

polynucleotide chains run in opposite directions. Although hydrogen bonding between other base pairs is possible, it leads to nucleotide pairs which have the wrong external geometry and do not fit into the regular double-helical structure.

This strict requirement of base pairing is responsible for the systematic replication process of DNA. Geneticists commonly assume that DNA is the carrier of the genetic information of the cell. It duplicates itself before cell division to provide each daughter cell with a complete set of DNA molecules. DNA replication involves each daughter cell with a complete set of DNA molecules. DNA replication involves strand separation, and each separated strand forms the template for the condensation of a complementary strand. This is commonly called the Watson-Crick mechanism.

Descriptions such as this of DNA and its replication mechanism are commonly given as though they have provided a complete description of the most fundamental processes of life—a final mechanical, step-by-step breakdown of these life processes into understandable chemical terms. However, this is far from true. An enormous gulf lies between the few simple chemical facts known about DNA and the actual functioning of a cell. All that science actually knows about DNA are a few relations between inanimate chemicals. The gap between this knowledge and an actual chemical understanding of life is bridged only by faith.

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Although we may imagine that the cell is nothing more than an elaborate chemical machine, we actually do not at all know how this machine works. We have no idea how the large scale actions of a cell (what to speak of a multicellular organism) can be reduced

to the reactions of molecules. Indeed, we do not even fully understand the chemical interactions of water molecules; and the operations of enzymes composed of hundreds of amino acids are certainly a mystery.³⁻⁵

The assumption that the cell is a machine running according to simple push-pull laws is, therefore, simply a matter of faith. It may be imagined that thousands of reactions of the form $A_i + B_i \rightarrow C_i$ can combine to create an elaborate chemical automaton surpassing even the most sophisticated manmade computers. However, in contemplating this analogy we should consider that even the most detailed knowledge of the intricate functioning of a computer would be incomplete unless it entailed an understanding of the programmer. Similarly, it is quite possible, in the context of current knowledge, that other laws are involved in the operation of cells that are unknown to modern chemistry. The most that can be said at present is that the knowledge of the biochemists is a knowledge of chemical reactions; it cannot be claimed that it constitutes an understanding of life.

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References:

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2. Watson, J.D. *Molecular Biology of the Gene*, p. 261.
3. See, for instance, Behe, Michael J. *Darwin's Black Box: The Biochemical Challenge to Evolution*, The Free Press, New York, 1996.
4. See also author's dialogue with Michael J. Behe: *God, Intelligent Design and Fine-Tuning: A Dialogue between T. D. Singh and Michael J. Behe*, Kolkata, 2005.
5. See also Denton, M. *Nature's Destiny: How the Laws of Biology Reveal Purpose in the Universe*, Free Press, 1998.

A UNIQUE INSIGHT INTO THE NATURE OF "KNOWING" AND OF THE CONCEPT

by

Sripad Bhakti Madhava Puri Maharaja, Ph.D.

The purpose of Hegel's *Phenomenology of Spirit* is to demonstrate that the Concept is the underlying reality or Truth that lies hidden to ordinary knowing. Once the Concept is revealed it becomes the object of scientific development in his *Encyclopedia of the Philosophical Sciences*, but because of its absolute nature the Concept and its development are identical while different simulta-



neously. On the absolute platform opposites are identical in their differences, just as the absolute value $|1|$ is the same as the absolute value $|-1|$ in mathematics. To be able to think in terms of absolute knowledge therefore one has to leave the duality of relative knowing or understanding and raise oneself to the level of dialectical unity or Reason.

Reality manifests itself with two faces: a diversity of differences, and a unity of that diversity. In other words, everything has its own identity as well as a relation to everything else. The diversity of differences are the parts, and the unity of the parts in their relation is the whole. A whole is identical throughout its entirety as a whole. For example, a cow is an identity that refers to the entirety of the animal. The head, tail, legs, etc. exist, but the entire animal is what we refer to as a cow. At the same time, the tail is not the cow. The head is not the cow. Etc. So differences are preserved despite the identity of the totality of which they are parts. This means that identity and difference can coexist simultaneously without contradiction, or despite contradiction.

Scientific thinking is analytic. This means it can take apart a whole and study its parts in their isolation from the whole. However, how does this process grasp the whole as an identity? Each part has its own identity and thus becomes a whole itself, but this is not the original whole of which it was a part. Here it is necessary to recall that there are two aspects to every being, its being for itself (its self identity) and its being for another (or its relation to other beings). If we consider the part only in its being for itself, only its self identity, then we have not really understood it in its wholeness or entirety. Thus the part can never be considered as a whole in itself because its relation to what is other than itself has been unaccounted for. Or at least we can say that the part is not a *complete* whole when considered only in its being for itself (or self identity).

Scientific analysis errs when it tries to dissect a unity without also attempting to synthesize its derivatives back into their original unity. Aristotle wisely surmised that “being for the sake of” or final causality was an essential part of every being. But modern science has failed to admit this relational aspect of being into its analytic procedure, which is by its very nature destructive of that feature. By establishing relationships between beings in terms of an external force, science fails to grasp the intrinsic relational component of beings that is essential to their actual nature.

Understanding basically involves holding differences in abstract opposition and distinction from each other. It is abstract because, despite the differences, there is really a connection and unity or identity between differences that is ignored at the level of understanding. To abstract means to extract a particular aspect of a totality and focus upon that aspect separately and independently of its overall dynamic context. It would be like taking one frame of a movie film and trying to make a whole story based upon it, completely oblivious to and independent of the story of which it was originally a part. Reason does not proceed in this way, but rather sinks itself into the totality of what is actual, so much so that what is actual is non-different from the knowing of it. Since understanding grasps only the differences in their separation and independence, such knowing is not in accord with the actuality, which also involves the unity and identity of the differences in the shape of the whole/totality. In addition, knowing is naively assumed to be immediately identical with the known, but knowing is subjective, while the known is objective. Mediation is required to bring the two sides into a unified actuality. It is only absolute knowing that dynamically unifies the distinction between knowing and what is known that understanding would otherwise hold fixed in their opposition, or naively collapse into an unmediated (immediate) identity.

It is not that understanding or distinction as such is in error, but it is the fixity of its standpoint that needs to be fluidized. At first this may seem difficult to accomplish, but from another perspective the whole procedure is very simple because it simply involves following the natural course of the movement of thought that is the actuality to be known. In any case, Hegel’s *Phenomenology of Spirit* gradually take one through the development of thought and in the process provides a chance to exercise reason and simultaneously produce the result – the Concept.

In § 58 of the *Phenomenology* Hegel writes, “What, therefore, is important in the study of Science is that one should take on one-

self the strenuous effort of the Concept.” This effort is the process of conceptual thinking. The sections § 58 – 66 of that book in large measure cover what conceptual thinking is and how it forms the underlying thread of Hegel’s entire system.

The main concern of the *Phenomenology* is the study of “knowing.” Many have tried to make out something other than philosophy as the main subject of the *Phenomenology*, giving undue importance to the Lord/Bondsman relationship, inter-subjectivity, the historical development of consciousness, or other subjects. This can be confusing for those who try to understand Hegel on the basis of secondary literature. In any case the essential point is to take up the effort of conceptual thinking that he explicitly states in § 58 as necessary for Science. To fail to acknowledge the importance of this task and turn one’s attention to other subjects that may be dealt with at the ordinary level of understanding will not lead to the absolute knowing that is Hegel’s unique contribution to Western philosophy.



Hegel

The standpoint of consciousness provides us with a unique insight into the nature of “knowing” and of the Concept. In fact, consciousness is its own Concept. This means that one can experience, quite directly, the specific nature of the Concept within one’s own self. In particular, the subject-object unity that is inherent to the structure of consciousness is readily available since we may all experience that consciousness requires a subject-object relationship. Would you be conscious if there was nothing to be conscious of – be it thoughts or objects? This correlational nature in which subject and object are co-dependent or co-existent is the indication of the concrete nature of the Concept which has the structure of consciousness preserved yet negated within it. It is a mistake to think of the Concept as an abstract subjectivity opposed to an object. The Concept in its absolute sense is not something merely subjective and abstract. The same subject-object structure that we find in consciousness can be found in the Concept as well. The difference is that consciousness provides an empirical instance of subject and object while the Concept is the subject-object relationship as pure knowing or truth. It will be necessary to understand the distinction between empirical and pure knowing. Failure to make this distinction leads to much of the confusion that accompanies the interpretation of the *Phenomenology*. Both Kant and Hegel are careful to point out this distinction between empirical and pure thought and one must take it seriously in order to gain entrance to Absolute Truth beyond the abstract relativity of the empirical.

The whole thrust of the *Phenomenology* is to demonstrate or prove that the study of knowing, of which consciousness is one form, leads us to the Concept as the actual basis or absolute truth that is itself absolute knowing. Once the underlying Concept is uncovered and grasped then the systematic development of the various moments of its self-production form the absolute Idea

that in its three phases are the subject matter of the *Encyclopedia* - Logic, Nature, Spirit.

In paragraph § 58 of the *Phenomenology* Hegel explains that attention to the Concept requires that we understand terms like being-in-itself, being-for-itself, self-identity, etc. Generally when we think of being (which is really an abstract concept) we picture in our mind something existing somewhere, i.e. some material object. This is called picture thinking or material thinking and is really a habit, i.e. something of which we are consciously unaware, just as walking becomes so habitual that we no longer pay attention to the details of balancing that were required when we first learned to walk. Because material thinking is something that we may always do, it is as deeply ingrained and unconscious as walking. Therefore an effort may be required to think in terms of pure thought itself freed from its material encrustation so that thought is with itself alone. This is the thought of thought and is the proper medium of philosophy.

Conceptual thinking must be distinguished from argumentative thinking which is really thinking that is completely detached from the actual content or even worse, a sense of superiority towards it. Argumentative thinking is unconcerned with content in the sense that it sticks to its own thoughts and ignores what is actually before it. At the same time it may only be egotism in which maintaining itself is more important than understanding the truth. Conceptual thinking, on the other hand, is the full acceptance of

what is before it as the expression of its own free thinking activity, in which it can trace the spontaneous, natural movement as the dynamic that is its own self.

The more one can remain absorbed in this inherent movement without interrupting its flow by arbitrarily bringing in creative insights or brilliant ideas from areas totally removed from the subject matter at hand, the more one will be able to focus and sustain attention on proper conceptual thinking. At first one may feel this is a restraint due to being habituated to thinking that such “creative” modes of thought are commendable. For one who thinks like that philosophy may seem to be a severe discipline. But from the perspective of the pure spontaneity of the Concept it is actually the natural expression of its (and consequently *our*) freedom. This concrete, actual freedom in the Concept or Idea, contrasted with abstract freedom *from* the Concept.

In theological terms, the Absolute Concept, or more properly Idea (unity of Concept and Reality) contains within itself consciousness and self consciousness, and therefore Personality – the Personality of Godhead. Differentiated finite beings within the Absolute also possess being for self, as well as being for other as the Concept, God, i.e. as servants of God. Only in this integral conception of self as an identity that is individual but not separate from God does one find genuine spiritual freedom or liberation from the illusion of a separate and independent material identity.

PHYSICAL WORLD AND THE WORLD BENEATH – THE BIT WORLD

by

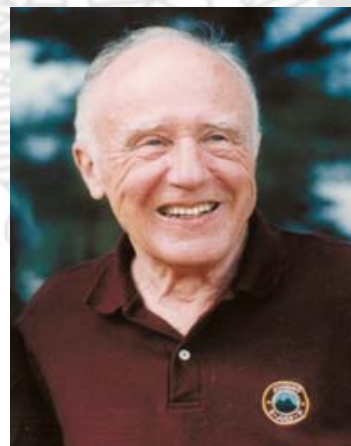
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This article is a step towards analyzing one of the most puzzling aspects of the universe – human consciousness. Mankind has taken many leaps forward in science, but how closer are we to understanding the human mind? Let us categorically state that traditional Hinduism believes the two – consciousness and mind are two different things. Mind is a byproduct out of Consciousness which is otherwise the “intelligence” or soul or the subject. Though the problem remains unsolved as yet, the author believes we are at the doorway to this esoteric knowledge. Science especially Physics is rapidly closing in on this nature of reality. Finally we will hopefully be able to settle this centuries old dispute between the “material scientific view” and a vastly different “absolute/abstract scientific view” which might otherwise be called the “quantum view”. I think I can state with absolute conviction that the science of matter (or objects) will in no way solve the problem of human mind/consciousness. The question remains, what is there other than matter/or better still did matter come from matter or something more subtle and more complex? Though the debate is still raging with most ‘old fashioned thinkers’ (for some reason this mostly seems to include the medical profession, chemists and material physicists) unwilling to let go of material structure of the universe, most recent Physical and Mathematical discoveries seems to point elsewhere. So here, the author tries to look at this innovative/radical outlook.

We start our discussion by an introduction to John Wheeler. **John Archibald Wheeler** (July 9, 1911 – April 13, 2008) was an

American theoretical physicist. One of the later collaborators of Albert Einstein, he tried to achieve Einstein’s vision of a unified field theory. He is also known for having coined the terms *black hole*, *quantum foam* and *wormhole* and the phrase “it from bit”. It is the last term which we focus on here –it from bit. In 1990, Wheeler has suggested that information is fundamental to the physics of the universe. Information as he means it a quantum foam which is really vibrating strings. According to this ‘it from bit’ doctrine, all things physical are information-theoretic in origin. Wheeler states “It from bit. Otherwise put, every ‘it’—every particle, every field of force, even the space-time continuum itself—derives its function, its meaning, its very existence entirely—even if in some contexts indirectly—from the apparatus-elicited answers to yes-or-no questions, binary choices, bits.” A very startling concept indeed, but what does it mean?



John Archibald Wheeler

This idea that information is the background of this universe is so startlingly different to 20th century mind-set of people that it is taking time to filter in. There is a large class