Redesigning Man?

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Abstract In speaking of ideas at the intersection of transhumanism, advanced robotics, and related fields, I wish to provide a few theoretical elements necessary for addressing questions like "Should we redesign humans?" While some find such a question somewhat out of place, others seriously think of alternatives to their present ways of life, even if they do not intend to take action. To fathom the extent of inquiry into alternatives, one must simply look to the strength of the human imagination – the various dreams it allows as well as our flirting with futuristic scenarios in popular books and films. It seems that some specialists of the human brain and body wish to bring scenarios of various human forms of being to life. It can be difficult though to accept novelties when it comes to modifying standard human heritage, no matter how similar it may be to our present state. My goal herein is not to provide a panorama of technical endeavours but to up-date the key concepts (originating in Computer Science and related fields) necessary in treating question of the said kind.

According to S. L. Esquith (2005), we must keep ethics in mind when considering the cultural significance of particular technologies. In other words, we must check the effect technologies have on our everyday cultures when we take action against some of them or confirm their soundness. To support his view, Esquith cites Sherry Turkle's (1997) "Seeing Through Computers: Education in a Culture of Simulation": "We make our technologies, our objects, but then the objects of our lives shape us in turn. Our new objects have scintillating, pulsating surfaces; they invite playful exploration; they are dynamic, seductive, and elusive. They encourage us to move away from reductive analysis as a model of understanding. It is not clear what we are becoming when we look upon them – or that we yet know how to see through them".

I intend to relate questions on simulations and enhancements, both corporal and cognitive, to our relation with technology and study it from a logical point of view, one which takes the relation to be a separate dynamic entity at the helm of change. Though

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this topic cannot be fully treated here, such a relation may provide sufficient grounds to apprehend what must be considered when deciding whether or not the concept of biodiversity, as it is used by the media today, should be applied to humans.

1 Presuppositions to a Categorisation Problem

The advent of powerful computers is enabling society to formulate 'different' questions that concern an average person's life directly. These entail questions about the world in which we live and our perception of it. The appearance of highly intelligent machinery on the market, and to some extent in our homes, has provided the humanities with a whole new ballpark in which to play. Due to the exponential rise of calculation strength in machinery, the answer to the question in the title of this chapter progresses from a mere yes or no to a full-blown philosophical description of the ambitions of intelligent robotics, evolutionary computation, and medical transformations of humans. Many musings and responses to this question are now available, as humanization of fully non-human entities (computing machinery) has become commonplace as has the personification of these entities.

It would seem that computers, the tool for everything computational, are in some sort of neutral area or "buffer zone" between Man and object. Some would say that computers are not just ordinary objects: one may ascribe emotion to them, lend them desires and beliefs, make them speak or translate, increase their learning capabilities, give them bodily functions, make them play games with us, have them help us learn, use them to help children or the ill to express themselves, and so the list goes on. Yet the average person would say they are, nonetheless, non-persons. But can we really leave computers in the same category as the everyday chair, spoon, or wooden block? Are computers simply another artifact if they can do so much? The fact that the issues are not clear in the minds of most scientists, especially those working in Artificial Life and Intelligence, shows that a definitional problem has arisen out of the research in these highly related fields, and that the title of this chapter represents a mere preliminary question to a more in-depth inquiry into the nature of the relation between humans and machines.

Let us look back at the two original entities (man and object) as they existed before computers came to be some sixty years ago. If one juxtaposes Man and Object and express them in a linear way as we do in English (i.e., man|object), there are more interesting things to say of such a system as time goes on. For instance: Could one say they are being merged? Is there an answer to such a question?

Let me sum up the difficulty over the initial question set forth. The growing relationship between two entities, Man and Technical Object, raises further questions, especially about computers. The following are amongst the many questions asked. If computers are not human, what are they? 1. If one says that computers are non-persons, does this mean they are just ordinary objects? If so, the observer would have to modify his definition of what an ordinary object is, especially in the light of the "living characteristics" computers display in the explosive worlds of multimedia

and robotics. 2. If a computer is not just an ordinary object, what is it? 3. If we cannot clearly answer this second question, what should we do? 4. Splitting the Man-Object continuum into three categories Man-Computer-Object could be a solution, but this would mean that a computer is not an object. Is it entirely plausible to make this statement? Some machines, due to their form and behavior, look more human than others. How many categories would we need?

In this context, one could even say that computers are object *and* human, but this would entail the existence or creation of an overriding ontological category to Man which we as humans may not be willing to accept; it could also be interpreted as introducing foreign elements into our definition of humans. Some might say that computers 'create' modern Man as they give those that were not previously particularly efficient or creative the power to be so. If one were to accept this last line of thought, one may have difficulty explaining why modern computers are not gods or at least superior to Man. All in all, the new phenomena observed in our information society may force our cognitive values to change. It is therefore time to equip ourselves for addressing these issues.

2 Computers, Continuums, and the New

The four questions above arise out of a practical problem that concerns the public at large in the new Communication Era, Knowledge Community or Information Age and brings us to the question of why it is not possible to establish steadfast boundaries for ordinary objects or things, and why it is necessary to renew essential categories from time to time. So if we were to split the Man-Object continuum into three categories Man-Computer-Object it would create a definitional working space for those working on the notion of computer, and keep the human and object definitions "safe" from this enquiry. Or would it? The very fact that we are considering establishing a 'central category' would imply that we consider reducing the maneuvering space within the categories of Man and Object. To create the computer category, one would have to accept a reduction of the human category. But then again, some of those who would isolate intelligent machinery in its own category take such a reduction for granted as their main goal is to preserve the essential qualities and character of the present definition of Man. This would not impede our enquiring into the central category.

If we were to take the example of a very sophisticated computer that is able to see what its user was doing, to sense when he is in difficulty, to understand intuitively the intentions the user has, to hold similar beliefs to man and be able to speak, this would help us to see that it is very difficult to reduce the notion of machines and robots down to mere objects, especially if one is projecting into the future. I believe that man will be able build a human-like machine that will fool many into thinking it is human; I also firmly believe that man will be (or is) able to modify himself to a point that some would say he is no longer human. I am speaking both about advanced humanoid robotics and transhumanism without wishing to discuss

why we should or should not accept new forms of life similar to our present state or those that deviate from it. All I wish to do is to firmly ground the question: "Should we redesign Man?" by, hopefully, providing the key elements required to discussing these increasingly important matters. Besides, rules, maxims or other rigid devices of science have never made final decisions a congenial experience to live with for everyone. In contrast, proper terminological foundations help us to make sense of decisions, whether we accept them or not.

3 Two Techniques for Human Modification

There are basically two approaches that can be used for modifying artificially the human species. The evolutionary process has changed and possible further diversification of it may come about especially if humans play a role in guiding evolution. The two approaches can be separated by their starting points. The robotics-based approach generally uses many components that are mechanical in nature, i.e., traditional hardware, though there is a growing tendency to accept organic elements into these constructions. The reasons for using organic materials in the robotics sphere of intervention are various: they are less costly, increase functionality, render the resulting "machine" more lifelike, are less harmful to the environment, and provide jobs for local workforces. The transhumanist approach begins by rebuilding man using one single, very familiar component, the human body. The idea is to use technological advances to modify the body or brain to create a desired effect. This could entail introducing various entities into the body for a variety of reasons: molecules (e.g., using metabolic control for 'slimming', or anti-ageing medicine to stay young or live long), electronic chips (e.g., in the brain to help one understand better or remember more, or in the eyes to improve sight), and bionics (e.g., for increased power).

Perhaps a minor detail would be the difference between implants and transplants. The former generally take the current state of the individual to a greater capacity – picture the average person having Steve Austin's bionic ability to lift and throw heavy objects! The latter aims at bringing one back to a state that has been lost – for example, an elderly person having a hip replacement. The only similarity between the two is that they both augment the person's present state.

Let us go back to the robotics versus transhumanism distinction. Although different, it is important to point out that there are similarities: for both approaches, it is the desired effect that leads to the design of a new being, which means there is a certain willfulness driving us to create a new world. I do not think this drive is new, it is just the techniques that can be used that may surprise people. Change is a concept familiar to us, we are, after all, part of the world's evolutionary cycle.

But it would seem that this short-term aspect of evolution is mainly behavior-based, thus there will be limited change to the identity of what it means to be human. The concept of being human entails a highly social element and a cultural

element: one cannot change the relationships members of society enjoy or detest by modifying the individual bodies of these members. That said, sustained corporal change over time could certainly have an effect on relations in society.

3.1 Difference and the Concept of Man

The concept of Man could of course change, but to what extent? Perhaps the thing that society is calling out for here is a concept of humans that is more material in nature when compared to the current idea of what it is to be human. The belief that we could/should/must modify our own physical existence may mean that the immaterial – social, psychological, cultural, and spiritual – aspects of our lives have become less important to us. Would such a statement be too simplistic or is it part of our new reality? Those working in advanced Artificial Intelligence, Cognitive Robotics, Neuro-evolution, and transhumanistic technologies generally do not delve into the intricate questions of love, faith or respect for others in society, all of which are of direct concern in the human immaterial sphere. These specialists are currently not supposed to be intimately concerned with such matters. One could nevertheless be very mistaken in saying that these matters are not on scientists' agendas. How can they ever hope to do better than man if they cannot copy certain facets of humans? We can conclude for the time being that the concept of being human today means being more physically human than 100 years ago.

3.2 Relation and the Concept of Man

So the concept of Man has evolved. Does this have an effect on related concepts? The concepts of Nature and Artifact need to be explored here. The fact that we accept tampering with Mother Nature's "products" today is not new but the application of such techniques to our own physical and cognitive capacities has increased exponentially. However, we could only say that our relation to nature has been altered slightly. What is important to ask is why this change suddenly becomes necessary and what our new relation with nature means to us in the future.

As for the concept of artifact, the shift seems to be more radical. The tie between Man and being man-made has been strengthened in the consciousness of members of society, perhaps paradoxically. Take the common notion of the "self-made man." A "self-made man" referred to self-assurance, aspirations, intellectual stamina, and other characteristics that are part of the purely psychological composition of an individual, whereas now we are able to apply this notion to his physical composition as well. If one prefers lesser-alarming examples, one could examine the simple layman's understanding of the use of steroids in sports: first they were used practically, then their use was considered to be cheating, and now they are deadly substances.

This shift has happened over a relatively short period of time whilst the effects of their use have remained stable. Will our judgment on what can and what cannot be considered an artifact also be affected this rapidly?

3.3 Identity and the Concept of Man

If human modification becomes common, what will this mean for the identity of man in the ecosystem? The fact that man would have the opportunity to change the very concept of himself in this manner, and that this would have a real effect on man's surroundings proves that homo sapiens can control its "conceptual environment" and that the techniques discussed here would be a mere side effect of his existence, i.e., other techniques could be used to sustain the developments sought. This would mean that individuals really would have obtained an overwhelming level of power *vis-à-vis* their past and *vis-à-vis* their counterparts.

4 Shouldn't We be Against Greater Human Diversity?

In the hypothetical situation just described, the weaker are bound to suffer more. Is this the type of *homo sapiens* we wish to become?

The identity of others would be heavily affected in such a world. The identity of the "improved" self would be equated with a very heady position – practically Godhood. But today, we do have the opportunity to apply this ill-formed logic to our lives ourselves.

So, should biodiversity include the redesign of man? As I said, the key to strengthening the argument against modifying Man requires practical ideas on how and why we should not indulge in such modifications. Many are modifying man by eugenics, implants, etc., though perhaps not to the point of becoming cyborgs. (For an exception which may not yet prove the rule, see the chapter by Daniela Cerqui and Kevin Warwick in this volume).

The way in which they, the artificial or modified beings, would seem different from the average human today is in the values they would, conceivably, be able to share and apply; because of the hypothetical differences we can imagine between the (traditional) human values of original men and non-organic modified persons, one might not wish to see the latter caring for one's children or for the elderly. One may have difficulty trusting the moral judgments of a non-natural neighbor or artificial person.

The practical arguments supporting the view that bio-diversity should not include the redesign of Man would entail, among other things, avoiding simulation in all its forms. This claim about simulation could be presented as generic advice, with negotiations for special cases determined by some other set of criteria. The important aspect here is the urgency of the question as, in light of the suggestions made by Turkle cited above, simulations are changing our vision of ourselves and of our world today.

5 Some Reasons for Considering Greater Human Diversity

Those supporting the view that bio-diversity should include redesigning humans have to develop strategies to further their cause because Man would be an 'artifactual object' if remodeled in the ways discussed above. Those that wish to promote the vision of a widened biodiversity in which *homo sapiens* would be one of the species implicated will either have to directly modify the moral position of humans in the world or show the strategic advantages to becoming robotic individuals, transhuman, or posthuman, and this may help people re-examine their traditional values.

Looking at the transhumanist movement shows that the values put forth, whether one sees them to be acceptable or not, are done so within the framework that includes as conditions the following: Global Security, Technological Progress, Wide Access (see Bostrom (2005, 13)). Any sensible being shares these conditions and would like to have them protected, which means that in starting to change society in the way they see fit, the movement is not so off-tilt as some might say. The problem is the transhumanist movement sees nothing wrong with tampering with nature, using technology to extend lives and promoting libertarianism. Have we not been tampering with nature for a long time, i.e., controlling animal numbers, abortion, and exterminating unwanted entities? Although this does not alone justify greater human diversity, it shows that Man has always had the tendency to "diversify" in one way or another.

Accepting such a change would be a strategic move if it were used to unite people. Allowing only weaker members of society to better themselves would enable them to gain back their dignity. But would creating laws prohibiting naturally endowed persons access to such modifications be unfair? It is clear that if the biodiversity of man is to be accepted by the average citizen, any discourse on the matter will have to be situated at the level of this type of proposition.

When one considers the argumentation necessary to change things, it is tempting to say that the physical aspects of human life are quite malleable in comparison to its non-manifest "components". Bostrom[1] gives us an indication of the tools we would need to change the mindsets of those opposed to these practices. He suggests that the necessary ideals we will need are to be found outside of our *bios*. We must therefore act on our *logos* to better fathom the advent of change, to better "calculate" it. It is only if we focus on human reason that we will be able to accept our own redesign.

To relate this last comment to the machine-based approach, it can be said that the machine may have another type of corporal existence than Man does, but the *logos* is the same: Man's. If and when the intelligent robotics approach obtains an

[1] "The realm of posthuman values does not entail that we should forego our current values. The posthuman values can be our current values, albeit ones that we have not yet clearly comprehended. Transhumanism does not require us to say that we should favor posthuman beings or human beings, but that the right of way of favoring human beings is by enabling us to realize our ideals better and that some of our ideals may well be located outside the space of modes of being that are accessible to us with our current biological constitution". Cf. Bostrom (2005, 8).

independent capacity to reason, in the human sense, the categorization problem will have to be treated more thoroughly.

The reader may find that I have failed to transcend the practical aspects of modifying man correctly to develop sound arguments for expanding human diversity. However, pulling one way or another was not the goal here. This discussion reminds me of Paul Ricœur's stance on the impossible adjustment between our finite body and our infinitely open capacity for reason: although the two levels of discourse are complementary, their refusal to blend is what leads to our mistakes and miscalculations and renders the whole process of decision-making fallible. But I do hope to have provided the elements that are essential for engaging dialogue on these matters.

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