Abstract: This paper argues against Daniel Dennett's conception of what is labeled as the Intentional Stance. Daniel Dennett thinks that conceiving of human beings, as Intentional Systems will reveal aspects about human action that a physical examination of the composition of their bodies will always fail to capture. I will argue against this claim by a reexamination of the Martian's thought experiment. I will also analyze Dennett's response to the famous Knowledge argument in order to point out a seeming contradiction in his view which will make my point stronger. Lastly, I will try to conclude with general remarks about my own view.

Due to numerous advancements in the field of neurology, philosophers are now reconsidering their views on mental states. This in turn led to reconsideration of common views on action and intentionality in contemporary philosophy. In this paper I will try to defend a strict version of the Physicalist view of human nature, which states that everything about human action and intentionality can be explained by the study of physical matter, physical laws and physical history of humans. This will be attained by exploring the contrast between Daniel Dennett's Intentional and Physical stances, and by showing how the former "fails" in face of the latter (*contra* Dennett), especially when considering the evolution of the human species. After that, I will try to point out an inconsistency in Dennett's view especially in his dealing with Frank Jackson's Knowledge Argument. I will end with a brief conclusion about the view I am advocating.

A central claim of Dennett's thesis is that if a system holds true beliefs and could be assigned beliefs and desires, then, given the proper amount of practical reasoning, that system's actions should be relatively accurately predicted, and we can say, then, that the system is an intentional system to

whom we can apply the intentional stance. To understand his claim, a full explanation of the intentional stance is due. But before that, one ought to note that Dennett defines a stance or a strategy as a point of view from which one can attempt to understand a system and its behavior, and moreover, there are various stances one can adopt depending on the system at hand. In this essay, I will only be concerned with the intentional stance and what he labels as the physical stance. The physical stance is based on the assumption that understanding the physical components of a system and their relations, along with knowledge of the physical laws, is sufficient to understand, explain, and predict that system's behavior. The amount of information required about the system and the environment is arguably case specific; various physical factors in the environment of the system should be taken into account since they could affect the system. In addition to the fact that while some systems could be basic, most will require information at the microphysical level in order to be fully understood. However, we can easily think of examples where the physical strategy is successfully applied. In human history, one can easily see how the application of the physical strategy helped us in understanding the phenomenon of rainfall. Various strategies were unsuccessfully adopted to understand, predict, and even control the occurrence of rain, which led to the development of rain dances and rain prayers. However, our predictions only became reliable and justified when we understood the physics behind the rain cycle and we posited that water evaporates in relatively high temperatures and condenses in low ones. After the development of radars, satellites and computers that help us incorporate more physical data; we now possess a deeper understanding and more accurate forecasts relatively to a century ago. Admittedly, our weather predictions are not all the time successful, but the benefits of adopting the Physical Stance are undeniable. In general, we always provide, or remain unsatisfied until providing, a physical explanation for everything that happens around us; "Why is the earth revolving around the sun?" "Because of the mass of the sun, the mass of the earth and because of the laws of gravity etc."

We ask billions of questions that could only be adequately answered via an application of the Physical stance.

The intentional stance on the other hand, works best with intentional systems whose behavior should be reliably predicted with it, best example of such systems is human beings, and we will see why. The Intentional system works by allowing us to anticipate behavior from the assumptions that humans are rational agents, to whom we could attribute desires and beliefs. Desires that need to be fulfilled, and beliefs that guide the course of actions that will be chosen to best fulfill these desires. This will seem even more convincing when we consider the following example: If I know that someone has a strong affinity for a certain kind of food, and that food is being served in the cafeteria today, I can predict with high probability that she will go for it when it's lunch time, or, I would be justified in asking her for the reason behind her not going for it. A more empirical and practical instantiation of the intentional stance is the fact that in any murder case we usually look for a motive. What is a motive? It is a belief held by the murderer that the death of the victim will bring about the fulfillment of his desire(s) (it goes without saying that we assume the murderer to be a rational agent)[1]. In other words, had we known the motives (the relevant beliefs and desires) of the killer and had we had a bit of background knowledge on his/her attitudes (violent past, aggressive behavior, etc.) we would have been better predictors of the crime, or, at least, we would not be as surprised when it happens.

When it comes to humans that have true beliefs[2], the intentional stance, Dennett argues, provides the surest path to understanding human behavior. Given the fact that the physiological

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1 If the murderer turns out to not have a motive, we start looking for pathology, be it social or psychological. This affirms Dennett's claim that intentions requires (some) rationality.

2 Dennett argues that beliefs cannot be false. Even our "false beliefs" that do not correspond with the external world are still true. As he writes: "The falsehood has to start somewhere: The seed may be sown in hallucination, illusion, a normal variety of misperception, memory deterioration, or deliberate fraud, for instance; but the false beliefs that are reaped grow in a medium of true beliefs." P. 62.

composition of human beings is too intricate for the current human understanding to provide a full-fledged explanation of human actions, Dennett's view, as it is, does not seem to be at all objectionable. The convenience of the intentional stance is striking. It works and we all constantly use it in our everyday lives, especially since there isn't much of an alternative. Dennett, however, goes further to make the controversial claim that, in effect, the predictions that the intentional stance provides are categorically different from what the physical approach can ever uncover. This is elucidated by the discussion of the thought experiment of the Martian super-physicist. The thought experiment was an elaboration of an objection suggested by Robert Nozick in his *Philosophical Explanations*.[3] This alien is the prefect instantiation of someone that employs the physical stance. Contrasted with what a human being could predict using the intentional stance, the Martian, according to Dennett, in spite of all his knowledge of the physical workings of our bodies, fails to see what his human counterpart sees, and cannot predict human behavior with the same ease. The example Dennett employs is a stockbroker buying shares through the phone. Dennett does not deny the thoroughness of the report the Martian would give, but he asserts that the Martian is missing parts of the objective reality of human behavior, which are namely "the patterns of human behavior that are described by the intentional stance, and only from that stance"[4] (Dennett, 69). This aspect of objective reality refers to the fact that actions follow from belief/desire pair(s). In other words, the Martian would be oblivious to the fact that the fulfillment of the desire of the stockbroker could be achieved in various ways; the goal the stockbroker wants to achieve is important, the path to achieve this goal is not as important. Furthermore, from the Martian's point of view, an Earthling's predictions would seem "marvelous, inexplicable" (Dennett, 70). The Martian will expect the motion of every particle that is involved in the process but would not realize

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3 It is a philosophical tradition to posit an alien entity, precisely a Martian, as a being that possesses full knowledge of current physical laws and entities.

4 Daniel Dennett's views mentioned on this page are based on his book "Intentional Stance" cited in the bibliography page.

that he is missing the teleology of human actions. Let us say that I have an appointment tomorrow at 3 P.M. that I really do not want to miss. By using the intentional stance, one could easily, and probably rightly predict where I will be at the time of the appointment. The Martian, on the other hand, will require many more facts about the world and many more calculations to reach the same prediction. Dennett would also stress that the Martian will miss the objective fact that it is irrelevant whether I go by car or bus to my appointment, which entails a failure in seeing the objective difference between the action of my taking the bus or driving a car and the action of fulfilling the desire I am actually pursuing and that I will accomplish "come what may" i.e. the desire that "drives" me (which is me going to the appointment).

The point of disagreement I have with Dennett's view is rooted in the inaccuracy I see in his conception of the Laplacean[5] super Intellect i.e. The Martian, and that is for the following reasons. Let us assume that the Martian, being a super Intellect, knows not only the present state of every particle, but also its history, as back as the dawn of the evolution of life on earth. He has studied the evolution of life from the first living organism to the fully developed Homo sapiens that we are (Similarly to witnessing Dennett's simple lowly basic thermostat evolving into a super thermostat by adding more devices that help it "understand" the world by mirroring it)[6]. Given the necessity behind the natural selection process that is integral to evolution, and bearing in mind that the evolutionary process is dictated by the demands of the natural world, he will know, or at least understand, concepts like belief

[5] The reference to Laplace is due to the fact that Pierre-Simon de Laplace is considered the father of scientific determinism since he was the first to introduce an entity similar to our Martian and predicted that such entity will be able to see the future.

[6] In page 31 of *The Intentional Systems* Dennett proposes a thought experiment in which he treats a basic thermostat as an intentional system whose beliefs and desires become more complex as we add gadgets that help it "understand" the world. The purpose of this experiment is to show that the more intricate the composition of the thermostat gets, the more it becomes suited to its original niche, a change in the thermostat's environment results in a change in the internal composition of the thermostat as it becomes also more adaptable to its environment since it "mirrors" it. I invoke this example to show that the Martian, by witnessing human evolution, will be to us like the engineer that enhanced the functioning of the thermostat by adding more gadgets to it; both only need to apply the Physical stance.

or desire. Notions like belief and desire, just like any other surviving human trait, evolved out of necessity and after a very specific biological process. However, one can say that having a desire is a result of evolution, but the concept of desire is not. But this is mistaken since we evolved to desire but also to recognize our desire and attempt to fulfill it, these are all parts of human evolution. We evolved to understand our desires, formulate them linguistically, and pursue their fulfillment by our actions. The Martian, for instance, will also understand the evolution of language as the necessary evolution of the human vocal cords that originally developed to coordinate hunts and avoid attacks among human groups. The evolutionary process of human beings and of concepts like desire, belief, mind, and consciousness can be understood in purely physical terms, just as one would understand the feeling of "need for food" i.e. hunger in purely physiological terms (even though hunger is a sensation and we say we feel hungry, the Martian would understand it in function of the fluctuations of leptin and ghrelin hormones. But also, having known all about evolution, he will not be oblivious to how this is a biological mechanism that evolved to guide us to consuming the optimal amount of food for our survival and, in a very simplified manner, dictate our action. Both processes of explanations only require the Physical Stance). Adopting the intentional stance to understand a specific action of someone going to eat by assigning to her the desire of hunger and the belief 'there is food in the kitchen' could be instrumental to us given our limited cognitive capacities of processing information and making all the possible inferences, but it, by no means, uncovers any objective reality missed by the physical strategy.

In *The Evolution of Reasons,* Dennett claims that the "biosphere is utterly saturated with design, with purpose, with reasons." And then he claims that "at some "point" we find it appropriate to describe the reasons why some things are arranged as they now are." In these passages, and others, he draws attention to the fact that reasons evolved with reason recognizers. He indicates that before reason

recognizers existed, there were what he calls “free floating rationales”; similarly to centers of gravity of objects that existed before any physicist recognized them. I find the analogy to be misleading and that breaking it down will help shed light on deeper flaws in Dennett’s view. The difference between centers of gravity and free-floating rationales is that the latter, which biologists came to recognize later, are just a helpful heuristic device and didn’t have any reality before being born in the mind of the perceiver. The force of gravity, however, as a phenomenon exists regardless of our explanation or recognition of it, gravity has been applying change in the universe since it existed, before any physicist recognized it, but the same does not apply for reasons. Reasons only exist in our minds, while causes exist in nature, or more elaborately, reasons are our understanding of causes.

Back to our original example, if the Martian had all of the necessary knowledge he would perfectly predict human behavior without missing anything the intentional stance provides. He would still predict the motion of the fingers of the stockbroker as he dials, probably in the same mathematical way as Dennett describes in the beginning since it is the more precise way, but he would also know of the stockbroker’s “desires” and “beliefs” and what he wants to accomplish through his action (his dialing). The alien will be aware of the fact that whatever the stockbroker is doing, it is because of a desire in him that has evolved in the human species over time, that was favored by natural selection, and that was instantiated in him as such, helping him maintain, directly or more probably indirectly, the survival of the human species, or that was a byproduct of a mechanism that accomplishes that goal. Thus, the prediction of the Earthling would not seem marvelous and inexplicable to the Martian, on the contrary it would be predictable and messy since it is based on a probability because there is always room for error. Put in more formal terms, not only is the physical stance more accurate in predicting human behavior given that there is always a sense of uncertainty in the results provided by the intentional stance, but also there is a purely physical basis to what the intentional stance provides, and

thus everything the intentional stance entails could be understood in purely physical terms.[7]

I realize that believers in the superiority of the intentional stance would resort to the claim that Dennett only employed the Martian as an apparatus to show that a full understanding of human behavior cannot be reduced to an understanding of physical causation, that the Martian, as Dennett describes him, is just an instantiation of theoretical full knowledge of physical causation and how this knowledge is not sufficient to fully understanding everything about human action. It is successful in fulfilling its role, and it is helpful in convincing us that knowing all the physics of the human body and the laws governing it does not entail a full knowledge of the human subject and its actions, or at least would miss the fact that action is the results of desires and beliefs. However, it fails in denying that theoretically, from a purely physical and biological point of view, the exact same goal would be achieved with greater certainty, given that we plug in more information in our super Intellect. Not only will that action be predicted with great exactitude, but also the super Intellect would understand what we call feelings, mental states and processes in physical, biological, and evolutionary terms.

Furthermore, Daniel Dennett seems not to disagree with the argument presented in the above passage since he employs a similar one against Frank Jackson's famous thought experiment, which will be briefly reiterated along with the reasons behind its construction.

Given that atoms are colorless (not transparent), knowing all the physical properties of atoms does not entail knowledge of colors, as we know them. The sensation of color is made possible not only by the properties of light and atoms, but equally, via the structure of every chemical and physical entity and process in the human body that allows for color sensation, from the composition of the eyes to the optic nerve that links the eyes to the brain, all the way to the visual cortex. I would expect the alien to

[7] It should be clear by now that this paper does not address the problems raised by quantum physicists and that allude to the indeterminacy of Physics. I assume, just like Dennett, that physics is fine. However, it could be said briefly that whether action is determined by predictable physical laws or by random quantum coin toss, it is still determined by external factors.

understand the notion of color in language (how the sign -symbols and sounds of the word- “color” evolved to mean the concept color) and the process that produces the sensation of colors in human beings, and thus could still understand the role that color plays in our lives, just like his human counterpart. However, someone like Frank Jackson might argue that the alien missed an objective feature of reality, which is the subjective sensation of color that human beings feel for the simple fact that they are human beings. The reason why I am mentioning Frank Jackson is because he was the first to introduce the subjective component of sensory experience for human beings as a part of objective reality. The argument for this was presented in his article "Epiphenomenal Qualia" (1982) and elaborated in "What Mary Didn't Know" (1986). The argument comes as a conclusion reached after a thought experiment, which is described in this rather lengthy quote:

> “Mary is a brilliant scientist who is, for whatever reason, forced to investigate the world from a black and white room via a black and white television monitor. She specializes in the neurophysiology of vision and acquires, let us suppose, all the physical information there is to obtain about what goes on when we see ripe tomatoes, or the sky, and use terms like ‘red’, ‘blue’, and so on. She discovers, for example, just which wavelength combinations from the sky stimulate the retina, and exactly how this produces via the central nervous system the contraction of the vocal cords and expulsion of air from the lungs that results in the uttering of the sentence ‘The sky is blue’. [...] What will happen when Mary is released from her black and white room or is given a color television monitor? Will she learn anything or not?”
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> (Jackson 1982, p. 130)

It is clear for Frank Jackson that Mary will gain new knowledge since she will know what seeing a red tomato, or red in general, feels like. He labels this knowledge as qualia i.e. the subjective component of

sensory experience. However, Dennett in his reply to the Knowledge argument indicated that Mary would not be gaining any new knowledge. His response to the Knowledge argument came in his book *Consciousness Explained*, where he claimed that Mary – who is basically a human version of our Martian super Intellect- would gain no new knowledge when exposed to colors. Dennett argued for this by designing his own thought experiment. He invites us to imagine Mary's reaction, upon leaving the black and white room, when presented with a blue banana. Dennett believes that in this case Mary will know that this is not a real banana, "How did she do it? 'Simple, 'she replied. 'You have to remember that I know everything- absolutely everything - that could ever be known about the causes and effects of color vision. So of course before you brought the banana in, I had already written down, in exquisite detail exactly what physical impression a yellow object or a blue object ... would make on my nervous system." (Dennett, 399). Dennett means that the impossibility of a complete and thorough physical explanation to everything about reality makes it hard for us to imagine that Mary would realize that the banana is blue without ever seeing color, he invites us to remember that she knows every single fact that is there to know about color, and for him, that is all there is to be known. It seems that one can accuse Dennett of the same failure in the imagination and address to him the exact same response in the case of the Martian's thought experiment. One could to tell Dennett that he forgot that the Martian knows everything -absolutely everything- that could ever be known about the physics that govern human behavior and action. Dennett should see that Mary's thought experiment contrasts a purely physical understanding of color to an experiential one, concluding that the latter reveals something that the former does not, at least for Frank Jackson. Likewise, the Martian's thought experiment is similar insofar as it offers a contrast between a physical approach to explaining human behavior and an intentional one (which is also based somehow on experience, at least on experience in human interaction). Undoubtedly, it could be claimed that the process of seeing color is different from

attributing beliefs and desires to others and predicting their action. However, there should not be a distinction from a physical point of view, the distinction is only assumed by Dennett for his purposes. There shouldn't be a distinction between both of the processes behind sensory perception and intention recognition if we posit that they are both biological processes, which is a postulation that Dennett himself makes on a different occasion. In fact, in the passage mentioned above, in *the evolution of reasons*, Dennett treats reason-recognizing as an evolutionary trait that is distinctive of humans, he claims " Human beings devote a lot of time and energy to their game of reason giving, and however stable and satisfying the view appears from inside the space of reasons, the existence of this elaborate set of human behaviors is just as much in need of a biological account as the distraction displays of the birds or the dam-building enterprises of the beavers." This clearly states the fact that reason-recognition is a trait that has helped us survive, just like color vision in the Mary example. More strikingly, Dennett himself makes the analogy between color vision and purposes and reason. He makes it explicit in the following passage:"

Evolutionary processes brought purposes and reasons into existence the same way they brought color vision (and hence colors) into existence: gradually. If we understand the way our human world of reasons grew out of a simpler world, we will still see that purposes and reasons are as real as colors, as real as life. Thinkers who insist that Darwin has banished teleology should in all consistency add that he also demonstrated the unreality of colors. Atoms are all there is, and atoms aren't colored, and there are no reasons for the things they do, but that doesn't mean that there are no colors and no reasons."

Colors and reasons clearly exist, and thus the coclusion boils down to this: If Mary will not be gaining new knowledge, then, by the same reasoning, one should admit that the Martian will not be missing any facts.

Thus, one firstly should not deny the Martian the knowledge of physical data and laws that is granted

to Mary, and secondly, because of that, anyone who thinks that Mary would not be gaining any new knowledge, is also compelled to agree to the fact that there is no objective fact of the matter that the Martian will be missing. My objection could be summarized in the following question: if Mary is not missing any knowledge by not being exposed to color, why should the Martian miss anything? Furthermore, if Dennett is claiming that no new knowledge would be gained by the experience of color itself, given that one knows all the physical properties of color sensation, all that is left for him to do is to track the process by which the concept of color evolved in the mind and in language. The physical basis of this process, which is manifested in evolutionary biology, will show him the importance, in fact, the potential ultimate supremacy of the physical stance over all others. A physical understanding of the color perception process and its evolution coupled with a physical understanding of the evolution of the notion of color can provide answers to the following questions with unsurpassed certainty: what is color? How do humans perceive color? What is this color to me, to you? And, how will an instance of color perception affect my feelings or actions in specific circumstances?

The intentional stance, in spite of being extremely useful and being used abundantly, is not problem-free. As I have argued, it fails in face of the physical stance, even though the latter could be argued to be an impossibility that will forever remain a theoretical thought experiment given the intricacy of the physiological composition of human beings. In other words, it is indubitable that there could never be any human mind or even arguably any human creation or computer that could incorporate all the data that our Martian is said to have, this means that understanding our fellow humans from a purely physical standpoint is a practically impossible task. For that reason it is very helpful to treat each other as intentional systems, and to deny the intentional stance its instrumental value is a clear mistake. However, the main thesis of this paper tackles the claim that Dennett seems to

hold and that gives the intentional stance a power beyond what could be explained physically. I believe that Dennett is committing a mistake when he claims that even if we have all the *necessary* physical data (including the evolutionary history of the human species) we would still miss something that only the intentional stance reveals. To drive the point home, a little history is due. The geocentric model of the universe has been questioned by Copernicus around five centuries ago, and proved to be entirely false with Newtonian physics around three centuries ago. However, we still today speak of the sun rising and setting as if it was moving, even though we are sure today that it is static relatively to planet Earth. We do so because it is useful and because we do not need to appeal to science all the time especially when we have a shortcut at hand. However, we learn in our elementary education that this is just a manner of speaking, and that this is not the case. We also realize that it is a mistake to try and impose physical laws on statements like the "sun's setting" because simply the physics of the world does not conform to our day-to-day speech. In exactly the same way, it is a mistake to try and provide a scientific explanation of human action with terms like belief and desire. These terms are useful in everyday communication but they simply do not seem to have a scientific basis. Furthermore, science, and precisely Psychology, should not adopt these terms and should not try to understand human beings through them. This is precisely the mistake Dennett is committing, speaking of desires and beliefs is purely instrumental in everyday life. However, in order to have a clear and scientific understanding of human action, the only tool needed is biology, physics, and, in a very rough categorization, what is colloquially labeled as "hard science".

In this paper I have explained and challenged Daniel Dennett's notion of intentional stance and how he sees that an individual's actions are best predicted as the result of her desires and her beliefs, and how these two offer insight about an individual more than one can ever get from understanding the

physics of that individual's body. I have attempted to argue against this by showing that from knowledge of the physical state of the human body, and also, equally important, of the evolutionary process of humans, one can understand and predict human behavior in an exact manner that cannot be matched by the intentional stance. After that, I have tried to draw the reader's attention to an inconsistency in Dennett's view by comparing it with his position on Frank Jackson's knowledge argument.

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