



Mind

Of all the problems that information philosophy may help to solve, few are more important than the question of Mind. There is little in philosophy and science that is more dehumanizing than the logic chopping and sophistical word juggling that denies the existence of both mind and consciousness.

Some of the earliest philosophers saw an *immaterial* mind as the source of eternal truths about reality that could not be based on mere phenomena - unreliable sensations emanating from material bodies.

RENÉ DESCARTES' dualism left room for a non-mechanistic, *immaterial*, and *indeterministic* human mind above and beyond the deterministic limits set by the laws of nature, when the bodies of all animals are reduced to living machines.

IMMANUEL KANT renamed the ancient division of sensible and intelligible worlds. The sensible he called phenomena. He located God, freedom, and immortality in a noumenal world.

Information philosophy hopes to show that information is itself that immaterial "substance" above and beyond matter and energy that the ancients, Descartes, and Kant were all looking for. Mind is metaphysical, but not supernatural.

The Scandal in Psychology

It's a scandal that psychology today is a science without a subject - it has lost its mind! In the 19th century, positivism and materialism left the new science of psychology dis-spirited. In the 1920's psychology surrendered its soul to behaviorism. In the 1950's it gave up consciousness, when cognitive science found no "ghost in the machine." Since the 1970's it has been replaced by cognitive science and neuroscience.

Can there be a psychology without a psyche?



A survey of today's four leading textbooks on psychology finds only one that defines psychology as "the science of mind." Another has for its main index entry, "mind, theory of, see theory of mind. A third, has "mind, see brain," and the last has no entry at all under "mind." Today mind is a psychologist's taboo.

The assault on the mind and the study of mind by introspection was led by JOHN B. WATSON, who in the early twentieth century applied positivist ideas to psychology, reducing it to objectively possible observations and measurements of the motor behavior of animals and humans.

Like the positivists, Watson and later B. F. SKINNER, were materialists and determinists who not only ruled out the mind and consciousness, but also free will. Although behaviorism faded with the retirement of Skinner, the basic position of denying free will, consciousness, and mind continues as the fundamental stance of cognitive science and neuroscience.

The most popular representational theory of mind today is the computational mind model. Leading philosophers of mind claim to prove that the "causal closure" of the physical world reduces mental events to physical events. Eliminative materialism does not bother to say the mind is an epiphenomenon. Mental states simply do not exist. Consciousness cannot be explained. It is explained away.

It is a scandal today that some academic psychologists are convincing students that they are machines, their brains are computers, and their actions are completely determined.

Mind as *Immaterial* Information

Information philosophy views the mind as the immaterial information in a brain. The material brain is seen as a biological information processor. Mind is software in the brain's hardware, although it is altogether different from the logic gates, bit storage, algorithms, computations, and input/output systems of the type of



digital computer that is used as a “computational model of mind” by today’s cognitive scientists.

The “stuff” of thought is pure information, neither matter nor energy, though it needs matter for its embodiment and energy for its communication. Information is the modern spirit, the soul in the body, the ghost in the machine.

The Evolution of Information to Become Mind

How did material substances come to be able to think? Ancient philosophers assumed that mind and thought must be primordial, perhaps prior to the creation of matter. In recent centuries philosophers argued that mind must be an inherent “panpsychist” property of all matter, because they could not identify a time when material things acquired a mental property.

But we can now outline the creation and evolution of information from an initial state of the universe (with minimal, essentially zero information and the most elementary of particles and radiation) to the “information age” of today.

The first proto-minds appear not long after the beginnings of life. We identify the origin of life with the ability of some large molecules to replicate and communicate information so as to harness a cosmic flow of information-rich free energy that we describe as negative entropy.

Information philosophy makes the straightforward claim that human beings, especially their minds, are the most highly evolved form of information generating, processing, and communicating system in the known universe. Recognizing this simple fact provides a radically new perspective on the central problems of psychology and philosophy of mind.

In a very deep sense, *we are information*.

The story of evolution, from a minimal information universe origin, through 4 billion years of biology, to the information-processing brain/mind, now contemplating the universe, can be told in three major emergences:



- the self-organization of elementary matter, quarks to protons and neutrons etc., then atoms, then galaxies, stars, and planets, all material information structures,
- the first appearance of life, information structures that create, process, and communicate information inside an organism and between generations by variation, natural selection, and heredity,
- the appearance of human minds, which create, process, and store information external to their bodies.

With the appearance of life, purpose entered the universe. The fundamental purpose of all life is to survive, at least long enough to replicate. For most species, all of the information needed to survive is transmitted in the genes and the supporting biological machinery of the cell. To benefit from the experiences of an ancestor, those experiences must somehow be encoded genetically, so they show up as *a priori*, built-in capabilities of the offspring. KONRAD LORENZ said that what is *a priori* for an individual (ontogeny) was *a posteriori* for its ancestors (phylogeny).¹

The appearance of human minds marks the beginning of significant amounts of knowledge stored extra-biologically. Externally stored information needed for human survival is transmitted culturally between the generations - parents teaching children. The development of the highest forms of philosophical and scientific thought would have been impossible without the externally stored information we call the *Sum*. Arguably, even language itself could not have developed. A child deprived of its senses for access to human culture would never speak. According to MERLIN DONALD, human culture did not develop because humans had acquired language to communicate. We developed language to improve on the primitive communication capabilities (grunting, miming, pointing, signing) of pre-linguistic humans.²

An Information Mind Model

Our model of mind as pure information coincides with Plato's "Ideas" or "Forms" as pure form, with an ontology different from that of matter. The *immaterial* Forms, seen by the intellect (nous), illuminated by the Good, allow us to understand the world. If this

1 Evolution and Modification of Behavior.
2 A Mind So Rare.



theory of mind seems *metaphysical*, that is appropriate, but we do not view the mind as non-physical. The mind is physical but it is not material.

After all, the information stored in our *experience recorder and reproducer* is embodied. Like the information embodied in matter, it corresponds simply to a reorganization of the matter. So we can also accept ARISTOTLE's more practical view. For him, PLATO's Ideas were mere abstractions generalized from many existent particulars. Form without matter is empty, matter without form is inconceivable, unimaginable. Kant rewrote this pre-Socratic observation somewhat obscurely as "Thoughts without content are empty, intuitions without concepts are blind."³

In our model of the mind, the great difference between the mental and the material is that the information in a material object is generally passive. The information in the mind is active, with real causal power.⁴

But there are other characteristic differences between the mental and the material world that modern science, even neuroscience, may never fully explain. The most important is the internal and private first-person point of view, the essential subjectivity, the "I" and the "eye" of the mind, its capability of introspection and reflection, its intentionality, its purposiveness, its consciousness. The mind records an individual's experiences as internal information structures in the ERR and then can play back these recordings to compare them to new perceptions, new external events. The recordings include an individual's emotional reactions to past experiences, our feelings. The reproduction of recorded personal experiences, stimulated by similarities in current experience, provide the core of "what it's like to be" an individual.

The external and public physical world, by contrast, is studied from the third-person point of view. Although putatively "objective," science in fact is the composite "intersubjective" view of the "community of inquirers," as CHARLES SANDERS PEIRCE put it. Although this shared subjectivity can never directly experience what goes on in the mind of an individual member of the community, science is in some sense the collective mind of the physical world. It is a pale record of the world's experiences, because it lacks the emo-

3 *Critique of Pure Reason*, 2nd ed. Second Part, I, Transcendental Logic,
4 See the discussion of agent causality in chapter 4.



tional aspect of personal experience. The physical world itself has no sense of its history. It does not introspect or reflect. It lacks consciousness, that problem in philosophy of mind second only to the basic mind-body problem itself. We see consciousness as based on a highly evolved experience recorder and reproducer (ERR) that even the lowest organisms may have.

Aristotle, in his Book III, Parts IV and V, of *De Anima* (On the Soul), perhaps the most controversial and confusing part of his entire corpus, says that the soul (psyche) or mind is *immaterial*. He was right. For Aristotle, Intellect (*nous*) is that part of the soul whose active thinking gives it a causal (*aition*) power (*dynamis*) over the material (*hyle*) body (*soma*). This claim anticipates the mind-body problem of RENÉ DESCARTES. How exactly does an immaterial thing (substance) or property exert a causal force on the material body?

It is sometimes forgotten that Descartes made the mind the locus of undetermined freedom. For him, the body is a deterministic mechanical system of tiny fibres causing movements in the brain (the afferent sensations), which then can pull on other fibres to activate the muscles (the efferent nerve impulses). This is the basis of stimulus and response theory in modern physiology (reflexology). It is also the basis behind connectionist mind models. An appropriate network need only connect the afferent to the efferent signals. Descartes said no thinking mind is needed for animals (or computers where inputs completely determine outputs).

The popular idea of animals as machines included the notion that man too is in part a machine - the human body is thought to obey strictly deterministic causal laws. But for Descartes man also has a soul or spirit that is exempt from determinism and thus from what is known today as “causal closure.” But how, we must ask, can the mind both cause something physical to happen and yet itself be *acausal*, exempt from causal chains? This is the problem of mental causation.⁵

Since IMMANUEL KANT, this problem has become even more severe. The freedom in Kant’s noumenal world - outside space and time - has no apparent connection with his deterministic phenomenal world. For Kant, causality is a category of understanding applicable only to the phenomenal world. In a similar vein, the twenti-

5 See chapter 16.



eth-century philosopher GILBERT RYLE called the concept of mind a “category mistake.”⁶

Information philosophy hopes to solve the mind/body problem, the “hard problem” of consciousness, the problem of other minds, and the problem of mental causation, not by postulating a non-physical world, but instead a world that answers to the ancient description of “*metaphysical*,” because it is non-material. This metaphysical world is the locus of everything Aristotle included in his first philosophy, the laws of thought and today the laws of physics.

The *metaphysical* world of information is abstract, not concrete, intangible, yet with causal power as Aristotle thought. The material world is made up in part of information structures. (We shall see that most of the matter in the universe is chaotic and contains little or no information.) But material information structures, from the galaxies, stars, and planets, to all of life on the planet, can be perceived because of their information content. What we see is their abstract information which we then re-present as information structures in the mind/brain. To the extent that the information in the mind is isomorphic with the information in the object, we can say that a subject has knowledge of the external world. To the extent that information in other minds is isomorphic, we have intersubjective shared knowledge, something very difficult to show with words or logic alone.

Information philosophy goes “beyond logic and language.”

6 *The Concept of Mind.*

