

What is Consciousness?

Human consciousness includes the following components:

- o The ability to observe and remember your own thoughts.
- o The ability to observe sensory qualia (colors, sounds, etc.).
- o The ability to process and analyze massive amounts of information simultaneously across space (e.g. facial recognition).
- o The ability to exert self-control over your own actions (i.e. free will).
- o The sense of inner self-identity (i.e. the “I”) that feels independent of your body.

The Ability to Observe and Remember Your Own Thoughts

Consider the following thought experiment. Think about a special experience from the past. Perhaps it was your memory of your first Christmas present, or your first kiss with someone special, or when you first saw your first baby, or the moment when one of your parents passed away. Think about the emotions you felt at that time. Were you extremely happy or sad at that moment? Now imagine how you could have made that experience happier or sadder at the time.

Now think about the experience you just had of remembering and analyzing a past experience. Are the emotions you just experienced a little faded compared with those of the original experience. Is there something you could do to make the current experience more vivid?

You have just had thoughts that remembered and analyzed an experience from the past, and then you remembered and analyzed those thoughts. Can you do it again? Can you remember and analyze the thoughts you had about the thoughts you had? How many times can you think about thoughts about thoughts about thoughts, and so on?

What you have just experienced are the “strange loops” of conscious mental self-referential recursion that Douglas Hofstadter eloquently describes in his books [Gödel, Escher, Bach](#) and [I Am a Strange Loop](#). Hofstadter maintains that these “strange loops” are the basis for human consciousness.

Now, while mental self-referential recursion is an important part of human consciousness, it isn't actually the “basis” for consciousness. Rather, it is an important component of mental processing that combines with many other components to produce what we know as human consciousness. (See below for more on the “Basis of Consciousness”)

In his books, Hofstadter also claims that if self-referential recursive processing is implemented in a computer, then the computer itself could become self-aware and conscious. This is another claim that is highly doubtful. (See [Big Questions/The Singularity.](#))

The Ability to Observe Sensory Qualia (Colors, Sounds, Etc.)

The ability to produce and observe sensory [qualia](#) is known as the “hard problem of consciousness”. We all have this ability, and know it to be real, but it is difficult to explain how it arises in the physical world.

The best theories we have on this are from ElectroMagnetic (EM) [Conscious Field Theory](#) (CFT). These theories explain many of the characteristics of mental qualia. But the origin of this ability within our brain, and the technology used by the brain to create and display mental qualia, are unknown. We do know, however, that the technology is related to biological “Homochirality” and “Chiral-Induced Spin Selectivity” (CISS) within the brain. (See [“How Do We Create Color Qualia in Our Mind’s Eye?”](#))

We also know that mental qualia, and other abilities of the conscious mind, are accomplished in the brain with extreme efficiency, i.e. with extremely low EM field voltages, and by utilizing extremely small (and even individual) numbers of elementary particles (e.g. individual electrons and photons). Indeed, this is one of the reasons that so little is known about the details of this ability, since the levels of its activity are too low to be detected by even the most precise and sensitive mechanical (i.e. non-biological) instruments and devices. That is also why this ability may never be developed in non-biological machines.

But even though we may not understand the technology in the brain that produces qualia, nor the origin of that technology, we are able to characterize it, much in the same way that we can characterize the force of gravity without understanding its origin and method of operation. For example, see the article on [“Qualia: The Geometry of Integrated Information”](#).

The Ability to Process and Analyze Information Simultaneously Across Space

The conscious human mind has the ability to observe, process, remember and recollect simultaneously millions of bits of information. This occurs, for example, when we recognize faces. This ability is unheard of in mechanical processes of facial recognition, which always operate bit-by-bit (or byte-by-byte), sequentially over time.

This ability is neatly explained by the Conscious ElectroMagnetic Information (CEMI) field theory as the “spatial integration of information encoded in the brain’s global EM field”. (See [“Integrating Information in the Brain’s EM Field: The CEMI Field Theory of Consciousness”](#) for more on this.)

The Ability to Exert Self-Control Over Your Own Actions (Free Will)

The conscious mind does more than just observe and remember vast amounts of sensory information. It also uses that information to affect changes in our thoughts and actions. As the brain produces sensory qualia in its EM field, it also processes the spatial information contained in that field. This processing activates downstream brain neurons that affect our thoughts, memories and actions.

Even if the conscious control of our thoughts and actions is ultimately caused by material processes within our brains, that does not negate the freedom of will that we exercise with this control. That is because this control is exercised by our own conscious minds, so that we are intimately connected with it. All of our own past experiences and responses contribute to these decisions. Ultimately, the decisions of our conscious mind are caused by the inner self that defines us, and the experience we have garnered from our growth processes. So our conscious decisions are freely ours.

The Sense of Inner Self-Identity

Along with my self-awareness of my own body, brain and mind, I am also aware of a special part of myself (the inner “I”) that feels independent of everything else. It’s the part of me that asks “Why am I in this body?” or “Why did my own inner awareness spark to life within this body?” Now, of course, every human body/brain has its own self-awareness, so that everyone can ask themselves this question. So perhaps my body also simply contains a brain that has become self-aware, and that self-awareness just happens to be what I feel as “I”.

But what processes within the brain causes this “sense of self”? One interesting possibility is that the sense of self is a quale, just like the experience of blueness in the sense of sight, or sweetness in the sense of taste. If that is the case, then self-identity may be caused by the brain’s interaction with the CFT/CEMI field of consciousness. (See [“Is Your Sense of Self the Same as Mine?”](#))

The Basis of Consciousness

As we understand more about human consciousness, we can better appreciate the astounding complexity of the technology in the human brain that makes consciousness possible. In particular, consciousness is only made possible by the homochirality of living cells, and by the chiral-induced spin selectivity (CISS) that occurs in homochiral human brain cells. A good discussion on what we are learning about homochirality and CISS in living cells is given by synthetic chemist James Tour in [Episode 11](#) of his series on “Abiogenesis: Origin of Life”.

As discussed by Dr. Tour, there is abundant and growing evidence that it is not possible to develop homochirality in living cells via any non-biological chemical processes. That is, the only way to build homochiral living cells is for existing biological cells to be already available, with the complicated enzymes and nano machinery already in place to replicate, build and maintain homochirality in new cells.

This implies that all living cells, including the human brain cells that produce consciousness, must be “seeded” from pre-existing cells within a biologically sustaining environment. This means that the ancestors of all living cells must have at some point originated from a non-material, transcendent source.

A similar requirement of transcendent sourcing can be argued for the astronomical amount of [coded information](#) contained in all living cells (e.g. genetic code, sugar code, histone code, signal process codes, etc.). This is discussed in Stephen Meyer’s book [“Return of the God Hypothesis”](#).

In the case of consciousness, once the technology has been built within the brain cells of a human brain, it appears that the components of consciousness, as discussed above, operate within material time and space. There is no good evidence that we know of at present to suggest that day-to-day human conscious processing requires any transcendent or “spiritual” mechanisms. Thus, while the technology of the conscious mind appears to require a transcendental origin (as does life itself), all currently existing conscious minds appear to operate within the material world. So, for existing brains, mental “monism” appears to be more likely than mental “dualism”. That is, the consciousness that we experience appears to be caused solely by the material within our brain, coupled with its interactions with the CFT/CEMI field of consciousness.