**Science and Transcendence: Squaring the Circle.**

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**1. Introduction**

Science and religion might have an uneasy relationship, but they do have a relationship. I came face to face with it when reviewing *The Oxford Handbook of Psychology and Spirituality*, all 634 pages of it, (Miller 2012) a few years ago. I was struck by the extent of the sociology of religion industry represented there. Voluminous research has uncovered varied results, but overall delivered the message that religion is A Good Thing for people, and that in evolutionary terms it played a role in the survival of the species, (a role that has presumably expired in our age of reason). The book does not ignore the transcendent dimension of religion and spirituality entirely, meaning by “transcendent” the sense of relationship with a reality beyond that currently elucidated by science. Instead, it fudges it by appealing to a fictitious version of quantum mechanics, which conveniently explains everything - except that it does not (see Clarke 2017 for the argument here).

Coming from such an august source as the Oxford Handbook series, I was rather shocked by this, but it does conform to a trend to reduce the spiritual and transcendent to the physical, whether in the ubiquitous claim that health and well-being can be affected by an ‘energy’, whose existence cannot be substantiated, or in Phillip Pullman’s concept of , ‘Dust, mysterious matter that streams between the multiple worlds of Pullman’s imagined universe, adding the spiritual element.’ (Pullman 1995). Of course Pullman is allowed to do that because it is science fiction, but these examples do illustrate the unease of the logical mind when confronted with something it cannot quite get its head around. Another tactic is to simply dismiss the spiritual and transcendent dimension of human experience as illusory, delusional, imaginary. I was even more shocked when I read the following from Paul Gilbert, a psychologist whose approach and insights in the clinical field I really rate very highly, and myself make use of:

‘There is a long history to the use of ‘imaginary others’ to help soothe the self. The most obvious of these is religious imagery…..Prayer can be seen as an effort to engage in a relationship with an imaginary figure or figures and through this form of relating one seeks to derive comfort and strength. There is evidence that some people can indeed derive much comfort and soothing by feeling ‘in contact’ with God and having imagery relationships with him or her (Kirkpatrick 2005).

Gilbert (2009), P 213.

The other tactic for dismissing the transcendent dimension is a reductionist use of neuroscience, as illustrated in the ‘God Spot’ debate, sparked off by Persinger (Ruttan, Persinger & Koren 1990). The claim here is that we can induce a ‘sense of presence’ by brain stimulation, using a suitably photogenic helmet, of course. The title of Persinger’s earlier, theoretical study, “Religious and Mystical Experiences as Artifacts of Temporal Lobe Function” (Persinger 1983), reveals his own reductionist stance, which was seized upon by the *Daily Mail* (2012), among other press attention. Possible interpretations of the findings revealed something unsurprisingly less cut and dried than the headlines suggested, and other, more sympathetic, neurological investigations. Newberg’s study of meditating nuns (Aquili & Newberg 1990), for example, gives a more nuanced picture, without actually nailing down the phenomenon of transcendent experience within the current scientific paradigm. This paradigm really cannot cope with the idea that there might be relational processes going on beyond what it can fully grasp.

It was not always like this. Over millennia, human beings have not had a problem with transcendence. They have experienced themselves as part of a mysterious universe, in communication and relationship with forces and entities beyond the physical. They inhabited a porous world, infused with spirit: whether attached to physical features such as springs, groves, sun and moon. . The presence of the ancestors in the form of spirits was also acknowledged, along with more disembodied entities. The sense of a super-ordinate entity, a boss god or goddess, emerged over time and tended to gain ascendance. At the same time as using their logical intelligence to survive and make themselves at home in the tangible, physical world, our ancestors developed rituals and practices to tame and harness those unseen forces, with a recognition that these procedures would inevitably lack the predictability relied upon in their management of the physical world. Priests and shamans with expertise in dealing with the unseen world were accorded a special status in the community.

What has changed now that we think that we don’t need the priests to tame the physical world? A world view that was obvious for most of human history has now been widely rejected.

**2. Two Unexamined Assumptions**

As Fraser indicated in his introductory paper, it is not science that inhibits exploration here, but unexamined assumptions that lurk behind science, confusing and constraining its enquiry. To summarise something I have explored at length elsewhere (Clarke 2008), the two major culprits are: the rationality assumption, which is the assumption that logic and science will eventually elucidate everything, and the billiard ball mind assumption, the assumption that mind is locked inside the skull. These assumptions are held in place by ignorance of the availability to human beings of two, distinct and non-overlapping, ways of knowing. Our knowledge of the world comes from combining these, while we remain unaware of this process and the limitations that it imposes. Teasdale and Barnard’s Interacting Cognitive Subsystem (ICS) model of cognitive architecture, already introduced by Fraser, offers a way into understanding this crucial phenomenon of the two ways of knowing, (Teasdale & Barnard 1993).

There are, of course, plenty of other dichotomous processing theories around (e.g. *Thinking Fast and Slow*, Kahneman (2012), *The Master and his Emissary*, McGilchrist (2009). I favour ICS because:

* It is based on an impressive corpus of experimental data on cognitive processing, its codings and limitations.
* It is even-handed. It avoids the trap of favouring one side over the other or assigning dominance. McGilchrist’s claim that the left brain has usurped power rightfully belonging to the right brain is an example of this fallacy.
* It is this very lack of over-all control that creates the space needed to let in the transcendent.
* I also like it because, properly understood, it should be deeply unsettling.

The grip of the two assumptions outlined above means that transcendence, within the current scientific paradigm, is literally ‘inconceivable’. The attempt to wheel in a version of quantum mechanics, not recognized by any respectable practitioner in the field, as a device to square this circle has been cited earlier. Quantum mechanics is seized upon because the wave/particle interchangeability is employed to argue that matter is not really material, so anything goes.

I would like to employ that same wave/particle dichotomy as a metaphor to elucidate the new vision of the human psyche that is made possible by the rigorously scientific analysis of cognitive processing behind ICS.

**3. The Contribution of ICS**

With its identification of a discontinuity in processing, between the Implicational and Propositional central processing systems, ICS gives us the possibility that the limitations of the human instrument of perception rather than the illusory nature of the physical world offer the key to the phenomenon of transcendence. You have a choice. You can question whether the material world really is material – on thoroughly dubious grounds , or you can look critically at the human instrument of perception. As Fraser has already indicated, the ICS model of cognitive architecture identifies two, separate, central meaning making systems that organise the inputs from different subsystems. Barnard traces the roots of this dichotomy in the processing demands posed by the evolutionary development of fine-grained tool use (Barnard 2019).

To summarise an argument I have made more fully elsewhere (Clarke 2008), the subjective experience of individual self-consciousness that is universally accepted as the norm, is only part of the story; it is the particle state, according to my metaphor. This state is the product of the smooth transfer of control (buffering) between the Implicational and the Propositional. The wave state occurs when the influence of the Propositional weakens, and the Implicational becomes more dominant, along with its immediate connection to the senses and the body’s arousal system. This leads to a more emotion driven, intuitive, way of knowing. Emotions function as a bridge between the individual and others; they enable relationship. This mode of operation, the ‘wave state’ , can be seen in terms of stepping beyond the individuality which is the province of the Propositional, into a place of relationship. Newberg ‘s research (D'Aquili & Newberg 1999) into the effects of meditation, (by nuns) on the brain produced the interesting finding that blood was withdrawn from the parietal lobe, identified as the seat of the sense of self (quoted in Clarke 2014).

**4. The Web of Relationship**

The reality of internalized relationship as a building block of the human psyche has been well documented in the psychotherapeutic literature, with particular reference to the early caregiver relationship (Bowlby 1969, Ogden 1983, Ryle & Kerr 2004). Babies experience the world in terms of pure relationship, as their Propositional Subsystem has not developed sufficiently to allow them to discern separate individuality. Where that relationship is less than adequate, this is deeply threatening to the infant who is entirely dependent on it. The scars of the resulting sense of threat persist within the Implicational and can be re-activated at any time, whenever the Propositional, with its moderating knowledge of context and time is de-activated. This phenomenon of re-experienced trauma is commonplace within psychotherapy, and lies behind the dysfunctions that attract the diagnosis of Post Traumatic Stress Disorder (PTSD).

This provides a clear example of the way in which we are made up of relationship. The very character of those important relationships is a part of us. I would argue further, that because all relationships are nested within other relationships, we are actually held in a web of relationships that stretches far beyond other human beings, to embrace the non-human creatures, the natural world, the planet, and as I will shortly argue, beyond.



 In this way, relationships are knitted deep into the fabric of our being. Where they are sound and loving, we are secure and can give love. Where they are abusive (as for instance our collective relationship with our planet) the resulting damage is registered deep in our psyche as well as affecting the abused environment. Efforts to avoid the resulting pain tend to direct the individual towards addictive, compulsive, behaviours, that deaden feeling, and as Matthew Fox points out, much of our Western lifestyle constitutes addictive behaviour (Fox 1994).

**5. Understanding the Implicational Way of Knowing.**

This exposition of the central place of relationship in the composition of the human self is a preparation for proposing a scientific basis for transcendence. Several points of the argument so far are salient for establishing this.

* Relationship is an integral part of us in our relational/implicational (wave state) mode of being.
* This vital element of our psyche is registered as feeling.
* We can feel more than we can precisely know – this way of knowing penetrates beyond Propositional reach, and it is only the Propositional that can know with precision.
* Relationship is by its nature two way: we register the effect of each pole.
* The Implicational operates outside of time and space, which are the sphere of the Propositional (as discussed when covering the effect of past trauma on current functioning, as in PTSD, earlier).
* Therefore, a sense of relationship provides authentic information about a vital aspect of our being and can operate beyond the laws of time, space and matter.

These points are made as a preparation for consideration of that sense of relationship with the ultimate, whether labelled as a discrete being (God, Godess etc.) or as a more abstract experience of total relationship. As already indicated, such a sense of relationship has been a given throughout human history and, indeed, persists to this day. My argument is that relationship is real and vital and only known through experience, so that the absence of an identifiable, physical, object does not invalidate it. ICS gives us a glimpse of a model of the self that can flow beyond the constraints of individuality and physicality. The problem is that it also flows beyond the reach of our limited, filtered, propositional reason. In our dominant, scientific, way of knowing, this leads to the denial and denigration of a whole realm of human experiencing.

**6. The Transliminal**

I have written at length elsewhere about this realm of experiencing (Clarke 2010, 2008) for which I prefer Claridge’s (1997, 2010) term, ‘the transliminal’, or across the threshold, which he borrowed from Thalbourne (1991). Transliminal experience has certain distinguishing features, noted equally in the accounts of the mystics and of those given a diagnosis of psychosis. In summary, these include: dissolution of boundaries between people, self and the universe etc.; coincidences; a powerful sense of meaning – or meaninglessness; the self either experienced as supremely important or lost in the whole; emotions swinging between extremes or entirely absent. This is a place of paradox and paradox is a constant in spiritual/religious traditions. Underlying this paradox is the significant distinction that while ‘ordinary’ reality is governed by a logic of ‘either/or’, the transliminal works on a logic of ‘both/and’ (Bomford, 1999).

As the focus here is on science, I will venture to suggest a way of testing this hypothesis. The dichotomy in ways of knowing is particularly stark in the way certain terms are commonly employed, but this passes largely unrecognized, leading to misunderstandings and logical tangles. Two terms that are used in arguably contradictory ways are: Truth and Reality. In science Truth means empirically verifiable fact. In religious terms, it is a deeply held conviction. Reality is used in similarly dichotomous ways. It should be possible to set up an experiment to probe the ways in which people use and understand these terms in different contexts, in order to underline this point, and reveal the operation of the two incompatible logics in everyday life.

**Implications of the Hypothesis for Religion**

This hypothesis has a number of implications for religion.

All the major religions were founded by individuals journeying deep into the Transliminal and impressing followers with their insight into this realm, which holds enduring fascination, and indeed, according to the argument made here, is the vital substrate to our whole being. As a tradition grows up, following the death or departure of the charismatic founder, these Implicational experiences need to be translated into Propositional terms and this is where the trouble starts. The Implicational lends a sense of supernatural importance and absolute certainty while operating beyond words and beyond ordinary logic. Trying to pin it down in the form of credal statements has led endless wrangles, to say nothing of actual wars and bloodshed. However, how are human beings to organize anything if they cannot talk about it, and decide what belongs and what does not?

 Holding onto the central notion of religion as based on that experience of relationship with the Ultimate does offer a way through this, provided one is prepared to tolerate uncertainty. Assertions that God is Love, Allah, as merciful and compassionate etc., refer to quality of relationship and so are authentic to Implicational knowing. However, they are short on precise instructions and certainty. Where religions cannot tolerate mystery and unknowing, and insist on certainty and instructions, we get into the realm of fundamentalism with its powerful attractiveness and attendant dangers. If the science of ways of knowing were better understood, it would be easier to stand up against what I would argue is a travesty of true religion.

The moral dimension of religion also follows naturally from a perspective that sees religion in terms of experience of loving relationship, as love is inextricably bound to responsibility for the beloved. Further, love viewed in Implicational terms, with its dissolution of boundaries, is not confined to one object, but embraces the whole. This is reflected in the Jewish and Christian scriptures with the injunction to love your neighbour, and in the Christian gospel according to Matthew where Jesus explains to those who have come to the aid of others, that ‘as you did it to one of the least of these, my brethren, you did it to me’ (Matthew ch.25 v.40). In this way, a relational understanding of religion that comes about through appreciating the workings of the Implicational, gives us a justice and other oriented morality. This is in contrast to the more Propositionally focused, individualistic, purity obsessed, morality that, by my reading of the Gospels was opposed by Jesus, but has nevertheless proved very attractive to many faith traditions, including Christianity.

**Mutual Enhancement**

I hope that the preceding arguments have illustrated how an ICS based understanding of transcendence could lead to mutual enhancement of both science and religion, as proposed by Fraser.

In the case of science, it offers a respectable way into what has hitherto been either something of a no go area, or one characterised by pseudo-scientific fudge.

It helps to delineate the limits of valid scientific enquiry, beyond which ungrounded Propositional speculation tends to take over, spinning webs of pseudo science.

This recognition of limits, imposed by the limitations of human logical processing, should offer science grounds for realistic humility.

 In the case of religion, understanding the cognitive science basis for the sense of religious connection in a non-reductionist fashion should provide a number of benefits.

It provides scientific validation of religious sentiment in a secular world

It offers arguments for accepting mystery and uncertainty, and so rejecting fundamentalism and false dogmatism.

It supports a religiously endorsed justice based morality which should direct religious energy towards the enhancement of the good of humankind, of other species, and of the survival of the planet.

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