembles what that brain sees and there is no scientific explanation for how physical occurrences a few inches behind ones nose produces objects in front of ones nose. This deficiency has been labeled the “explanatory gap” and it has up to now not been filled by scientific theories (Levine 1983).

The absence of a rational explanation for how the brain generates our conscious experiences puts all conjectures based upon classic materialism in doubt. Of course simply because a phenomenon does not have a logical explanation in our scientific tradition does not mean it is wrong. Doubt is doubt not proof of error. Plato’s

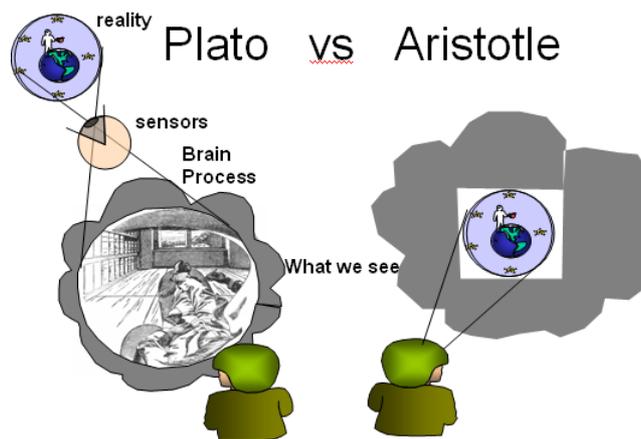


Fig. 3 What do we actually see?

conjecture does not eliminate our connection to some Kantian unknowable. In fact he believed that reality was an ideal world grasped by mathematics. Such a concept of the reality behind our experiences was promoted by a book titled “Our Mathematical Universe” by Tegmark (2014). Undoubtedly mathematics is a useful symbol system that allows us to think about the reality outside Plato’s cave but unless such symbols can be given meaningful interpretations we can only use them to provide an instrumentalist relationship between observable experiences. Such a position is in fact taken by the Positivist philosophers and adopted by the founders of quantum theory (Carnap 2000). It therefore makes quantum theory an instrumentalist theory with *no* ontological basis.

To make further progress in de-fanging the AI threat it will be necessary to adopt a new ontologically based world view in which powers of conscious experience currently suppressed by the material vision are released. Toward this goal the efforts by the author will be summarized in the next section.

3) EVENTS AND COGNITIVE ACTION THEORY

The realization that the material objects we see are created by us does not make us follow the solipsist view that we are all there is. Rather it makes us seek an ontological reality, which differs from a box like space and time, and logically includes the subjective conscious experience. Such a reality is proposed by an shift from object to event oriented thinking as diagrammed in figure 4.

No longer are we to think of ourselves as simply bodies existing in a three or four dimensional space, but rather as activities which explain our sensations into memories that are in turn recalled to regenerate the sensations in a never ending cycle of activity. The physical foundations of consciousness as action flowing around a loop in time is being developed under the name of Cognitive Action Theory CAT. It rests upon the recognition that material consisting at least of charges and masses has a physical outside and mental internal phase. The outside is characterized by interactions accompanied by gravito-inertial forces “Fgi” between masses and electromagnetic forces “Fem” between charges while

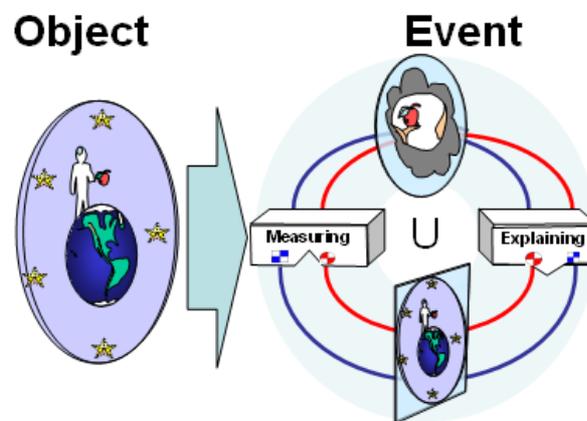


Fig. 4 Object to Event Paradigm shift

the inside interactions are accompanied by mental forces “F_{cm}” and “F_{mc}” between charges and masses (Baer 2014a,2014b).

The internal structure of matter has been the domain of investigation of quantum physics for nearly a century. The standard model of atoms and nuclei contains a large number of elementary particles some purely virtual. This internal-matter-physics is simplified by assuming that changes in mass and charge density configurations in the explanatory and measurement nodes of an activity cycle are transported as action flow around the loop. All knowledge of quantum physics is derived from action hits which are interpreted as caused by the particles – for example photons- of the standard model. Configurations of action flow through the subjective phase of an action loop therefore provide the foundational knowledge base from which all theories and engineering rules of thumb are built. The mass-charge density assumption therefore introduces the subjective element into our physics models producing an integrated model of reality which explains both mind and body as aspects of fundamental events. The reader is encouraged to expand this summary of CAT by going to the references. The formal relationship between CAT and quantum theory is provided by the architectural diagram shown in figure 5.

Here the action flow around the cycle from observable phenomena experienced by a being - who is now represented by the activity rather than an object – to a physical phase at the bottom of the diagram is shown. The internal or mental side of the mass-charge material is identified with the quantum field $\Psi(x,t)$ composed of oscillations between charge and mass. The formula describing the conversion process defines Schroedinger’s $\Psi(x,t)$ function in terms of the classic action patterns flowing at a rate of energy for a period of time Δt . In quantum theory these symbolic descriptions are incremented in time by a unitary operator “U”, containing the Hamiltonian energy operator “H”, that produces a new symbolic description of the mass-charge separation on the left side of the material. The last step in the cycle is to measure the action pattern using the quantum measurement rule to reproduce the observable experience in the thought bubble. Thus quantum theory when looked at as a symbolic system documents the flow of action from personal first person experiences to a physical reality and back again.

Such a flow explains the 1st person’s experience by the action pattern rushing through the conscious being’s Now plane represented by the thought bubble. In the same event the 3d person theoretical view provides an explanation of the physical causes of ones experiences.

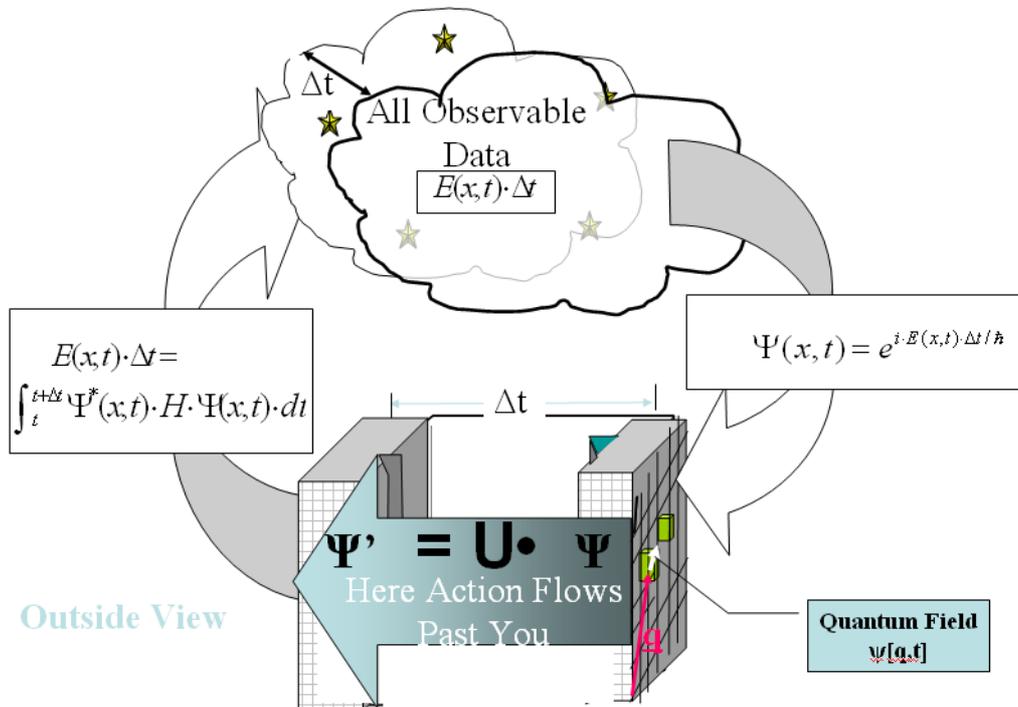


Fig. 5 - Quantum Description of the Action Loop

For further details of the physics and characteristics of interacting action loops the reader is referred to Chapter 4 of *The Unity of Mind, Brain and World* (Baer 2013) and an upcoming book on the Introduction to Cognitive Action Theory to be published by Routledge Press in 2018. It is now time to return to the main topic of this paper and discuss how the recognition that we are loops in time (Hofstadter 2007) that participate in a web of interactions with other such loops guards us from the AI threat.

4) ADVANTAGES OF EVENT ORIENTED WORLD VIEW

Event loops contain their own time and are therefore not subject to the type of annihilation one attributes to objects which are created and destroyed for the purpose of presenting an actionable display utilized by the 1st person to control his flow of experience. If CAT is correct all parts of reality can be approximated by action structures in which subjective experiences occur. Both a computer and a rock would have some primitive level of experience. The experience of a computer however is

associated with the desire of electrons to pass through the gauntlet of gates in order to unite with its oppositely charged partner. What such a desire might feel like is much more difficult to imagine than what its like to be a bat (Nagel 1974). A bat is a fairly close relative of a human so imagining the feeling of a sonar based sensing system might not be impossible. All CAT claims is that *there is something that it is like to be material*.

A computer's feelings are probably much closer to that of a rock than a bat. It is the success of electronic engineers who have captured the desire of such primitive electronic equipment that we must be thankful for the calculations implemented on such machines. Any assumption that a computer has anything like a human experience is misplaced. The human, when recognized as a cycle in time, is a part of an activity that passes through generations all the way back to ones origin. We are a conscious universe (Kafatos 1990) that exists in its own time. A direct comparison with computer networks is therefore only sounds reasonable to individuals who have forgotten their connection to their time line and accepted the existence of their bodies as all there is.

If CAT is correct every cognitive action loop interacts with others and thereby changes its loop state whether on the absorbing or emitting side of such interactions. It explains those changes in state within itself as its experiences. Most of them are relatively unimportant and remain in the bowels of the unconscious. The general feeling of bodily housekeeping functions in a health human being fall into this category. Conscious awareness of ones kidney, for example, is only brought into conscious awareness when a failure occurs and a message of pain is experienced. Thus I has an accommodation of the rest of the Universe "U" and the rest of the Universe has an accommodation of I inside their respective selves. It is the action "A_{UI}" in U due to the interactions with I that is identified as ones objective body which grows and dies. The I cycle as well as any other cognitive parts of the Whole of Reality simply expands and contracts its interaction channels. When I stops interacting with U the action "A_{UI}" simply behaves without I's control. In the Now plane we see the action flow as a body sleeping, in a coma, or dead. Nothing close to this event capability can be ascribed to a computer and therefore any fear that such devices threaten our existence is misplaced.

What is not misplaced is the age old desire for our bodies to grow. Considering AI as a productive tool rather than a direct competition to conscious beings leads to the question of good and evil. The ability to perform some human tasks more efficiently than humans could perform leads to both the rewards, such as having time for higher level functions, as well as finding some existing skills superfluous and going to waste. It will be important to have guidelines governing its use. The first characteristic to verify is whether the AI system is actually productive over its life cycle. The productivity of a human is quite efficient in satisfying the desires in a human lifetime. Whose lifetime is the AI system actually supposed to improve? Products are easily oversold to gullible

users enamored with technologic glitz but such products are eventually filtered out. After verifying the AI actually works to deliver a substantial amount of productivity increase to the user we must address the question of waste.

Free time is fine, but simply shifting productivity from a high level sentient being to a lower one will not engender growth. What higher level tasks are actually available? Here again we address the problem with a paradigm shift. If we think of ourselves as objects the natural consequence is that robots will eat our livelihoods. Objective material hierarchies have fewer and fewer places as one moves up the pyramid. If we think of ourselves as events the reality we find ourselves in is that of a network of interactions without a central authority. Of course it is still possible to organize ones mental processing by interpreting interactions with a hierarchical network. CAT only provides a context for our models. Which one is actually adopted depends on us.

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