



THE SUBJECTIVITY TRAP

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Martin O'Dea, as inspired by an article written by David Chalmers on the singularity [Chalmers 2010]¹ and his interests in Human technological and biological development, offers further insight into computation and the predictive nature of our learning rendering the ability to upload our consciousness a technical challenge.

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I feel there are a number of fundamental problems in how we generally approach the areas of mind uploading and consciousness. I would like to address two major points, how we define computation and for the majority of the article, the nature of consciousness; concluding that mind uploading is a technical challenge and nothing more.

There seems to be a limited definition of computation employed. Perhaps even the term 'computation' is misleading as it seems to suggest only gaining appreciation of the algorithms or recipes of how to generate certain processes, as opposed to including the processes themselves. Anything that occurs in our known universe is occurring courtesy of interactions of particles and forces (or an amalgamation of the two perhaps), and is as such in debt to certain algorithms and processes. What we mean by computation at this juncture is planning via algorithms and then generating processes themselves to manipulate forces and affect matter - and not just the afore mentioned appreciation of the algorithms. This can be seen as we ignite fires, design industrial equipment that intelligently alters materials to finished goods, or in the dancing feet of the latest Asimo [Honda 2012]², as well as the electronics of our standard 'computation device'.

¹ Chalmers, David J. [2010] "The Singularity: A Philosophical Analysis," *Journal of Consciousness Studies*, 17, No. 9-10, 2010, pp. 7-65. Retrieved April 20, 2012
<http://www.imprint.co.uk/singularity.pdf>

² Honda [2012] "Asimo: The World's Most Advanced Humanoid Robot," Retrieved April 18, 2012
<http://asimo.honda.com/>



Credit: Honda's Asimo, Credit: <http://asimo.honda.com/asimo-history/>

What we cannot compute is what we do not yet understand (algorithmically), and what we have not yet gained the processing skills in all necessary forms and substrates to then present. When Chalmers argues; “If some elements of cognitive processing function in a non-computable way, for example so that a neuron’s input/output behavior cannot even be computationally simulated, then an algorithmic functional isomorph will be impossible”, I feel this basic assumption “in a non-computable way”, is flawed and reflective of a greater human-centric bias (i.e. our complexity evokes non-physical entities, and human-centricity), which is also deeply ingrained in the perceived difficulty of consciousness. The general notion that there is something occurring in humans beyond the physical world, despite our appreciating we are made of the stuff that inhabits everything else we ‘see’ seems prejudiced. This is due to a phenomenon that permeates everything we can and do consider, or, what I suggest might be likened to and called a ‘subjectivity trap’ and is something from which we need to emerge.

Chalmers proceeds to wonder, “[C]an an upload be conscious?” The issue here is complicated by the fact that our understanding of consciousness is so poor. No one knows just why or how brain processes give rise to consciousness. Neuroscience is gradually discovering various neural correlates of consciousness however; this research program largely takes the existence of consciousness for granted. There is nothing remotely approaching an orthodox theory of why there is consciousness in the first place. Correspondingly, there is nothing even approaching an orthodox theory of what sorts of systems can be conscious and what systems cannot.

We can say all of this is premised on the assumption that there is ‘consciousness in the first place’. An alternative view I propose here is that there is no such thing as consciousness and that we are no different from any other living creature on earth, and indeed, fundamentally no different from any other matter we know exists within our universe. We already have much of the knowledge needed to arrive at this conclusion; we know we are formed ultimately of proteins folding and of a whole system held together by strings or fibres of various strengths and lengths. Chalmers’ article talks of the difficulty of A.I. reaching human level intelligence and its progression from there to a point beyond our understanding; a common thread with many including Kurzweil’s notion of the singularity [Kurzweil 2005]³. It seems fairly, and typically self-centred to assume that we are some sort of aspiration for any processors we devise, though surely we suspect that with our propensity for poor

³ Kurzweil, Raymond [2005] *The Singularity Is Near: When Humans Transcend Biology* (London, England: Viking Penguin).

communication, acting with minimal information, group mutual annihilation, unproductive systems generation, etcetera; it would be a whole lot better if we could devise, for example, an intelligence system that has the capacity to hypothesize, research and test cures to remaining diseases in a strong scientific manner and can do this within a hyper-time processing context without needing to mimic, so thoroughly, the humanoid processor.

To be fair to the considerations of the dystopian potential of such a singularity; of course all of this does not necessarily eliminate the likelihood of persons pursuing the generation of process generators that can act with the pre-programmed intent of causing harm and perhaps learning/adapting to refine the process of causing harm. Einstein's warning that 'our technology has far outstripped our humanity' is again, very relevant; we can take humanity here (in the context of no more reliance on a 'special role' for humans), to mean our ability to co-operate to our mutual benefit; to be pro-human.

How then, is it that consciousness is a mirage?

Let's look at how I arrive at the ability to say 'I am conscious'. Clearly I could not make such a statement at six months old. The language and the meaning of words are absorbed over time through my neural network, more specifically; my auditory system is attuned to certain enunciation through highly sensitive sensory neurons. I can phonetically mimic the sound of consciousness and then return it via the motor neuron control of muscle movement leading to the diaphragm, vocal cord pressures, mouth shaping, etcetera, until I can hear someone say I am conscious and also say so myself. In fact I can just think it. By thinking it I am showing a further skill of humanity within the broader evolution of communication and that is - to not say something, to prepare it and try to assess what sort of reaction it would receive among my peers as my ancestors would deal(t) with particular gestures and basic primal sounds among his/her tribal grouping. To receive more credit within that grouping an individual ancestor had, as with all others, benefits to be gained by increasing complexity of messages. As with other motor functions this is a rehearsal – something we know now happens with all motion in the supplementary motor cortex. From cave paintings of likenesses to symbolic representations, from screams and shouts to nuanced language usage, we can surmise that language was both a tool and contributor to the increasing complexity of our cooperation, our social interaction and development. Why though, is the interior monologue so obsessed with 'I'?



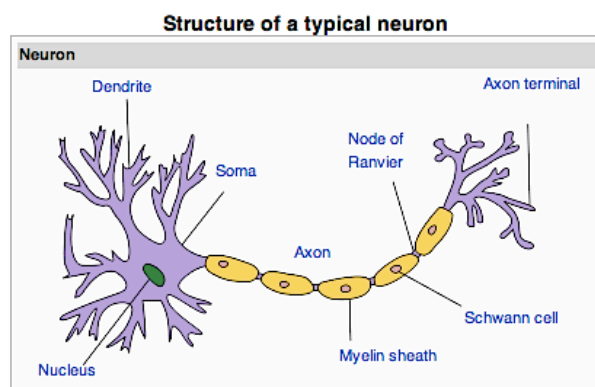
Credit: Cave painting created by the San people in the Cederberg Cave near Stadsaal; Author Valroe, public domain.

http://en.wikipedia.org/wiki/File:San_Rock_Art_-_Cederberg.jpg

The ability to communicate was inherited through species' evolution, but of course, like a bird's ability to fly still sits within the singular entity of an individual human, and as such, has a starting point and centrism of 'I' as the communicator tried, largely to express their own messages to their own benefits throughout the evolution. The awakening of this communicating body came with severe objective constraints including, for example: humans are special and have Gods that look down on them, earth is the centre of the universe and the human ability to communicate and to rehearse that communication is completely unlike any other functions observable among earth's creatures (even allowing that some of them also have some communication skills) which does not make the ability to communicate perhaps, a little less important, but endows some other creatures with these near magical, human attributes! Within the subjectivity trap, it is better to explain it by assuming that humans have a universe of unfathomable proportions designed for the purpose of their existence, or that a deity of no substantiation generated these mystical creatures - us, humans, or at the least, human functionality is so different from all others that it comes from a totally different source.

I believe this context neuronal circuitry is still awesomely complex and operating with a wonderful range of potential (at least from my human perspective), but the task is not as difficult as we assume. I propose, to learn what a neuron (any neuron) does, you must simply follow it.

Neurons can largely be sensory, motor and inhibitory, and while it is difficult to concisely describe the almost endless potential combinations and pursuant actions, it is not quite as difficult as first glances might suggest. There is a huge amount of commonality across neurons, while they form massive complex systems and networks and have the ability to play different roles in many tasks (and also importantly the ability to change their roles and the tasks by Hebbian learning [Hebb 1949]⁴ evidenced in synaptic plasticity) we should celebrate the commonality of purpose to interpret stimulus and to react via control of the varying parts of the human anatomy. There are also large amounts of commonality across the human anatomy with mostly all body parts stemming from quite similar fibrous components and following elements of the unique master code of the DNA of the individual.



Credit: Quasar (talk) 19:59, 11 August 2009 (UTC), public domain
http://en.wikipedia.org/wiki/File:Neuron_Hand-tuned.svg

⁴ Hebb, Donald O. [1949] *The Organization of Behavior; A Neuropsychological Theory* (Wiley-Interscience, New York).

The circuitry at a given time may be likened to a city of ants, where each neuron may be likened to an individual ant following certain tasks or functionality without any specific ‘thought’ attributed to the individual ant or neuron; it merely acts. On a grander scale, we merely act. If nerves on our skin relay information that what we are touching is 100 degrees Celsius, then we appreciate that from our original DNA generated circuitry a vast array of neurons will kick in their excitatory functions to generate movement in the arm and hand away from the burning surface. This is certainly at the simpler end of our actions. We can propose that the numbers and types of neurons employed take precedence here and again, this will come from initial design (DNA & initial development) and then Hebbian learning – the individual in case may have been exposed to repeated experiments where after a brief burning pain, a stronger benefit is available. At it’s most basic, the reward is a reflection of an increase in serotonin while also themselves, a potential to evolve via individual circumstances, experiences, etcetera.

We can conjecture what informs the early neural architecture is prioritisation plus Bayesian probabilities [Jaynes 2003]⁵. There is a hierarchy of neuronal activity as well as the predictive Bayesian model. We now know also that a part of the brain’s function – perhaps its entire programme operates by means of this prediction; the initial sensations are drawn from a memory bank of similar synaptic connectivity as when we hear the first notes of a tune. As we run through the initial notes we open up a lot of possible songs from our memory bank, as the second and third notes emerge we converge until we happily immerse ourselves in the melodic familiarity and can almost sense the predictive model when we can pre-empt the words of an old song that we would have little or no chance of writing down without the musical prompts and the rerunning or the neuronal pathways that emerge.

Clearly, from playing a musical instrument to playing a sport to developing multiple relationships and reflecting on societal constructs we do lots of things, but also beneficial is that the vast majority of what we do is common – this reflects the fact that our DNA varies a mere .1% and many functions we view as autonomic are largely common, but also employ vast tracks of neuronal activity. When we decide what we need to continue our personhood, the initial person plus their memories, or perhaps the DNA plus the neural circuitry and how it behaves dynamically across a whole range of tasks and memories, we may well find that the totality of the brain’s functions is not necessary and that large tracts can be worked from simple models or perhaps that the differentials from some ‘standard’ brain may not be very great even if we do see it as necessary to attain complete informational repetition.

The notion that I merely react and the thoughts that I have stem from the evolved ability to communicate coupled with the internal representation of the external world that is being closely studied and understood all the time as well as the predictive and evolved loops from previous thoughts (or unspoken words) should not create societal revolutions where concepts such as free will etcetera, are thrown out. All that needs to be acknowledged is that we are human and not special, of course, it would still be pertinent to view all that we have collectively and historically constructed within the ‘reality’ of being human is essential. The background context is what fundamentally changes in a non pre-eminence of the ‘consciousness’ world. As with relativity or many other new interpretations, we will continue viewing time and space as predictable and singular entities because as humans, that is what we can relate to – but we should not deny the logic of that we don’t experience directly, and

⁵ Jaynes, E.T. [2003] *Probability Theory: The Logic of Science*. England: Cambridge. Retrieved May 3, 2012, <http://dx.doi.org/10.2277/0521592712>

so we accept relativity, but drive our cars without reflecting on it. Similarly, it would be imperative that while we appreciate the true lack of a special place for us, and the predictive Bayesian model of our Hebbian learning brains we do not discard the legality we all now understand and largely obey. Healthily though, the wrong and right of things are discarded in favour of the consensus of cooperation. People with abnormal brain functions are truly understood as different, outside the norm, but the judgement of right or wrong or such inane concepts as evil diminish. The other undeniable result of seeing ourselves in as non-egocentric a way as possible, is almost counter-intuitively, the almost limitless potential we see we have. For as interactive units of matter we develop in our human way the ability to manipulate our environments with a consistently growing, shared knowledge of the time with only time and application limiting the possibilities.

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