

# Concept Nativism and Transhumanism: Educating Future Minds

*Byron Kaldis*<sup>†</sup>  
bkaldis@central.ntua.gr

## ABSTRACT

This paper programmatically posits, argues for the relevance of, and briefly addresses the question whether innate conceptual repertoires, if admitted as plausible, should matter to transhumanist debates. The latter should turn their attention to analyzing the radically enhanced cognitive capacities with which such future human beings will be endowed. The answers eventually given to this puzzle will inevitably challenge received views on education, especially the kind of education appropriate for such future minds.

## 1. Introduction

In the wake of transhumanist prospects regarding radical human cognitive enhancement a number of issues must be addressed as to what kind of minds such radically altered future persons will be expected to have. Current mainstream philosophy of mind, unperturbed by such futurist scenarios, has delved into the question of whether certain segments of people's intellectual life themselves are or are derived from, innate capacities, functions or (unlearned, hard-wired) concepts as such among other mental representations. This is what is otherwise known as the debate between innatism (or concept nativism as is known in one of its more specific versions to be considered here) and its detractors. This paper treats the question as to whether such concept nativism should matter to transhumanist cognitive enhancement as an important item in discussions concerning the status of such future beings. If so, it will consequently be expected to have important repercussions for the kind of education appropriate in such cases of enhanced human beings.

<sup>†</sup> Department of Humanities Social Sciences and Law, National Technical University of Athens, Greece.

It must be noted, as a necessary caveat, that as far as the discussion of this paper goes, the radically enhanced brains will be such that capacities of conceptual representing will not be so radically distinct from currently unenhanced ones rendering them so unrecognizably altered that no methodological bridge between them and current debates will be built. In section 3 below I show that this problem turns on how “innateness” is to be understood and therefore on whether in the case of enhanced minds the nativism involved is of a radically different kind. Finally, if the transhumanist challenge is to have any reasonable grounds the proposed cognitive enhancement should naturally be effective only if we, currently, avail ourselves of a fairly good or valid theory of the mind, as it is now, which transhumanism aims to alter. Finally, given the confines of this issue, the discussion that follows must be assessed as programmatic rather than analytically exhaustive.

## 2. Qualia and Transhumanism

Transhumanist prospects in the area of cognitive enhancement may be assessed properly if we first address two prior issues. These issues form the basis of an adequate view of the human mind that must be presupposed before cognitive enhancement takes hold of the material it is meant to enhance, i.e. the architecture of the mind in the broad sense of the term<sup>1</sup>. We therefore need to clarify first those issues associated with two principal problems concerning the nature of mentality. Though I do not wish to claim that unless we first offer definitive answers to these issues no transhumanist prospects could begin to be evaluated, I specifically hold that discussing these problems must set the stage for transhumanism, since the issues raised frame our debates about cognitive enhancement.

These two problems are first, the question of so-called ‘nativism’, namely, whether concept-possession (or certain suitably specified concept-repertoire) gives support to innatism or not; while the second problem has to do with the familiar ground question of ‘how the mystery of consciousness’ is to be explained. In this paper, I wish to concentrate on some features of the first problem only on the way to framing the debate about cognitive enhancement.

<sup>1</sup> It is worth clarifying that at this point I do not refer to the debate about cognitive architecture and whether the human mind comprises domain-specific (modules) or domain-general mechanisms.

But before I do so, I shall say a few words about the second issue, too, namely consciousness.<sup>2</sup> The reason for this is that the two issues, despite their officially separate domains, are interconnected at the level of ontological claims: as we shall see below the debate about concept-innatism raises puzzles regarding how thinking-in-concepts considered as par excellence a non-material activity (a mental capacity) characterizing human superstructure in general can be seen to rest on the brain, i.e. have a material infrastructure.

The latter problem – that of consciousness – compared to the former – that of whether certain concepts are innate – is, strictly speaking a problem about the ontology of consciousness and has traditionally been construed as such. It is not primarily a question about the architecture of mentality the way the issue of conceptual innatism is understood. It has nevertheless obvious repercussions for the transhumanist project, both on the level of the philosophy of mind and on that of ethics and educational challenges. The question of “how is the ‘*mystery*’ of conscious experience explained?” or, simply, the “experience question”, has to do with finding the neurobiological “correlate” or even the equivalent (i.e. explaining fully, not just giving neural analogues) of the so-called “hard problem” of consciousness: (see, e.g. those attempts centered around the 35-75 Hz approach, cf. Crick and Koch, 1990). What is demanded in this case, as is well known, is the familiar question of “how it feels or what it is like to”. Critics of computational or neural parallelisms point to the fact that all these attempts show some remarkable functional/causal structural properties consciousness exhibits and must indeed exhibit, but not what gives rise to this special experience of “feeling conscious”.

Should therefore transhumanists bother about such ‘qualia’? Obviously so, but only, I would argue, as long as the assessment of the transhumanist project hinges on certain ethical and aesthetic values that act as preconditions in our judgment of what the improvement in conscious qualia consists in. One crucial obstacle a route (in defense of transhumanism) taken along these lines must eventually surmount is the usual query as to whether a completely new and radically altered future mind can be adequately described at this stage prior to its actualized enhancement. That is, if – as some transhumanists seem to hold – there is no way that totally enhanced future mental cognition can be in any conceivable way comparable to what the case now is regarding normal human

<sup>2</sup> I wish to clarify at the outset, that in this paper I am assuming the scenario of a ‘global’ or radical cognitive enhancement, as opposed to simply local upgrading of certain abilities, sensitivities etc.

beings like ourselves, then there is no way we can now predict all those properties essential to the distinctive kind of mentality the ex hypothesi unforeseeable future will bring about.<sup>3</sup> I shall now return to the first problem, that of nativism, which is, I maintain, central to the architectural description of mentality about which we need to get clear. I wish to claim that the debate over innatism must shape the debate over cognitive enhancement, and consequently throw light on the kind of education appropriate for such future minds.

### 3. Concept Nativism and Transhumanism

The problem about conceptual nativism raises the question as to whether human beings are innately equipped with certain concepts or concept-capabilities. It has to do with the “where does it come from?” question as far as mental items are concerned. This problem forces us to get clear about the origin of our conceptual repertoire. This is an area, as is well known, where neo-empiricists (or anti-nativists) and their opponents in philosophy converge with theorists and practitioners in cognitive science at least in terms of utilizing some of the latter’s scientific findings.

The question concerning us is: does innateness or nativism and the attendant discussion matter for the case of cognitively enhanced beings? Will it still play a role if it all turns out eventually to be reduced to upload-able minds? Will it still be the same type of “mind” for which current philosophically inspired theories of concept acquisition in cognitive science worry about?<sup>4</sup> Rather than answering directly this question I wish to discuss how the debate frames our concerns about transhumanism and how ignoring it may end up making it all redundant.

One point is crucial though. What I wish to emphasize in my question is this: in our case it is not separating conscious experiences that may be subjectively identical (even simultaneously); rather it has to do with the more foundational

<sup>3</sup> Obstacles similar to these were first used in the area of nanoethics or complete germline alteration of future generations through nanosurgery, i.e. in relation to the possibility of radically new and unprecedented kind of moral values that future enhanced beings may hold, something that no comparison to those moral notions currently familiar to us can possibly capture. This means that arguing about whether we should interfere with germlines in terms of, e.g., “human” rights or values such as ‘autonomy’ or ‘dignity’ may turn out to be utterly altered beyond recognition or totally eliminated from the vocabulary of the cognitively enhanced beings. I shall come back to that when I discuss the first problem that is the topic of this paper.

<sup>4</sup> For questions of ontological and phenomenal-experience sameness of two identical mind-functions in two numerically distinct ‘mind-stuff’ and related issues see Bostrom, 2006.

question as to whether we can seriously identify as of same *type(s)* of mental-functioning the ones exhibited by ordinary human minds of which the nativist/anti-nativist debate is about, with those enhanced ones in which the *origins* of conceptual packages and abilities can indeed be observed *ab ovo* as it were, i.e. as definable neural inputs initiated by the blue-print designing the artificial mind.<sup>5</sup>

One area we may start from is one that can be pivotal to deciding about what uploadable minds, and cognitively enhanced minds more generally, cannot really do without: it is the area containing those concepts that are clearly distinct from low-level empirical concepts (though observationally fine-grained ones)<sup>6</sup>. This amounts to starting by a jump ahead compared to the usual discussion which starts from how empirical concepts begin to inhabit the human mind. Discussing concept acquisition of the non-empirical kind, as I propose here, is quite suitable for the case under discussion, i.e. the transhumanist future where envisaged beings can be regulated or fine-tuned as to their initial source of mental resourcing. Questions about higher-concept acquisition as those, e.g., in J. Prinz's discussion of abstract concepts such as 'democracy' may be at first blush helpful in solving ethical issues about 'dignity' and the like: namely, issues usually found in criticisms leveled against radical transhumanists (or defenders of extreme liberal-eugenics). In at least one crucial sense we may claim that notions such as 'dignity' or other abstract concepts of a similar sort (evaluative, let us say, or similar ones involving self-ascription) may be acquired or rather 'progressively 'built-up' by enhanced minds in ways that are not so dissimilar from the way we, normal beings, do now.

If we get clear about these problems regarding nativism and its critics – i.e. about problems as we debate them now, concerning our familiar human mental make-up – we may also get a perspective from which to possibly predict, on the basis of a reasonably sound neuro-philosophical theory, how enhanced humans may begin to develop their cognitive capacities including moral ones. This cognitive developing or conceptual enrichment beyond purely observationally restricted empirical concepts relates directly to the acquisition or development of "new" concepts akin to those of 'dignity' and the like – thus bypassing the problem of whether these future enhanced beings will or will not be candidates for such an ascription that jeopardizes so much of their status in ethical matters.

<sup>5</sup> Nanotechnology may be able to construct minds as transparent to our technical gaze, allowing us to 'see' what we put in this.

<sup>6</sup> Non-conceptual content is important here (and below in the case of amodal representational systems)

Solving, that is, the cognitive problem helps us get a grip on the ethical one, too. This is furthermore crucial for education, and in particular for those educational targets that involve inculcating abstract moral attitudes, the relevant concepts and the corresponding virtues.

#### 4. On innateness

However, this is not in itself adequate. A natural prerequisite would be the requirement to get clear about what we mean by ‘innateness’. ‘Innateness’ is not understood in a uniform manner, and thus it is imperative we choose the appropriate notion. If, that is, we envisage a future of actually constructing the mental by foreseeable rules afforded to us in AI protocols, then we shall expect to be able to regulate what is in fact innate. We are supposed to be technically inserting what is to count as innate<sup>7</sup> and we should thus be clear about what constitutes innateness (cf. Samuels, 2002; 2004, Mameli, 2008). This therefore can help us direct our route: we get clear about what *sort* of innateness we ought to be talking about. But furthermore this is especially important if the relevance of innateness for cognitive science as a constraining condition of compatibility is to be met. And we do indeed want our notion of innateness to be in harmony with cognitive science’s concerns (and with those of neuroscience also), these sciences being the ones which will help us build our cognitively enhanced persons. We therefore better follow suit.

Similarly, if we go along with some of the nativists who espouse so-called Radical Concept Nativism understood as “hard-wired dispositions” and ‘implicit’ conceptual schemes understood in terms of what I would call Leibnizian potentialities embedded in Leibniz’s detailed picture of *petites perceptions*, then this is indispensable for understanding what kind of potentialities we will be building-in when we approach these enhanced future minds. In grounding conceptual disposition in overtly physical/neural mechanisms – namely, a physical basis largely or exclusively responsible for these dispositions to behave in appropriately pre-disposed ways as far as manipulating certain concepts is concerned – it follows that building such a

<sup>7</sup> A promising area of further research here is comparing the traditional phenomenon of ‘thought insertion’ discussed in psychology and the philosophy of mind with the computer-regulated or uploadable machine-minds that enhancement strives for. Getting clear about what unregulated ‘insertion’ involves and how far it really extends in our current (pathological cases of) mental activity may throw light on what to expect when a regulated version thereof is programmed in the future cases envisaged.

neural basis or being able to control it when we build these future enhanced persons amounts to manipulating their future cognitive abilities. On this account, therefore, innateness being construed in an entirely different way issues in respectively different eventualities.

On the other hand, if the current debate shows that we cannot control the future, then we may gain – thanks to the current debate – a solace of having left their enhanced future free.<sup>8</sup> One might also argue on the basis of von Economo's theory of progressive cerebration, following evolution, in the form of the acquisition of new cortical organs with enhanced functional differentiation that a kind of support can be offered for the view that the enhanced will be subject to such an evolutionary change. Therefore, to the extent that this might be the case, we must care now how concepts are acquired.

Sorting out the kind of innateness suitable for cognition, thus shedding light on the cognitively enhanced (as either similar or radically dissimilar to us), is also pertinent when the debate on concepts turns on the disagreement regarding representational systems that can be amodal, whence special conceptual capacities can be represented and encoded, contrasted to classical empiricist purely modal/perceptual representation from which all conceptual abilities can be built up. Should we embrace the special amodal representational system as an extra, on top of perceptual encodings of various sensory modalities, i.e. as an indispensable extra systemic ingredient in the cognitive architecture, then it is natural to expect that an extra conceptual device like this, not completely reducible to perceptual basal-mechanisms (or Humean impressions of yore), can be programmed independently for any future cognitively enhanced being. But such a state of affairs can at the same time show that once the initial programming beyond perceptual intake and attendant representational systems tuned-in modally is in place, there is no guarantee that the 'conceptual future', so to speak, of these mentally enhanced beings can be fully determinable.

The case of amodal theories of nativists postulating a distinct exclusively conceptual representational system underpinning concept-possession is best understood, I would argue, as the inverted argument that Kant used (against Leibniz and his followers) in his theory of mind by trying to secure a robust difference between sensibility and conceptual understanding refusing to admit that the difference is only a matter of degree (and that, wrongly according to

<sup>8</sup> It can also be argued that leaving the enhanced beings' future open is tantamount to respecting their dignity, even though the latter is understood in accordance with our current social and moral preoccupations and our current cognitive apparatus.

Kant, sensibility is nothing but confused or ‘foggy’ conceptual understanding).

Curiously enough, the separation Kant wished to uphold is akin to some extreme anti-nativist or neo-empiricist arguments that eliminate any need for any kind of innate basis as minimal as it could ever be. Concept possession can be liberated from any hold on innate basal concepts if it can be shown – and some do indeed think that the so-called SINBAD<sup>9</sup> dendrites can account for this – that whatever looks like an innate remainder is ultimately explainable as neural mechanism of a specified sort performing brute non-representational causal functions. Conceptual enrichment, on this model, can indeed be built upwards from such a mechanistic basis.

What is interesting is that an anti-nativist theory such as this comes to the same conclusion regarding our worries about the enhanced minds of transhumanism as the innatists did, too. For on both accounts what we must indeed be attentive to is whether there is in fact a possible cognitive mechanism to be constructed such that, either bearing an innate input inserted to it and acting as its vehicle or, alternatively, acting on its own by utilizing the software equivalent of biological cells’ dendrites collecting input, the bottom line is that discussing such future eventualities we cannot avoid starting from the issue of concept-possession. (see also fn 6 above)

Finally, a case in which getting our bearings right with respect to our philosophical theories of (our current type of) mind sheds light on how to understand future minds has to do with theories of self-knowledge. Here we may indeed find that none of those theories on offer is suitable. But if, as on one view, self-knowledge amounts to having one mental state surveying another, thus gaining knowledge of a distinct carrier of mental information, then as it has been argued it is in principle possible, given that the two states or events are ex hypothesi distinct, that one mind can inspect the contents of another. And this is a possibility that obviously a transhumanist – wishing to assert the radical enhancement of future cognitive systems – should envisage as realizable beyond being merely a conceivable one.

## 5. Concluding remarks

Concluding remark on the implications for education: education involves to a large extent the learning of concepts, new inter-conceptual connections as well

<sup>9</sup> See e.g. D. Ryder, 2004 for an extended analysis.



as learning novel inferential processes or acquiring the cognitive ability to manipulate those mechanisms involved in such inferential processes by means of which new knowledge can be acquired. Education, construed in this way, will therefore be of paramount value for cognitively enhanced beings yet quite different compared to what it is today. Whether human enhancement will still leave superior beings endowed with a mental architecture, in the sense explained above, that bears crucial distinctions as to innateness vs. nativism is therefore pertinent to how future forms of education, appropriate for those transhuman beings, should be like.

## REFERENCES

- Bostrom, N. (2006). Quality of Experience: brain-duplication and degrees of consciousness. *Minds and Machines*, 16, 2, pp. 185-200.
- Crick, F., and Koch, C. (1990). Towards a Neurobiological Theory of Consciousness. *Seminars in the Neurosciences*, 2: 263-275.
- Mameli, M. (2008). On innateness: the Clutter Hypothesis and the Cluster Hypothesis. *The Journal of Philosophy*, 12, pp.719-737.
- Prinz, J. (2005). The Return of Concept Empiricism, in H. Cohen and C. Lefebvre (Eds.) *Handbook of Categorization in Cognitive Science* Elsevier, pp. 679ff.
- Ryder, D. (2004). SINBAD Neurosemantics: a theory of mental representation. *Mind and Language*, 19.2, pp 211-240.
- Samuels, R. (2002). Nativism in Cognitive Science. *Mind and Language*, 17 (3), pp.: 233-65.
- Samuels, R. (2004). Innateness in Cognitive Science. *Trends in Cognitive Science*, 8, 3, pp.: 136-41.