



What goes on in our heads? or Exploring Inner Space

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The theme of this Conference is **Exploring Inner Space**. Another way of putting this is to ask, "What goes on in our heads?" Even those words display a fairly modern way of speaking. If you had put that question to the people who wrote the Bible, they would have looked in surprise and said, "Nothing much goes on in our heads, for the skull is simply full of bone-marrow." They associated thinking with the heart and emotions with the intestines. So we do not find any mention of the brain in the Bible.

How the Israelites understood the human condition is clearly expressed in Genesis chap. 2:

God formed humankind from the dust of the ground and breathed into his nostrils the breath of life and man became a nephesh (a living person).

Unfortunately *nephesh* is commonly translated as 'soul' in English translations. It should have been translated as 'person', 'self', 'life', as I shall presently show.

So it is not from the Bible but from the Greeks that our ancient human forebears began to think of our inner world - our inner space - as an entity, one so complete in itself that it could exist apart from the body. From them in general and from Plato in particular, Western culture developed the dualistic understanding of the human condition that is commonly expressed in the phrase 'body and soul'.

Knowing practically nothing of how the brain operates, they approached the topic from the subjective starting point of their own experience of thinking, reasoning and remembering. It appeared obvious to Plato, Aristotle and the Stoics that our subjectivity or consciousness is of a different order of being than are the objects that we can see and touch. So they concluded that in each of us exists a non-physical entity they called *psyche*, which we translate as 'soul', or 'mind'. They used the word more widely than later became the tradition. It was due to Plato that we came to associate the soul with the head for that is where he located the rational part of the soul that he deemed to be immortal.

The etymology of the word in Greek reveals how the idea of soul evolved, for the word from which *psyche* was derived meant 'to blow'. It originally referred to the breath that gives us life. But by the time of Plato the *psyche* was conceived as an entity so complete in itself that part of it could survive the death of the body. Thus Plato affirmed the immortality of the soul, a doctrine that eventually became part and parcel of Christian orthodoxy.

By contrast the Hebrews had no doctrine of a spiritual after-life and it is interesting to compare their *nephesh* with Greek *psyche*. Like *psyche*, *nephesh* also is derived from a root meaning to breathe but now note the difference. For the Greeks the *psyche* or soul was in the body. This gives us our common notion of a human being as body and soul. Each of us is an enfleshed soul. When the flesh dies, the soul carries on. *Psyche* even came to mean 'ghost'.

For the Hebrews the *nephesh* (or soul) is an animated body. We do not have souls: we are souls. When our bodies die, we die. *Nephesh* even came to mean 'corpse'. Any post-death existence had to take the form of a bodily resurrection. Hence we see the importance of resurrection in Christian thought.

Thus it is from the Greeks that we inherited the dualist tradition of the human condition as a body and soul, or alternatively mind and body. But what is the soul? What is the mind? Is it an entity that can operate independently from the body? Theologians and philosophers generally gave these questions rather different answers.

Theologians were concerned with the fate of the soul and developed an elaborate doctrine on what happened to the soul after the death of the body. For example, the Westminster Confession of Faith expresses it thus:

"The bodies of men after death return to dust and see corruption; but their souls, (which neither die nor sleep) having an immortal subsistence, immediately return to God who gave them."

Philosophers preferred the word 'mind' and discussed, as the body/mind problem, how the mind is formed and how it interacts with the body. The philosopher John Locke (1632-1704) believed the mind at birth is completely empty - a tabula rasa - a clear blackboard waiting to be written on, an empty container waiting to be filled. That was the state of affairs in both theology and philosophy until the eighteenth century.

More recently the philosophy of mind (mental philosophy) became known as psychology. Psychology means 'the study of the psyche', otherwise known as the soul or the mind. As late as the 1930's, when I first studied psychology as a student, it was still within the philosophy department. I was introduced to Freud and Jung in a philosophy course named 'Abnormal Psychology'.

The advent of what became known as depth psychology did appear to make some positive progress in our understanding of how the mind works. Freud spoke of our dreams as "the royal road into the psyche". Freud's psychoanalysis and Jung's analytical psychology are both still used today by their respective practitioners to help people understand themselves. I have personally found Jung's model of the psyche to be quite helpful both in self-understanding and in offering a fruitful way of understanding religious experience.

But depth psychology is still confined to the subjective study of the psyche and pays no attention to the physical brain, where the psyche supposedly operates. Perhaps the first sign of a change taking place was the introduction of the term 'psychosomatic' early in the twentieth century. It led the philosophical mind/body problem into the medical fields of anatomy and physiology by recognising that the mind could cause changes in the physiology of the body and vice-versa. In other words, the mind was not to be regarded as an entity independent of the body. Minds cannot operate without the brain. The long supposed duality of body and mind must be re-connected into an indivisible whole. It is ironical that the wholeness of the person long assumed by the biblical tradition has proved to be nearer the truth than the dualism coming from the Greeks.

But though it was now being acknowledged that mind and body constitute an indivisible unity, little was yet known of how the mind was related to the brain. A person who spent his life time studying this relationship was Julian Jaynes (1920-1997). He was a rather odd but very able man, who after gaining degrees at Harvard, McGill and Yale, spent his life researching the nature of human consciousness, spending a good deal of time studying animal behaviour. In

1976 he published his findings in a book that has caused widespread and on-going controversy: *The Origin of Consciousness in the Breakdown of the Bicameral Mind*.

His thesis is that until about three thousand years ago human minds operated much as do those of the higher animals. All actions were determined by instinct or habit rather than by conscious choice. Until that time the two hemispheres of the brain operated in what he called the bicameral state. In the bicameral state the right hemisphere still operated in some independence from the left hemisphere, and thus appeared to give commands from an outside source. Jaynes believed this to be the origin of the idea of gods and the conviction that they spoke directly to humans. The residue of the bicameral state is to be found in those who hear voices in their heads or who suffer from schizophrenia.

What Jaynes called the breakdown of the bicameral mind came about as a result of the evolution of human language. It reached a point where it lifted the consciousness to a higher level, one in which we experience self-consciousness or self-awareness, and develop a critical mind. Our actions were now initiated by conscious choice as well as by instinct or habit.

Jaynes offered a great deal of cultural evidence to support his theory. He won over a great number of supporters and created many fierce critics. Essays in support were published in 2006 as *Reflections on the Dawn of Consciousness, Julian Jaynes's Bicameral Mind Theory Revisited*.

One supporter was Rabbi James Cohn, who in 2013 applied Jaynes's theory to the Old Testament in his book, *The Minds of the Bible: Speculations on the Cultural Evolution of Human Consciousness*. Though he believed that there was much to be said in favour of Jaynes's theory, he insisted that the date of the breakdown of the bicameral mind was about 500 BCE rather than 1000 BCE. Cohn found that all but one of the books of the Hebrew Bible reflected the bicameral mind. For example, the prophets from Amos onwards claimed they were reporting what the Lord God said to them directly person to person. That is why the oracles are always in the first person, God saying to Amos such things as, "I hate, I despise your feasts and I take no delight in your solemn assemblies". "Thus did God say to me", is how the oracles are prefaced. In Jaynes's theory the prophets really heard these words but they originated in the right hemisphere, rather than from an external source, and were heard and responded to by the left hemisphere. (In Jungian theory the voices originated in the personal unconscious and proclaimed by the conscious ego.) What applied to the Israelite prophets continued in Muhammad: the suras of the Qur'an originated in Muhammad's right hemisphere, leading him to claim they had been delivered to him by an angel.

Back to Cohn and the Hebrew Bible. The one exception, he argued, was the Book of Ecclesiastes, written about 200 BCE and thus after the breakdown of the bicameral mind. In Ecclesiastes we find for the first time in the Hebrew Bible some evidence of critical self-consciousness when he tells us, "I said to myself". It is worth noting that a literal translation of his words is, "I had a conversation with my heart". Remember that the ancient Israelites regarded the heart, and not the brain, as the location of our thinking.

At the same time as Jaynes was arriving at his theory, two other people were collaborating on the same problem of how the experience of self-consciousness had come to arise in the brain. These two were the philosopher Karl Popper (first of Canterbury (1937-49) and later of the London School of Economics) and the physiologist John Eccles (Professor of Physiology in the University of Otago, 1947-52). In 1977 they wrote *The Self and Its Brain*. Eccles followed this in 1989 with *Evolution of the Brain, Creation of the Self*.

In the latter Eccles claims that "the speech areas of the brain are already formed before birth". Thus, unlike other hominids, we come into the world with brains already genetically

programmed for the learning of language. Two decades earlier the linguistic philosopher Chomsky had found that children learn language much faster than expected and concluded that the human genes have caused the linguistic areas of the cerebral cortex to construct the basic structures of a universal grammar.

To understand the full picture we need the contribution of Karl Popper. Dissatisfied with the body/mind duality of the Western philosophical tradition Popper constructed a Three-world model of Reality. This was his contribution to *The Self and Its Brain*, the book he wrote jointly with Eccles. (A fuller exposition and discussion of this model appears on pp. 63-71 of my book *Tomorrow's God, How we Create our Worlds*, 1994, and also in *From the Big Bang to God*, pp. 83-94.)

To do justice to the reality of human consciousness and its products, Popper proposed a model of three Worlds. Only the first of these is physical, visible and tangible. World 1 is the space-time continuum of energy, stars and galaxies, of all of the 92 elements of inorganic matter, which are the raw material of all organic matter found in the diversity of living creatures, including the human species itself.

World 2 consists of the many and diverse states of consciousness experienced by all living creatures, from the level of the lowest organism (perhaps the amoeba) through all sentient creatures to the level of critical self-consciousness that we humans experience today. We are chiefly concerned with human consciousness. Even that is more complex than it may seem, for in World 2 is creative imagination, memories, dreams, with remembered dreams eventually finding a place in World 3.

World 3 is the body of knowledge, both personal and cultural, that has been made possible and has evolved through the advent of language. Popper refers to this world as the "products of the human mind", though clearly it is largely because of what we receive from our cultural setting that we develop a mind of our own. So World 3 and the human mind evolve in tandem. The reality and importance of World 3 can hardly be overemphasized. Without it we would still be living the life of the other hominids.

The brain may be likened to the hardware of a very complex computer. Each language-based culture is like software with which the computer is loaded. When a sufficient amount of cultural software is loaded into the brain we begin to develop self-awareness. This is usually between the age of two and three years. As Eccles says, "At birth the human baby has a human brain, but its World 2 experiences are quite rudimentary, and World 3 is unknown to it. The baby is a human being but not yet a human person".

The infant becomes a human person by the process in which its fast-evolving consciousness interacts with World 3, the world of culture. From infancy to adolescence our consciousness is evolving. Eccles refers to this as the ladder of personhood, It is this development that makes the human species qualitatively different from all other hominids. If we do not receive this cultural software, our potential to become human becomes stunted. The infant's potential to become a human person may even atrophy, as in the case of feral children.

Most of the time we are unaware of the existence of World 3 and of our own inner world; we simply take them for granted. This is because our own inner world has been with us as far back as we can remember, and we remain immersed in World 3 all the time. We have never known a time when it was not there, for it developed in tandem with our own physical and mental growth. It is this inner world that constitutes our own personal identity. As we mature we become more aware of it. Sometimes this occurs as a sudden flash of insight, usually in adolescence. Whether suddenly or by growing awareness, it is certainly during

adolescence that we become independent persons and take possession of our own thoughts. We become introspective for the first time. We begin to question what we have been told and we distance ourselves from the authority of others.

So we humans live in two worlds - Popper's World 1 and World 3. These could be called Outer Space and Inner Space. No one doubts the reality of Outer Space, otherwise known as the space-time continuum or physical universe. It is through our senses that we experience the outer world of space and time. But as we do so, we each construct throughout our lifetime an inner world of thought or knowledge by which we interpret the outer world. Indeed, our inner world is the lens through which we construct a mental picture of the outer world. What we see, touch, hear and smell is a world interpreted by us. Much of this inner world is communicated to us through the medium of language by the culture into which we are born. Each culture has over time built up its own world of thought or knowledge, and the sum-total of these thought-worlds constitute what Popper called World 3. All religious concepts and beliefs belong to World 3 and are experienced in World 2.

But though we now know more of the human brain of World 1 and more of how human minds created World 3, we are still very much in the dark about human consciousness of World 2 and of how it reached the level that we now experience. Why and how human consciousness emerged in the evolutionary process remains an awe-inspiring mystery. These are the questions we are here to discuss.

