

Scientific Materialism and Goswami's Alternative Paradigm

I. The Traditional Paradigm: Scientific Materialism

- A. Causal Determinism or the hypothesis that the world is a machine like a mechanical clock. Events proceed in a linear fashion where A is the antecedent for B and B is the antecedent for C and so on.

Experimental studies demonstrate that the exact position and velocity of an electron cannot both be known. Thus, all one can do is create probability distributions (bell curves) for both variables and identify probable values for the variables. The two distributions of values together represent a wave of possibilities. Heisenberg, one of the co-founders of quantum mechanics, expressed this finding in his now famous uncertainty principle. Newtonian or classical determinism depends upon being able to predict both initial position and velocity exactly. If things cannot be predicted with precision classical determinism is out the window because the beginning point for the causal chain can never be known. What is left is statistical determinism, which at least opens the door to creative outcomes.

Planck's constant (h) fixes the scale at which quantum effects are large. Fortunately, h is small, which means that quantum effects are only large effects at the micro level. The small value for h hides quantum effects at the macro level. However, even macro objects have been demonstrated to retain some aspect of the wave of possibilities from which they collapsed. The wave aspect continues to spread out over its probability distribution extremely slowly. Collapsed waves or objects (comprised of particles) are still governed by statistical determinism but the collapsed wave spreads so slowly that its inherent uncertainty can be ignored for all practical purposes. However, even though it is hardly detectable with the most sophisticated instrumentation the continuing spread of the collapsed wave implies that there remains some connection to the wave of possibilities existing prior to material manifestation.

Note: The miniaturization of computer processors is rapidly reaching the point where quantum effects will be large enough that they will need to be taken into account in processor design.

One way to think of this process might be to imagine that a wave of possibilities is like a continuous loop of images where there are 20 images of A, 15 images of B, 10 images of C, 5 images of D and 1 image of E. Thus, if one slows down the loop until one image becomes the focus you have the collapse of the wave of possibilities. Also note that the image that becomes the focus is most likely to be A ($p = .39$) but could be E ($p = .02$). The loop (wave) has taken on the appearance of a single frame (particle). However, recall that one has only slowed down the loop not frozen it. Thus, the loop is still progressing but in very slow motion. Whether you will ever detect this slow movement depends upon how long and with how much precision you observe the image. Even though one now observes only a single frame that frame still retains a hidden connection to the loop.

Note also the difficulty in identifying a linear chain of causation in a loop.

B. Continuity or the hypothesis that all change is continuous.

Experimental studies confirm that atomic energies exist at discontinuous energy levels, which are fixed. Thus, an electron cannot exist at intermediate energy levels. When an electron changes orbits (distance from the nucleus), it goes from one discrete energy level (orbit) to another in a single quantum leap. The electron's change in orbit provides evidence for spatial discontinuity. This is further illustrated by the phenomenon known as quantum tunneling in transistors in which an electron disappears from one side of a barrier and reappears on the other side without passing through the barrier.

C. Locality or the hypothesis that all effects and their causes occur in space with a finite velocity over a finite amount of time.

Before quantum mechanics, all influences were assumed to be local; i.e., taking a certain amount time to travel through a certain amount of space. However, in quantum mechanics the discontinuous collapse of a sprawling possibility wave is instantaneous and therefore nonlocal. A possibility wave exists in transcendent potentia, that is, outside of space and time, which is why when it collapses and becomes manifest within space-time the effect is instantaneous. Nonlocal correlation (Einstein's spooky action at a distance) between quantum objects has been experimentally verified and confirms that a transcendent domain is part of reality, which contradicts the assumptions of material realism.

D. Strong Objectivity or the hypothesis that the material world is independent of observers (consciousness).

The wave and particle natures of quantum objects are complimentary. The wave aspect is transcendent and the particle aspect is immanent. What then causes a quantum object to make the transition from wave to particle? It is widely accepted that observation or measurement produces the collapse. Mathematician John von Neumann suggested that the operative property in observation or measurement is consciousness. While not conclusively demonstrated, it appears that consciousness chooses where a wave will manifest as a particle in a particular event. Thus, how can there be strong objectivity in physics if consciousness has the power to choose material reality?

E. Material Monism and Reductionism or the hypothesis that every phenomenon is material in origin and can be reduced to its constituent particles; i.e., bottom up causation.

If matter grounded reductionism is correct, then all of reality can be reduced to elementary material particles. In other words, everything arises from the bottom up as aggregates of material particles coalesce into ever-larger objects. However, if consciousness is needed to collapse waves of possibility into material actuality (particles), which is top down causation, one has mutually exclusive causal mechanisms.

- F. Epiphenomenalism rests upon the hypothesis that causation is from the most elementary material particles upward to the macro phenomenon that we observe, including ourselves. Thus, all non-material phenomena such as thought and consciousness are secondary derivatives of matter.

If consciousness has the causal power to determine material reality how can it be a derivative of matter? The long, progressive build up to a material brain capable of producing consciousness could never take place, if consciousness is required for the collapse of a possibility wave to a particle of matter.

II. An Alternative Paradigm: Goswami's Monistic Idealism

- A. Consciousness is the ground of all being and matter exists only as possibilities within consciousness. Thus, there is nothing but consciousness or as some might say, God is all that is. You and I are material manifestations of God as are plants, bacteria, insects, fish, animals, chairs, shirts, houses shovels, pistols, water, earth, planets and stars ad infinitum.
- B. Dualism is an illusion. The belief that the mind is distinct from the brain or that spirit is distinct from matter or that man is distinct from God is all an illusion. There is only the unified field of consciousness. Everything is but a manifestation of consciousness and therefore there is no difference in kind.
- C. Consciousness permeates and fills our being and our brain is a conduit for waves of possibility. When self focuses upon a possibility a wave collapse takes place and there is awareness of the object of the choice. The presence of awareness implies a subject-object split between the subject and the object.
- D. This apparent split is the product of the dependent co-arising of the subject that chooses and the objects of awareness. The consciousness from which both the subject and the object arise identifies with the subject pole of the dyad. This gives rise to the mistaken perception that there is a subject independent of objects. This mistake or illusion is necessary in order for experience, as we know it, to occur.
- E. The basis for this mistaken perception or illusion is self-reference not unlike the circular meaning in the statement "I am a liar." In this sentence the predicate defines the subject and the subject redefines the predicate, the predicate then redefines the subject setting up an endless oscillation. This is called a tangled hierarchy. The meaning in this statement seemingly forever eludes us.
- F. The subject-object split is an epiphenomenon. If we don't identify with the subject in the subject-object dyad we can escape the illusion. This state of consciousness is what the American mystic Franklin Merrell-Wolff called *introception*, which denotes consciousness without an object (and thus also without a subject). To enter a state of pure consciousness is to experience enlightenment or bliss consciousness.

G. The illusion of self develops as the quantum self makes choices, memories are formed, habitual responses are established and reinforced. As this process unfolds the range of free choice constricts and consciousness repeatedly collapses conditioned outcomes. Thus, personal identity is created through a conditioned pattern of perception and response or ego. What the psychic Edgar Cayce referred to in individuals as following the path of least resistance. The freedom to make creative choices is always present but seldom exercised. Understanding that we have this freedom and the exercise of it allows us to step beyond ignorance and discover our true nature.

David B. Center, PhD