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*The Immaculate Misconception*¹

The mysteries of the mind have been around for so long and we have made so little progress on them that the likelihood is high that something we all agree to be obvious is just not so.

— Daniel Dennett, *Consciousness Explained*

Dennett's insightful warning should have led to the search for the elusive 'obvious', but this did not happen. Fourteen years down the track the brain-mind-consciousness domain remains the puzzle it has always been. This is because, as Patricia Churchland observes: 'An empirical theory of conscious phenomena will not simply waft up out of the neural data. Rather it will be the product of brains that create hypotheses and that creation will draw upon psychology, neuroscience, genetics, computational theory and ethology.' Here then is a hypothesis that identifies the 'obvious' and offers an explanation of the three related problems of consciousness. The 'hard problem' of how conscious experience is generated out of material processes, the experience of a 'self' and the experience of 'agency' or 'free-will' in our deterministic world.

Starting with the 'hard problem' I propose that contrary to the widely held belief, human consciousness is not an entity but a composite effect. It is awareness, the sensory totalisation that all brains generate plus a neural technique that makes awareness aware of itself. The neural technique furnishes the brain with an executive motor-arm and generates the emergent phenomena of the 'self', the 'mind' and the 'free-will' mechanism.

The neural technique is language, our internal response-facility and this is how it works. Its output, spoken or thought shows up in our

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awareness in the form of two distinct superimpositions. They are the thoughts and images we speak or think and the proprioceptive feedback sensation of the speech-act itself. These self-created features represent a new deal for the brain. While in the animal the attention is always captive to the dominant feature of awareness in that moment, in the human brain it has two additional language-created features of salience to focus on and switch between. The switching is possible because the motor-arm of the language mechanism is under voluntary muscle control and this enables the brain to direct its attention alternately to saliences furnished by the environment, saliences furnished by the thoughts and images we ourselves generate and by those that are furnished by the act of the generation itself. This means that the brain has options to respond either with action or with thought, to delay or deflect rather than act out, to chop and change and to experience itself by way of the proprioception of the process. With language it accesses and handles its contents, adds the evidence of its activity to its awareness and raises the latter to the level of self-reflection. The brain's function is no longer the stimulus to response throughput but the self-induced juggling of its attention between aspects of what has become a self-enriched, three-layered awareness we call the conscious state.

To show how awareness becomes self-reflective or conscious is only half of the 'hard problem'. The other half is covered by the transformation of the sensory raw data into the canvas of qualia, our awareness. As for awareness, it is relevant to note that while the photo-, chemo- and pressure-sensitive spots on the single-cell organism are viewed as biological, their phylogenetic derivative, the back-relayed and collated variant in the brain of the more advanced multi-celled organism is not seen in the same light. This in spite of the fact that awareness, the sensory totalisation, just as the sensory spots of primitive forms, fulfills the same information gathering function. One suspects therefore that the admissibility of it in the simple organism and the discrediting of it in the complex form has to do with the transformation of raw data of electromagnetic waves and pressure waves into the sights and sounds of the qualia idiom and that something non-biological, i.e. 'mental' is taken to be responsible. Yet in fact nothing more than the conversion of the raw data into the manageable analog-form of the qualia is involved, a marvellous evolutionary device that enables us to cope with the information in which we are immersed.

In summary, the 'hard problem' is not hard, it is miss-stated. It runs together the transformations from raw data to awareness and from awareness to consciousness. It also overlooks the processing

technicalities the language-equipped brain employs and when faced with the insurmountable obstacles of its own making quits the search for the open channel.

The phase transition from awareness to consciousness induced by the language mechanism is not recognized. Awareness and consciousness are interchanged and telescoped as if the latter was just more but not different from the former. I propose therefore a clear-cut dichotomy to highlight the difference in practice as well as in their verbal treatment. This would obviate the need for qualifications like Edelman's 'primary' and 'higher order' consciousness and Damasio's 'core' and extended consciousness as both examples affirm a continuum rather than identify the mechanism of the qualitatively new state. If this dichotomy were accepted, Dennett's observation that the 'non-verbal animal', the 'infant' and the 'profoundly aphasic' 'aren't genuinely conscious' could be seen in its proper light. Namely, that they lack self reflection which is language dependant.

If human consciousness comes about through self-directed and self-detected attention, our experience of 'self', of 'mind' and of 'agency or 'free-will' should be accountable for. Starting with the 'self' it can be shown that as we speak or think, the proprioception that accompanies the act gives us the sensation of authorship, the feeling that *we* are doing it. The switching of the attention, to and fro between what we are saying and that *we* are saying it strengthens the clarity of the experience. The 'self' is therefore no social construct or mere illusion but the inevitable by-product of the speech-capable brain's routine functioning. Importantly though, the 'self' is something we experience and not some entity in us that experiences. The former is fact, the latter is misattribution and reification that is embellished and built up by folk psychology into the proverbial intra psychic agent.

Accounting for the much bandied about term 'mind' is likewise straightforward. It is a module distributed in the human brain that orchestrates and manages the many phases and aspects of the language operation. It is comprised of:

- The speech areas,
- The frontal lobes to oversee and focus the output
- The cross-hemispheric link via the corpus callosum to integrate the denotative and connotative aspects of the output,
- The supramodal association areas to generate and supply percepts, concepts and schemata for the process,

- The brainstem arousal system that provides high energy priority for speech-thought production and
- The extensive collateral neural branching that rewires the brain and boosts its new routines with massive additional neural growth.

The neural arborisation just mentioned is uniquely mind induced and shows that the mind-module involves self-generated tissue over and above the modifications to and adaptations of pre-existing structures. Without this multifaceted system, the brain would not know that it knows, let alone generate the mental schemata, the prerequisite of behavioural self-management.

Lastly, to account for the ‘free-will’/‘agency’ problem, I turn to Benjamin Libet’s celebrated experiments. While it is true that the initiation and preparatory phase of an act takes place before we become aware of willing it or wanting it, it is wrong to conclude that the conscious brain does not play a causal role through some other mechanism. Indeed, Libet himself emphasized that once we become aware of wanting to act, a point he designates as ‘W’ we still have 200 milliseconds before we issue the command to the motor system to proceed with its execution. This, Libet points out, gives us a window of opportunity to abort the impending act by inhibiting it or by switching to another preliminary action impulse already waiting in the wings. Libet regards this as an effective veto function, a mechanism of interference with a given actions implementation and notes that: ‘The potentiality for a form of free choice in the classical sense is not excluded by the theory, though apparently in the form of control rather than in the initiation of an act’

For such a free choice to be possible there has to be a range of alternatives to choose from and a mechanism to do the choosing. The source of the choice is obvious. It is the language facility that generates for us the profusion of action schemata. These mentally envisaged possibilities are there in our awareness so that we have a tree of thinkable options at every point along our behavioural path. Take the innumerable alternatives as when for example we leave a building. We can go left or right, go back or cross the street, go home or wander about, have a snack in the sandwich bar and all the possible permutations that can arise. Indeed we live in a rich choice-field one we continuously generate on the mental plane and through which we pick our way. Brain imaging techniques confirm this internal genesis, a language induced world of alternatives where every instance is a fork in the road.

It now remains to show how within the framework of determinism the human brain can exercise choice that does not involve *ex nihilo* initiation but has an authentic, non-illusory role in deciding its course of action. The answer is another instance of Darwinian selection, the evolutionary mechanism of juxtaposing two independent domains to achieve optimal results. For our selection of behavioural path the first domain generates the variety, the range of alternative action schemata, while the second furnishes the defining criteria, the value categories in whose terms the selection takes place. The format works as follows.

The 200 milliseconds window of opportunity between Libet's, W the onset of awareness and the triggering of an act, is enough time to sense, emotively assess the significance of its likely outcome. We get a gut feeling, call it intuition whether to proceed or not. At this point the basal ganglia in charge of inhibition and disinhibition come into play. They respond automatically in line with the sensed congruence between the impending action's expected outcome and the organism's best interest as perceived by its brainstem/limbic value categories. Quoting neuroscientist Gerald Edelman (1992) 'In accordance with the given plan the basal ganglia selectively disinhibit thalamic nuclei projecting into the cortex. This leads to the anticipatory and selective arousal of cortical areas corresponding to the motor program.' As a result all competing action impulses remain inhibited except the one felt to be the most congruent with the organism's value system. Such a selection of a behavioural path through a mentally generated maze of options is not unlike the game of 'twenty questions'. By blocking unacceptable choices, the sequence of ever closer approximations charts the course to what is acceptable. This use of the veto function for the control of behaviour is what Libet may have had in mind when he spoke of a 'form of free choice'.

While this is not free-will in an absolute sense, it is an ingenious way to achieve functional autonomy, the nearest thing to it in a deterministic world. The organisms values and characteristics are now significant co-determinants of outcomes.

In summary, we have seen that the new language-based dispensation turns baseline awareness conscious, hands the control of attention back to the brain, generates the experience of the 'self', generates the module that is the 'mind' and the functional autonomy that is our 'free-will'. The immaculate misconception, the 'obvious' we all seem to overlook is that human consciousness is a production routine and not an entity, further that its components can be identified and their interaction traced. It is also obvious that unless the distinction between awareness and consciousness, its language driven upper case

is recognized in theory and practice, neither neuroscience nor logical analysis will be able to solve the brain-mind-consciousness puzzle. Fortunately there is enough data to work out the correct solution and that in the meantime we may marvel at the brain's self-accessibility that furnishes us with the guidance mechanism to decide our fate.

The breakthrough from awareness to consciousness was presciently foreshadowed by Stephen J Gould way back in 1977, when in his 'Ontogeny and Phylogeny' he noted that: 'The evolution of consciousness can scarcely be matched as a momentous event in the history of life. There may be nothing new under the Sun, but permutations of the old within complex systems can do wonders.'

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