

EDITORIAL

World, Senses, Human Spirit: Extrapolating the Direction from the Past Through the Present and Into the Future

For human life, time is a specific monodirectional dimension forcing us into serial development and behavior. We are living in the now, but we know that we stem from yesterday and that we are facing the future; our tomorrow. With respect to bodily existence, every human seemingly has only one life. The human life can be regarded as constructing a wheel: We can imagine that year by year we fit a new spoke into that circular element, a wheel that we call *life* and that rolls us in only one direction, the future. Through developing the species for many generations of humans, many of these virtual wheels have been linked serially, one behind the other. On the basis of culture and civilization, many humans have formed swarms of such wheels for sharing work and skills. Humankind is rolling forward, also with parallel constructs of wheels but always going in only one direction: the future.

Not only the lives of contemporaneous humans but the lives of other animals, especially mammals, seemingly have a similar construct. More than 3,000 years ago, the Greek philosophers defined the human as a *zoon politicon* (i.e., a socialized animal) acquiring political abilities. Humans living in epochs of millennia before the appearance of Christ came to know that, distinct from other living beings—especially from the vertebrate animals (and more especially from the mammals)—they possessed something unique—a new, differentiated system of symbolization and communication (i.e., tools, artifacts, language, writing, and the like).

Humans at that time already were known to be equipped with spirit and soul, language, communication, memory, planning, emotions, and will. They understood that these capabilities were not found in animals; yet the biological construct of humans, with bones, muscles, nerves, and inner organs, was very similar to that of mammals, as everyone knew.

Many speculated about how the invisible spirit could enter the human body and when it did so. The Holy Bible used the picture of a bird, a dove—the Holy Spirit—penetrating into a newborn child and installing the so-called spirit, thereby allowing humans to know about God, the soul, human values, responsibility, and the like.

The Roman philosopher Lucius Aeneas Seneca (4 BC–AD 65) then defined the phrase *nihil in intellectu, quod non erat ante in sensu* (from *Naturales Quaestiones*; “nothing can enter into the intellect if it does not first pass through the gates of the senses”). In this, Seneca coined the essentials of humans’ communication with the world and fellow men within the world. We can encode from our surrounding things, facts, pictures, smells, odors, and sounds only after they have been perceived by our senses.

This really was an important philosophical step in the description of how human spirit works. All our understanding within our “now” needs information that arrives through the senses. The encoding is performed in chemical or physical dimensions and in pictures of the percept, which we have available from vision, hearing, equilibrium, taste, smell, and touch.

In an incredible leap forward by mind and thought recording, some 10,000 years ago in lower Mesopotamia, humans began picture writing what they saw, heard, smelled, and touched, as well as what they thought, valued, and understood. Their experiences now could be saved and shared not only with other contemporary humans but with future generations. This method of recording served for planning, decision making, and development regarding the future. Even now, the self is not completely understood. Currently, the notion of “self” mostly has replaced earlier conceptions of the soul.

The famous European philosophers (e.g., Hume, Locke, Berkeley, Leibniz, Goethe), who represent the development of an empirical philosophy, basically followed the ideas of Seneca. However, after the Thirty Years’ War in Europe, sometime in the second half of the seventeenth century, Gottfried von Leibniz added to the observations of Seneca a second phrase, noted in the Latin language: *nisi erat in intellectu ante* (“... nothing may enter your intellect . . . if it is not there already”)! This meant that a human can experience, think about, and understand facts only spiritually; these facts enter through the senses into the brain. This is added by Leibniz: if not there from conception, then the source of understanding already is innate within the brain.

The English philosopher John Locke (b. 1632, d. 1704 at Oates, Essex, UK) was an initiator of the enlightenment in England and France and an inspiration for the United States Constitution. His "An Essay Concerning Human Understanding" is an account of human knowledge, including the "new science" of his day, which finally led to the modern sciences. His essay, printed in four books, delineates how the realization of knowledge fundamentally is different from the phenomenon of belief. However, Locke agreed that knowledge typically is *accompanied* by belief. Knowledge is direct awareness of certain facts. Locke saw perception of some agreement or disagreement among things to be basic. Belief for him, however, consisted of taking some proposition to be true, whether or not one is directly aware of the corresponding facts.

Locke regarded ideas as mental objects. He believed that humans can regulate and govern our beliefs, forming capacities with a mental goal of getting things right. He also thought that the human mind at birth is a *tabula rasa* (blank tablet). In book four of his essay, he launched his famous attack on innate ideas and innate knowledge: To wit, the mind uses its innate capacities to work on material presented to it by sensation and reflection. By the latter, he meant self-awareness.

The aforementioned famous German philosopher, mathematician, and political adviser Gottfried Wilhelm Leibniz (b. 1646 at Leipzig, Germany; d. 1716 at Hanover, Germany) formulated in his ontology: "Considering matters accurately, it must be said that there is nothing in things except simple substances and, in them, nothing but perception and appetite. Moreover, matter and motion are not so much substances or things, as they are the phenomena of percipient beings, the reality of which is located in the harmony of each percipient with itself (with respect to different times) and with other percipients."

Leibniz concluded that the basic individuals of an acceptable ontology are all "monads" (i.e., immaterial entities) who lack spatial parts and whose basic properties are a function of their perceptions and appetites. He held that each monad perceives all other monads with varying degrees of clarity, except for God, who perceives all monads with utter clarity.

The Anglo-Irish Anglican bishop, philosopher, and scientist George Berkeley (b. 1685 at Disert Castle in County Kilkenny, Ireland; d. 1753 at Oxford, England) is best known for his empiricist philosophy, which holds that everything save the spiritual exists only insofar as it is perceived by the human senses. Berkeley's first major publication was titled "Essay Towards a New Theory of Vision" (1709). Berkeley's theory of vision became something like the academically accepted view on the topic for nearly 200 years and is a

landmark work in the history of psychology. The work is devoted to three connected considerations: how we see or visually estimate the distance of objects from ourselves, the situation or place at which these objects are located, and the magnitude of such objects.

Berkeley's most famous work, "Principles of Human Knowledge" (1710), argued against the principle of Locke's abstract general ideas. He thought that some abstract ideas are impossible objects: They are not needed for either language learning or language use. His theories implied that ordinary physical objects exist only if they are perceived. Berkeley coined the phrase, *Esse est percipi!* by which he implied that it is essential that all sensible objects are capable of being perceived. To his understanding, every physical object is just a collection of sensible qualities being perceived by humans. However, there is evidence that every sensible quality also is an idea. Therefore, physical objects are just collections of sensible ideas; no idea can exist unperceived. Berkeley argued further that no one can conceive a sensible object that exists unperceived. He concluded from this that no such object can exist "without the mind."

When going back to only the important empirical philosophers of the modern age, we cannot neglect reference to the Scottish philosopher, historian, economist, and essayist David Hume (b. 1711, d. 1776 at Edinburgh, Scotland). He is known especially for his philosophical empiricism and skepticism. His most oft-cited works include "A Treatise of Human Nature" (three volumes, 1739–1740). In this treatise, he explained that philosophy "cannot go beyond experience; and any hypothesis that pretends to discover the ultimate, original qualities of human nature ought at first to be rejected as presumptuous and chimerical." Hume's treatise is very skeptical and tended to give us a notion of the imperfections and narrow limits of human understanding. He began his treatise by arguing that natural philosophers and scientists should explain how sensation works. He focused on those entities that are the immediate and only objects present to the mind. These he called *perceptions* and identified them as two kinds: impressions and ideas. Hume initially suggested that impressions are more forceful than ideas but that some ideas (those of memory) do sometimes take on enough force and vivacity to be called *impressions*. These ideas finally, then, cannot be distinguished from impressions.

The greatest German poet, novelist, playwright, and natural philosopher Johann Wolfgang von Goethe (b. 1749 at Frankfurt am Main, Germany; d. 1832 at Weimar, Germany), formulated in his scientific work a basic concept within the ontology of living beings, which he called *metamorphosis*. In biology, this means striking permanent changes of form or structure (or both) in individ-

uals after birth and continuing until death. Also, humans undergo a permanent change throughout all of life.

Only nowadays do we understand that the perpetuation of genes from one human generation to the next is made up in long, written lines that encode the program for the serial makeup of our life. We now begin to understand the so-called codones. For improving the studies of genetics today, we need also to use linguistic approaches.

There is a permanent, innate drive throughout our life toward conversions along the axis of our time. Thus, incoming new sensory percepts are dealing with permanently changing bodily structures, concepts, thoughts, and experiences. Much of science was accumulated in the new age by humans searching in science and the fine arts. As a result, the knowledge has become encyclopedic.

A European philosopher and humanist who greatly influenced the cultural and literary renaissance of the twentieth century was Jose Ortega y Gasset (b. 1883, d. 1955 at Madrid, Spain). His most famous book was *The Revolt of the Masses* (1932).

Concerning the development of fine art and modern sciences, his book, *The Dehumanization of Art* (1925), influenced Europe and Latin America enormously. For Ortega, reality is identified with his own life. For him, something is real only insofar as it is rooted and appears in his own life. He calls his own life "my self." This individual reality is also defined by the circumstances of his very personal life. The self is not an entity separate from what surrounds the individual. There is a dynamic interaction and interdependence of the self, the persons, and the things around the individual human. These and the self together constitute our reality. Because every life is a result of an interaction between the self and an individual's special circumstances, every self has a unique perspective. Truth then is based on the unique point of view from which it is determined, and no perspective is false, except that which claims exclusivity. This doctrine is known as Ortega's *perspectivism*.

Humankind has gone a long way in understanding its abilities for transferring aspects of the world through our senses into the human spirit. Also, we must extrapolate the one-way direction from the past through the present and into the future. Finally, in the twentieth century, we were able to study many important evolutionary phenomena by formulating hypotheses and testing them in experiments through our observations.

Alan M. Turing (b. 1912 in London, England; d. 1954 at Wilmslow, Cheshire, England) was an outstanding British mathematician and logician who made major contributions to mathematics and formulated the modern structure of data processing, which later was named

computer science. Konrad Ernst Otto Zuse (b. 1910 at Berlin, Germany; d. 1995 at Hünfeld, Germany) was a German engineer and pioneer of electronic data processing. In 1936, he constructed and presented the first computer, working on the bases of binary digits and running on Zuse's own computer programs. Modern data processing by means of computers and technical sensors functions as would a prosthesis to the human mind, enhancing the limited capacities of humans. The computer also is growing into the function of a mental mirror, allowing humans to study themselves and human data processing in a model with which they can experiment.

The modern electronic computer is a new tool for logical discovery. By the use of specialized programs, computers prove to be superior to humans in velocity and in the capacity of calculations, storage, and judgment capabilities. The computer can be used as a universal simulator. Through it, the world's complexity is symbolized in such a way that humans can perceive the world more quickly and the world comes closer to the individual human spirit.

Ultimately, however, the limitations that were formulated by all of the afore-mentioned philosophers (and especially by Ortega y Gasset) continue into the future. The human computer method of inquiry is useful for the study of our position within biological evolution. Even some epistemological and metaphysical concepts enter nowadays into computer modeling. A model is similar to its object in important respects but is simpler.

When extrapolating the direction of generations from the past through the present into the future, we have to accept that the perceptible complexity of the world has also set a technically produced diminutive replacement of humans (i.e., modern data processing together with its computers), which demands that even scientists must go to the roots of ethics and values in order to apply the right human direction to ongoing development.

Still, until now, we could not see where codifications other than what we are receiving through our senses are brought into our minds. Only those parts of the world that we can encode with our senses will form the stones of the mosaics for our feeling, thinking, understanding, and the like with respect to the world. On our horizon are creative and innovative bridges through the human senses into the human spirit. They run along new avenues (e.g., in the sense of Claussen's "narrative sensology"). The paths into new fields of human findings and cognition especially open other levels of knowledge for artists and scientists searching along the borders between what is known and what remains unknown.

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