DESCARTES' IDEA OF HUMAN NATURE: A BASIS FOR THE EPISTEMOLOGICAL LIMITATION OF ARTIFICIAL INTELLIGENCE

*Dr. Uwaezuoke Precious Obioha

Abstract

The question of what constitutes human nature is a recurrent one. This question becomes more important and demands urgent attention in the context of the debate and comparison between man and brutes. To the evolutionists, man may not after all be different from other animals since both have the same ancestry. On the other hand, the creationists vehemently disagree with this sameness and equality of man with other animals. To them man is the most perfect being, the apex of creation and therefore possesses a nature different and superior to other animals in most if not in all cases. Such is the camp Descartes belongs to. In recent times, with the unprecedented breakthroughs in Information Technology, there is an attempt of equating man with other animals and machines in terms of intelligence and knowledge. However, how tenable and justifiable is this equality? In the light of this, the paper, based on Descartes' theory of human nature, examines the epistemological status of artificial intelligence. The paper establishes that since animals and machines lack the mind, which Descartes refers to as consciousness, and its essential attributes, by consequence, they have great limitations epistemologically.

Introduction

From creation or if you like evolution, man has remained a being at the apex of all creatures or products of evolution. Whether he is seen as a spiritual being or a mere uncompromised matter, he has remained a mystery to every contemplating mind. Man is such a complex being that he has always been a mystery and an insoluble problem. Thus, the French philosopher, Gabriel Marcel (1955) describes him as a problematic being and Jean Paul Sartre (1956:43) describes him as a being who is not what he is and who is what he is not, a being who puts his own very being into questions. Therefore, from ancient times to the contemporary, efforts have been made and researches carried out to see what constitutes human nature. This paper is an attempt in this direction.

It is important to study human nature, for such knowledge will furnish us with certain truths about ourselves and these truths will consequently effect a causal change in us. It will help us to pick out certain human problems that are of fundamental importance and to offer guidance on how to solve them. This liberating power of self-knowledge

---

* *Department of Philosophy, Faculty of Arts, Olabisi Onabanjo University, P.M.B. 2002 Ago-Iwoye, Ogun State, Nigeria*

was acknowledged by Socrates in his popular dictum, 'man know thyself'. This power of self-knowledge was later corroborated by Plato as well as Spinoza.

In the study of human nature, various epochs and traditions have been identified. In the ancient religious traditions, it is believed that some gods influence human affairs and other forms of life after death (Leslie, 1980:2). Such ideas were handed down from generation to generation by the authorities of tradition. Such efforts in this tradition contain no attempt to prove, or give evidence for, the doctrines so asserted. The concern of the traditional authorities is much more with conviction and conversion than with epistemology. One theme that is common to all the writings in the ancient religious tradition is the hope for some kind of liberation from the suffering, pain, toil, disease and mortality of ordinary human life (ibid: 4).

In the Greek and Medieval periods, reasoned argument about human nature was carried out by such philosophers like Plato, Lucretuis, Aristotle, Aquinas etc. Here, attempts were made to give rational argument for the assertions made. This is what distinguished this period from the ancient religious tradition. However, in the modern period, the search for a scientific theory of human nature was made. This is the tradition or the period in which Rene Descartes featured.

Descartes' Theory of Human Nature: A Restatement

As a mathematician, experimental scientist and philosopher, Descartes was a central figure in the scientific revolution. The application of science to the study of man was made possible by his philosophical dualism of body and soul. According to Descartes, the body could be understood as the subject of a deterministic, mechanical explanation, while the distinctively human attribution of thought, rationality and freedom could be located in the incorporeal soul, which is beyond the reach of science (Leslie, 1980:81). It should be noted that before Descartes, Plato and St. Augustine maintained a dualistic conception of man. Plato conceives man as composed of two substances, a spiritual substance, the soul, and a material substance the body (Akintona, 2002:99). He sees the soul as the essential part of man superior to his body since the soul acts on the body and not vice versa. In the same vein, St. Augustine defines man as 'a rational soul using a mortal and earthly body' (Omoregbe, 2001:1). Like Plato, Augustine also

sees the soul as the essential part of man. The soul is a spiritual substance superior to and above the body, which it acts upon and not vice versa. Influenced by this existence philosophy, Descartes develops his dualistic thesis known as *Interactionism*. To him, the attributes of the mind are different from the attributes of the body. The mind is non-local and non-spatial unlike the body which is an entity extended in space. How did Descartes arrive at his concept of the mind? He did this through his methodic doubt. In the words of Descartes:

> I am. I exist-that is certain but for how long do I exist? For as long as I think; for it might perhaps happen, if I totally ceased thinking that I would at the same time completely cease to be. I am now admitting nothing except what is necessarily true. I am therefore, to speak precisely, only a thinking being, that is to say a mind, an understanding or a reason of being, which are terms whose meaning was previously unknown to me? (Descartes, 1960:26)

Descartes goes further to distinguish between the mind and the body. He writes in the sixth meditation:

> I am a thinking being, I readily conclude that my essence consists solely in being a body, which thinks (or a substance whose whole essence or nature is only thinking). And although perhaps, or rather certainly, I have a body with which I am very closely united, nevertheless, since on the other hand I have a distinct idea of myself in so far as an extended being which does not think, it is certain that this 'I' (that is to say my soul, by virtue of which I am what I am) is entirely (and truly) distinct from the body, and that it can exist without it. (Descartes, 1960:26)

On the distinct nature of the mind and body Descartes writes, 'I further take notice here that there is a great difference between the mind and the body in that the body, from its nature is completely indivisible'. Descartes dualism forced him to make an absolute distinction between those who possessed incorporeal souls and that, which lacked them. This made him draw the line between men and all other animals. This distinction is based on the fact that he ties all mental attributes to the soul. Having done this, Descartes treats all other animals as mere bodily machines lacking rationality. Descartes carries this distinction between

men and other animals further when he argues that human beings alone are capable of a rational use of language or words. According to him, animals could never use words or other constructed signs as *we do* to declare our thought to others. Animals or machines can be made to utter words, but not that they should be so made as to arrange words variously in response to the meaning of what is said in their presence, as even the dullest men can do (Leslie, 1980:84).

Furthermore, comparing man with other animals, Descartes identifies consciousness (mind) which is a unique characteristic of man, as determining factor to man's response to the environment. Knowledge is a product of the activity of the mind. And it belongs to the mind to think, doubt, understand, affirm, deny, will, refuse, imagine etc. The mind, which is the ego, is the seat of knowledge and understanding. Without it, knowledge is difficult (Descartes, 1995:466). A mindless body is lacking in knowledge and understanding. To Descartes, animals are lacking in this unique aspect of man-the mind. Descartes believes that no matter how dull or stupid men are, they can arrange various words and form a sentence to make their thoughts understood. To a very large extent, we can accept this, for in experience, we do sometimes see even lunatics and infidels make intelligible statements. Descartes argues that no other animal, however perfect or well bred could do this. He goes further to show that this inability does not stem from their lacking the "organs" for magpies and parrots can and do utter words like us, yet they cannot talk like us, that is, with any sign of being aware of what they say. Descartes argues that animals are completely lacking in reason. However, for this position, a critic may want to know how a trained dog for instance, detects the presence of an enemy in the house no matter how pretentious and disguised the enemy might be, if animals wholly and completely lack reason. In response to our critic, we may then argue that it is not the case that animals can equal men in reason but that in comparative terms, animals possess a very small degree of reason to men.

Be that as it may, based on the possession of mind by men, an essential part that is lacking even in the most perfect species of animals, Descartes notes a fundamental difference between men and animals. He writes:

> … It is incredible that a monkey or parrot who was one of the most perfect members of his species should not be comparable in this regard to one of the stupidest children or at least to a child with a diseased brain, if their souls were not wholly different in nature from ours. And we must not confuse words with natural movements, the expressions of emotions, which can be imitated by machines as well as by animals…it is another very remarkable thing that although several brutes exhibit more skill than we in some of their actions, they show none at all in many other circumstances. So their excelling us is no proof that they have a mind, for in that case they would have a better one than any of us and would excel us all round. It rather shows that they have none, and that it is nature that acts in them according to the arrangements of their organs… (Leslie, 1980:85)

Descartes, writing on what happens to the soul after the disintegration of the body argues that although the soul inhabits the body, it is not united with it in death. For whereas animals have no hope after this life, men have hope hereafter. He writes:

> Whereas, when we realize how much they really differ from us, we understand much better the arguments proving that our soul is of a nature entirely independent of the body, and is not liable to die with it, and since we can discern no other causes that should destroy it, we are naturally led to decide that it is immortal (Ibid).

The Epistemological Limitation of Artificial Intelligence

Before we discuss the implications of Descartes' theory of human nature for the epistemological status of Artificial Intelligence, we consider it germane to make some clarifications on Descartes submissions vis-à-vis human nature and animal nature. It appears Descartes is using the terms animals, brutes and machines interchangeably as though they are synonymous. This is understandable. It is not the case that Descartes is not aware of the difference that exists between animals and machines. However, within the context of the fact that animals and machines lack consciousness or the mind realm, which is a unique characteristic of man which makes possible the high degree of reason in man, rational use of words to communicate thoughts, self-awareness of man's environment among other things, to this extent

Descartes classifies animals and machines together. Therefore this classification is not a false one, but a classification in context.

Again, it is not the case that Descartes is not aware that man is after all an animal, though a higher animal. However, his attempt to make a clear and distinct separation between human nature and animal nature is premised on the primacy, which he gives consciousness (an attribute of the mind), which is a unique possession of man. It is on this basis that he argues that lower animals are epistemologically limited. This suffices to him since he ties knowledge or higher degrees of knowledge to consciousness and other psychic or mental attributes. This submission is a fallout of the fundamental difference between human nature and artificial intelligence which is further crystallized by Lynne Rudder Baker in his famous article "Why Computers Can't Act". Baker formulates his argument in a deductive syllogistic form. He says, "My argument that machines cannot act is extremely simple. It goes like this:

P1: In order to be an agent, an entity must be able to formulate intensions.

P2: In order to formulate intentions, an entity must have an irreducible first-person perspective.

P3: Machines lack an irreducible first-person perspective.

C: Therefore, machines are not agents (Baker, 1981:157).

Since the argument is valid, the truth value of the premises need be determined. The first premise is simply a matter of definition. To perform action is to be able to formulate intention and agents are beings capable of formulating intentions. However, the second and the third premises need elaboration. The first-person perspective necessary for agency is the one that enters into self consciousness which emerges from group activity understood from the social context in which it manifests itself. According to Baker, "the ability to conceive of oneself in the first-person is the ability to conceive of one's thoughts as one's own… the ability to make irreducible first-person reference is clearly necessary for the ability to have second order consciousness. Therefore, an entity which can think of propositions at all enjoys self consciousness if and only if it can make irreducible first-person reference" (Baker, 1981). But the machines lack the first-person perspective. Baker's evidence for this conclusion is largely linguistic. "Computers cannot make the same kind of reference to themselves that self conscious beings make, and this

difference points to a fundamental difference between humans and computers namely, that humans but not computers have an irreducible first-person perspective" (for a detailed analysis of this argument, see Baker's article, "Why Computers Can't Act"). Be that as it may, Baker adds that "the conclusion does not claim that the human species is unique in enjoying a first-person perspective, certain experiments of chimpanzees suggest that they may be trained to recognize themselves in the first-person way (Gallup, 1977:329-338). However, non-human higher animals are not agents in anything like we are. Applying Malcolm's distinction between thinking and having thought in the sense of entertaining proposition (see Malcolm's "Thoughtless Brutes" in *Proceedings and Addresses of the American Philosophical Association* vol. 46, 1973, pp. 5-20), Baker states that "dogs, as well as chimpanzees do things intentionally in the sense that, dogs can think, but neither dogs nor the trained chimpanzees can entertain propositions at all and hence cannot formulate the thought required for full fledged agency. Thus, they are limited in knowledge.

Our argument is that there is a fundamental difference between man's nature and animal/machine's nature, and that this difference is what accounts for what man or computer machine can know. That whatever the computer machine *knows* or can *know* is a product of man's programming ingenuity. To this, a critic may argue that how are we not sure that man himself is a product of a programmer. In fact, is man, according to Daniel Dannet, not a 'brain in a vat' being operated and manipulated by a powerful but evil scientist? With a rare showcase of imaginary ability, Dannet shows how his imaginary evil scientist can possibly deceive man into believing that he (man) is a real being with real abilities. Be that as it may, we are invited to answer our critic thus: that if indeed man is a product of an invisible but higher programmer, then man is a programmed 'machine' of a different nature with special and higher abilities than the limited computer machine. He is a special 'machine' with inbuilt freewill to choose to do or not to do certain courses of actions. He is a special 'machine' with an incredible ability for decision making. Engineers measure information flow in bits per second, or let us speak of the bandwidth of the channels through which the information flows. Television requires a greater bandwidth than radio, and higher definition television has a still greater bandwidth. High-

definition television *smello-feelo* television would have a still greater bandwidth, and interactive *smello-feelo* television would have an astronomical bandwidth, because it constantly branches into thousands of slightly different trajectories through the (imaginary) world. Throw a skeptic a dubious coin, and in a second or two of hefting, scratching, ringing, tasting and just plain looking at how the coin glints on its surface, the skeptic will consume more bits of information than a Cray supercomputer can organize in a year. Making a real but counterfeit coin is child's play, making a simulated coin out of nothing but organized nerve stimulations is beyond human technology now and probably forever. Come what may, man's propensity to command knowledge is unlimited when compared to the computer machine and that we are not brains in vats, after all.

In this section, efforts will be further made to examine the epistemological status of Artificial Intelligence in the light of what Descartes said about the nature of man on one hand and the nature of animals/machines on the other hand. If epistemology is derived from the Greek words; *episteme* and *logos* meaning an enquiry into knowledge; and if the question of epistemology is the question of what we can know, how we can know and the limitations of human knowledge, it means that the question of epistemology is premised on rationality for without reason knowledge or knowing may be difficult if not impossible. Even the empiricists who consider sense-experience as the ultimate source of knowledge still accept that reason plays a significant role in the organization of the data of sense experience. (Fadahunsi, 2004:20-29)

Rationality presupposes consciousness; consciousness and rationality play important role in Descartes' epistemology. According to Descartes, reason and the possession of mind (consciousness) determine the epistemological status of any being. However, since it is man alone who possesses reason and self- consciousness, it is man alone who can 'know' in the strict sense of knowing or knowledge. Therefore the epistemological limitation of animals/machines in Descartes' theory of human nature is a result of non-possession of reason, self-consciousness and the power of rational use of language by animals.

At this juncture, it is important to ask, what is Artificial Intelligence? According to Michie, it is the development of a systematic theory of intelligence process (1999:7). Minsky defines it as "the science

of making machines do things that would require intelligence, if done by man". Corroborating this claim, Cowan and David equally conceive Artificial Intelligence as an attempt to embody in a machine a repertoire of intelligent behaviour comparable with human behaviour in similar context (1998:113). On his part Dele Balogun, (2005:37) sees artificial intelligence as representing a sort of intelligence which emanates from computerized machines and are capable of performing intelligent actions like that of human beings.

As early as 1960, some researches were pursued on the simulation of networks. Certain features of neural networks in organisms were represented in computational programs. In the 1970s, programs to deal with ordinary human language were developed. These programs are meant to translate texts from one language to another. In the 1980s, efforts were devoted to the development of expert systems which aim at writing a program that duplicates the decisions of human expert in a particular field, for instance, a "knowledge engineer" interviews an expert and tries to formalize the explicit or implicit procedures he or she uses. A series of if- then rules and inferences are formulated, and these are reviewed and revised by other experts. (Barbour, 1989: 91:169). Amongst the breakthroughs recorded by Artificial Intelligence (AI) in this aspect is the development of a program called MYCIN, which was written to diagnose bacterial infections and prescribe appropriate antibiotics.

Although these systems work well in narrow technical domains, the systems are however blind to large contexts, and have difficulty deciding where the boundary of the domain lies. The systems are only useful in rule-governed situations where occasional errors can be tolerated, but not in complex situations where human lives are at stake (Bronzino & Movelli, 1989).

Despite some of these recorded limitations of AI, some AI researchers like Allen Newell and Herbert Simon defend the formalist thesis that there is no difference between human intelligence and machine intelligence. The Formalist thesis states that all intelligence(natural and artificial) consists in the manipulation of abstract symbols; that a world of discrete facts can be represented by a corresponding set of well-defined symbols and that the relationship among symbols are abstract, formal and rule governed; symbols can

therefore be processed by differing system with identical results. Allen and Herbert argue that the brain and the computer are two examples of devices that generate intelligent behaviour by manipulating symbols. According to them, a machine is intelligent if, in performing tasks, it exhibits behaviour that we would call intelligent' if performed by human beings. (Newell and Simon, 1983).

The keyword here is intelligence. However, learning, thinking or reflecting is a product of rationality and consciousness or self-awareness. The act of intelligence is an act of learning, thinking and reflecting. Another way to put it is to say that it takes a being that learns, thinks or reflects to be intelligent. Intelligence therefore, is the ability to learn, understand, reflect and think in a logical way about things. The question now is: how intelligent are the so-called intelligent machines? Can machine exercise rationality? Can machine think in the strict sense of the word "think"? Can machine reflect or ruminate over many options before making a choice or decision? The kind of 'thinking' done by the machine is made possible by the programmer who develops the complex system and reduces the complex problem to rigorous chains but step by step automatic Yes/No logic appropriate to the computer. It is only man who can approach the solution to a problem theoretically through the power of abstraction and imagination. The computer machine is not capable of this type of thinking or reasoning; it simply does not think what it does.

Here, by way of analogy, for instance, if I have an artificial machine made house-help and tells it to clear the table by packing the things on the table inside the freezer in my refrigerator immediately it is 12 noon if I do not come back from work. Assuming I left my one-year-old baby on the table before leaving for work, once it is 12noon, my machine-made house help will unpack the table including the little baby (which is alive) and dump all of them inside the freezer in the refrigerator. But if a human house-help is giving the same command under the same circumstance, the human house-help will unpack the table but not the little baby (who is alive) because the human house-help would 'think' and know that the freezer is not meant for the little baby (at least when the baby is still alive) and as a matter of fact, I do not mean that the baby also should be unpacked with every other thing on the table. Although, a critic may argue that a machine house-help can do the same if given

enough data on how to recognize a human being and thus avoid dumping it into the freezer together with every other thing on the table. However, we argue that a machine house-help can only do that if *instructed*, but a human house-help need not be *instructed* in this respect before he knows what to do. This is because of his ability to think before acting. Here in lies the uniqueness of man.

When you feed data into a computer it will analyze them exactly the way it is programmed, if the data are false or even absurdly false, it will still churn out the analysis and produce false and absurdly false conclusions. In contrast, a human being may be given instruction on what to do or say, but upon discovering the absurdity or illogicality of that instruction based on self-reflection, and logical thinking, he may decide to set aside the instruction and do that which is right, reasonable and logical. This is because he is thinking of what he is doing. The machine in this sense of 'think' simply does not think at all, because thinking in this sense is the product of rationality, consciousness and self-awareness.

In line with the above argument, J. Searle is of the view that 'machine never felt nor suffered, thought nor dreamed, but never failed to give sign. The machine can plough, harvest and imitate, but not feel pleasure or self-pity. No matter how complex a machine may be, it is no more conscious than a clock" (Searle, 1996; 100). The intelligence of the machine (if it has intelligence at all) is very low when compared to that of the human person. Human thinking is much deeper than that of any intelligent machine. Georgi Smolyan has this to say:

> Thinking, reason, intellect, creation, reflection, higher levels of psychics activity, are all the products of human activity-biologically and above all socially determined. The logical problem solving abilities of computers, however, great are the results of scientific and technological development of the specialized engineering activity of man. Man's thinking is only a narrow section, a faint gleam of man's inner world (Smolyan, 1986:150).

On the epistemological status of machines, Dele Balogun (2005:39) argues that intelligent machines cannot learn, think or reflect on their own; they cannot criticize or know anything outside the purpose for which they have been designed or programmed. This explains why the

expert systems (which are written programs that duplicate the decisions of human experts in a particular field) cannot know anything beyond the human knowledge that is already stored in them. In other words, the expert systems have no desire or urge to know more. At best they can only reproduce whatever form of knowledge that is stored in their database and that is why for now their knowledge is very limited.

Conclusion

In conclusion, from the above explication, we have seen the epistemological status of animals/machines under the name 'Artificial Intelligence' from the perspective of Descartes' theory of human nature. For Descartes, there is fundamental difference between human nature and animal nature and this is what accounts for what each nature can know epistemologically. The implication of this is that animals/machines are epistemologically limited. The reason for this is that Descartes attributes to man alone the possession of mind (consciousness) and the ability for ratiocinative activities which is a fundamental prerequisite for knowledge strictly speaking. According to Descartes, intelligence responsible for thinking, reflecting, learning and acquisition of knowledge, is a product of rationality and consciousness. Therefore, since animals/machine are lacking in this, they cannot be said to 'know' in the strict sense of the word knowledge.

References

Akintona, Emmanuel (2002). "The Soul on the Threshold of Demise in Contemporary Philosophy of Mind" in *Journal of Philosophy and Development* Vol. 6, Nos. 1&2, 2000.

Baker, Lynne R. (1981). "Why Computers Can't Act" in *American Philosophical Quarterly* Vol. 18, Number 2, April.

Barbour Ian (1989-91). *Ethics in an Age of Technology. The Gifford Lectures*. Volume Two (San Francisco: Harper Collins Publishers).

Bronzino Joseph and Movelli Ralph (1989). *Expert Systems: Basic Concepts.* Stony Brook, (New York: State University of New York).

Cowan, J.D and David H. Sharp, (1998) *Deadalus,* Journal of the American Academy of Arts and Science, Vol. 117, No. 1.

Dele Balogun, (2005) "Epistemological Limitations on Artificial Intelligence" *Uche Journal* of the Department of Philosophy University of Nigeria, Nsukka Vol. 12.

Descartes Rene (1960) *Meditations on First Philosophy*. First Published in 1941 Translated with an Introduction by L.J. Lafleur. (Indianapolis: The Robs-Mevill Company Inc.).

Descartes Rene (1995) *Classics of Western Philosophy.* Steven, M. Cahn (ed.) Indiana Polis/Cambridge: Hackett Publishing Company Inc.

Dreyfus Hubert (1979) *What Computers Can't Do: The Limits of Artificial Intelligence* 2nd ed. (New York: Harper and Row).

Fadahunsi, Ayo (2004) "The Idealist Implications of Empiricism" in R.A. Akanmidu (ed.) *Footprints in Philosophy*. (Ibadan: Hope Publications).

Gallup, Gordon, Jr. (1977) "Self Recognition in Primates: A Comparative Approach to the Bidirectional Properties of Consciousness" in *American Psychologist*, Vol. 32.

Marcel Gabriel, (1995) "L' home Problematique" (ed.) Quoted in Omoregbe J. *Knowing Philosophy: A General Introduction* (Lagos: Joja Educational Research and Publishers Ltd. 1990).

Michie, A. (1999) "Machine Intelligence". *Info Tech State of Art Report*, Series 9, No 3.

Miller Randolph et al (1982) *Internist 1*, An Experimental Computer-based Diagnostic Consultant for General Internal Medicine. (New England Journal of Medicine).

Omoregbe Joseph, (2001) *Philosophy of Mind: An Introduction to Philosophical Psychology (*Lagos: Joja Educational Research and Publishers Ltd.).

Sartre J.P., (1956) *Being and Nothingness*. (New York: Philosophical Library).

Smolyan George, (1986) "Computer Faculties: Socio Philosophical Aspects" *Social Sciences, USSR Academy of science,* Vol. XVLL No. 4.

Leslie, Stevenson (1980). *The Study of Human Nature*. (New York: Oxford University Press).