

The Distinctive Human Self

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Unfortunately there is an obsession by “advanced” thinkers to discredit traditional value systems as obsolete, presumably because they had a religious base. So the challenge is to replace traditional values by an ethic based on scientific rationalism or on a more evolutionary basis. The characteristic feature of all these value systems is their materialist basis, though it may be concealed.(1)

Sir Karl Popper and Sir John Eccles defined “self” in their comprehensive work published in 1977, The Self and Its Brain:(2)

...the self is not a “pure ego,” that is, a mere subject. Rather, it is incredibly rich. Like a pilot, it observes and takes action at the same time. It is acting and suffering, recalling the past and planning and programming the future; expecting and disposing. It contains, in quick succession or all at once, wishes, plans, hopes, decisions to act, and a vivid consciousness of being an acting self, a center of action. And it owes this selfhood largely to interaction with other persons, other selves, and with World 3.

And this all closely interacts with the tremendous “activity” going on in its brain.

The highest mental experience is “knowing that one knows,” self-awareness or self-consciousness.(3) It is the most fundamental characteristic of the human species (4) and emerges from levels of linguistic communication not shared by non-human animals.(5) Mind and language are more than physical entities. Distinctively human language enables man to bridge the gulf between mind and matter. Human language reflects a preternatural, spiritual component in humans that does not exist in other creatures and lifts them to a unique eminence in the cosmos, made in the triune image of God.(6)

John Searle (7) has asked how thoughts and feelings, if truly mental, can affect anything physical and make a difference. He states, “Nothing is more common in nature than for surface features of a phenomenon to be both caused by and realized in a micro-structure, and those are exactly the relationships that are exhibited by the relation of mind to brain.” He believes that the mind and body do interact but are not different things. Searle asks, “How can a meaningless world contain meanings?” Mental phenomena are merely features of the material brain without meaning, caused by and realized in the brain’s microstructure.(8) Indeed, neural processes *do* correlate with behavior, intention and emotion, but William A. Dembski’s (9) recent comments counter those of Searle, “Correlation is not causation.”

Bruce L. Miller, M.D., (10) neurologist at the University of California, San Francisco, contends that clinical data has identified one area of the brain that controls much of the sense of self. He studied 72 people with frontotemporal dementia, a degenerative brain disease, seven of whom manifested dramatic changes in personality (the type of clothes they wore, the food they ate, and their political and religious beliefs). Using MRI and SPECT imaging techniques six patients had sustained the most degenerative damage to their brain's right frontal lobe, and the seventh had the most in the right temporal lobe. Miller posits that the architecture of self-maintenance lies in the right frontal lobe where awareness and self-reflection patterns are influenced. "Self" is described as including beliefs and values, even the way people dress. Miller states, "The self is anatomy and biology, and it develops through experiences. It is the coding of these experiences into our brain that is the key to maintenance of self. When we lose that coding, the self becomes fragile, and it is easily tilted over...It may be deflating to some people that the very essence of who they are - including their beliefs and values - is merely another anatomical process."

Dembski (9) points out that a full materialist account of mind needs to understand localized brain excitations in terms of other localized brain excitations. Instead, we find localized brain excitations, such as anger, having to be explained in terms of semantic contents, such as insults. This admixture of brain excitations and semantic contents hardly constitutes a materialist accounting of mind or intelligent agency.

Self-consciousness is "knowing that one knows."(11) It is a most fundamental characteristic of the human species that has recently been discounted in chimpanzees found not to have an awareness of their own thoughts.(12) Self-awareness cannot be pinpointed in the brain (13), contrary to Miller's posit. Popper (14) conjectures that the locus of interaction between the self and the brain is in the speech center, again testifying to its unique functional importance in human beings who can communicate with their Creator God through the Holy Spirit (15, 16).

Man is tripartite, consisting of spirit, soul and body.(17)

May the God of peace himself sanctify you wholly; and may your spirit and soul and body be kept sound and blameless at the coming of our Lord Jesus Christ. 1 Thess 5:23 (NIV)

For the word of God is living and active. Sharper than any double-edged sword, it penetrates even to dividing soul and spirit, joints and marrow; it judges the thoughts and attitudes of the heart. Heb 4:12 (NIV)

The soul that consists of the mind, will and emotion of man distinctively mediates between the spirit and body. It correlates with our self, or self-consciousness, our "I". God communicates with us by intuition through our spirit, through which we are able to perceive Him and to have God-consciousness. (18)

Popper (14) places "self" in what he calls World 2. Here reside subjective experiences, thought processes, states of consciousness, the mind, the soul and (I propose) the spirit.

The physical brain resides in World 1, and the world of matter and energy is not sealed, or closed to nonmaterial influence. The bridge between the mind and the brain is the probabilistic flow of information with no net energy expenditure (19), countering materialists who claim that such bridging violates the law of conservation of energy.

The objection of the materialist to Popper's theory is that immaterial mental events, such as thinking, cannot act in any way on electrophysical structures such as neurons. Penrose (20) invoked quantum theory to underwrite a noncomputational view of brain and mind, but he was nonetheless wedded to a naturalistic reduction of mind and intelligent agency. However, he may have presaged the microsite hypothesis of Popper's colleague, Sir John Eccles (21), who proposed a role for quantum mechanics in relating mental intention of World 2 to neural transmission in World 1 electrophysical structures. A colleague of Eccles, Henry Margenau (19), believes the constituents of synaptic transmission are small enough to be governed by probabilistic quantum laws. Mental events, such as intentions and planned thinking, initiate the exocytosis of presynaptic vesicles with release of their transmitter molecules by changing the probability of their emission from the presynaptic vesicular grid. The event does not violate the conservation laws of physics because the extremely small size of the portion of the grid effected in the transmission allows it to be within the range of quantum mechanics and Heisenberg's Uncertainty Principle. It is now documented that transmission of synaptic vesicles is governed by changes in probabilities. (22) Therefore, mental intention selects by *choice* for vesicular exocytosis across synaptic clefts by changing probabilities of transmission resulting in neural transmission to and within World 1 structures. The mind-brain interface, or bridge, is crossed; the materialist objection is addressed!

Knowledge in the objective sense, man-made culture (art, music, values, personal relationships, beliefs), language and civilization all reside in World 3 and are products of man's intellectual creativity. Popper's three worlds encompass all experience and existence and are fully interactive. The changes observed by Miller (10) in patients with frontotemporal dementia and attributed to "self" were reflected in clothing, food preferences and values. These changes more properly reflect distortions in Popper's World 3, separate from and created by mind, though interactive with "self" in World 2.

A final refutation of Miller addresses the "fragility" of the "self." (10) Eccles (23) explains that the basic connectivities of the human brain are built by genetic determinism before birth in readiness for the subtle changes in synaptic connectivities that develop throughout life in the learning process. The "self", however, remains in continuity with the past and into the future. Connectivities are therefore plastic, and we have shown how they may be impacted by non-material, mental events (19, 21). The "self" is constituted through unique accumulated experiences over a lifetime, and our behavior, memories and the whole content of our inner conscious life is dependent on these experiences. No matter how extreme the changes at given decision points caused by circumstances, one remains the same "self", durable not only through a lifetime but also before we were place in the womb.

Before I formed you in the womb I knew you, before you were born, I set you apart. Jer 1:5 (NIV)

Before I was born the Lord called me. Isa 49:1 (NIV)

For you created my inmost being; you knit me together in my mother's womb. I praise you because I am fearfully and wonderfully made; your works are wonderful. I know that full well. My frame was not hidden from you when I was made in the secret place. When I was woven together in the depths of the earth, your eyes saw my unformed body. All the days ordained for me were written in your book before one of them came to be. Ps 139: 13-16 (NIV)

Our “inmost being” is the innermost center of emotions and of moral sensitivity - that which God tests and examines when he “searches” a person. Ps 139: 13 (NIV) Man’s hidden character and motives are conventional expressions for man’s “heart and mind.” Ps 7:9 (NIV), all constituents of “self” that are represented in Popper’s World 2 and succeed our earthly demise.

Jeffrey M. Schwartz (24) acknowledges studies that have shown that the mind can affect the body, but he has recently presented exciting data that shows that the mind can affect the brain. In his Four Steps to remodel dysfunctional neuronal synaptic connections (neuronal plasticity) in the treatment of obsessive-compulsive disorder (OCD), “brain changes do not require changes in the quantity or quality of sensory input.” Changes in synaptic circuitry occur through *mindfulness* to respond differently to the dysfunctional connections between the frontal cortex and basal ganglia (the OCD circuit). “Mindfulness gives patients attentional skills that allow them to disengage from, and focus instead on alternatives to, the dysfunctional ways of thinking that trigger a relapse of their depression....The will...has the power to change the brain...by activating adaptive circuitry. That a mental process alters circuits...offers dramatic examples of how the ways someone thinks about thoughts can effect plastic changes in the brain.”

Schwartz (24) acknowledges that quantum theory allows for mind, or conscious experience, to interact with the physical brain. His successful clinical treatment of OCD shows that the willful redirection of attention (in Popper’s World 2) is causally efficacious in altering synaptic plasticity. His colleague, Henry Stapp, believes that it is quantum physics that allows mental effort to influence the course of cerebral processes, consistent with the theory of Margenau (19) and Eccles (21).

The “self” makes man distinctively human. The human mystery is demeaned by scientific reductionism with its claim to account for all the non-material world by patterns of neuronal activity. Contemporary neuroscience persists in showing that mind ultimately reduces to neurophysiology.(25) Eccles stated that, “This belief must be classified as a superstition....we are spiritual beings with souls existing in a spiritual world as well as material beings with bodies and brains existing in a material world.” (26)

I close with this provocative quotation from William Dembski: (9)

Within [a] richer world of both material and nonmaterial things, physical laws lose their status as absolutes and become subject to principles that may be quite metaphysical (principles like intelligent agency and divine providence).

References

1. John C. Eccles, Evolution of the Brain: Creation of the Self (London and New York: Routledge, 1989), 224.
2. Karl R. Popper and John C. Eccles, The Self and Its Brain (Berlin, Heidelberg, London, New York: Springer-Verlag International, 1977), 120.
3. Eccles, *ibid*, 201.
4. T. Dobzhansky, The Biology of Ultimate Concern (New York: The New American Library, 1967).
5. Eccles, *ibid*, 71.
6. Joseph W. Poulshock, "Language-Wonder: Theory, Pedagogy, and Research," *Christ and the World, the Journal of Tokyo Christian University*, 8 (1998).
7. John Searle, Minds, Brains and Science, (Cambridge, Massachusetts: Harvard University Press, 1984), 13.
8. Searle, *ibid*, 26.
9. William A. Dembski, "Are We Spiritual Machines?" *First Things*, 96 (1999), 25-31.
10. Bruce L. Miller, "Finding One's Self", Presented at the American Academy of Neurology, 53rd Annual Meeting, Philadelphia, PA, May 5-11, 2001.
11. Popper and Eccles, *ibid*, 178-193.
12. C. D. L. Wynne, "The Soul of the Ape", *American Scientist*, 89 (2001), 120-122.
13. Bas Kast, "Decisions, Decisions...", *Nature*, 411(2001), 126-128.
14. Karl R. Popper, Knowledge and the Body-Mind Problem: In Defence of Interaction, (London and New York: Routledge, 1994), 115.
15. Gordon d. Fee, Paul, the Spirit, and the People of God, Ch. 12, (Peabody, Massachusetts: Hendrickson Publishers, Inc., 1996).
16. Charles C. Ryrie, The Holy Spirit, Ch. 13, (Chicago, Illinois: Moody Press, 1997).
17. Watchman Nee, Spiritual Knowledge, (New York: Christian Fellowship Publishers, 1973), 85.
18. Watchman Nee, The Spiritual Man, (New York: Christian Fellowship Publishers, 1968).
19. Henry Margenau, The Miracle of Existence, (Woodbridge, Connecticut: Ox Bow Press, 1984).
20. Roger Penrose, Shadows of the Mind: A Search for the Missing Science of Consciousness, (Oxford, New York, Melbourne: Oxford University Press, 1994).
21. John C. Eccles, "Do Mental Events Cause Neural Events Analogously to the Probability Fields of Quantum Mechanics?" *Proc. Royal Soc. Lond. (Biol)*, 227 (1986), 411-428.
22. Wade G. Regehr and Charles F. Stevens, "Physiology of Synaptic Transmission and Short Term Plasticity," Synapses, Eds. W. Maxwell Cowan, Thomas C. Sudhof and Charles F. Stevens, (Baltimore, Maryland: The Johns Hopkins University Press, 2001).
23. Eccles, *ibid*, 237.
24. Jeffrey M. Schwartz and Sharon Begley, The Mind and the Brain, Ch. 7-8, (New York: Harper Collins Publishers, 2002).
25. William A. Dembski, "The Act of Creation: Bridging Transcendence and Immanence," Presented at Millstatt Forum, Strasbourg, France, August 10, 1998.
26. Eccles, *ibid*, 241.