

INDWELLING

Without the slightest doubt there is something through which material and spiritual energy hold together and are complementary.

—Pierre Teilhard de Chardin

According to the doctrine of Immanence, creation, the universe, could we see it as it is, would be perceived as the self-development, the self-revelation of this indwelling Deity.

—Evelyn Underhill

Spirit and Matter

WE MAY NEVER find a clearly defined bridge between the material realm and the spiritual, or the mental, realm of our world, but it appears that for humankind there is no physical mechanism closer than the EMI to constituting the part of the bridge on the material side that reaches into the mysterious gap between the two realms. The exquisitely subtle electromagnetic exchanges that are the basis for the operation of the brain reveal how proximally related may be mind and matter as well as spirit and matter. This should be sufficient testimony for the EMI's potential for serving in some linking capacity in any relation between matter and mind, or matter and spirit.

When considering the EMI in such a capacity, it is important to distinguish carefully between what is meant by mind and by spirit, because I do not wish to identify, mix, or conflate the two. The mind possesses the functional capacity to understand, think, and reason as the seat of the intellect; its province is both conscious and unconscious. Spirit is the intangible force that drives, motivates, and vivifies the soul; it is the "breath" (*ruah* in ancient Israel) of the soul. This of course requires a third definition. The soul is the essence of a person (May 1982, 32), the unique, incorporeal core that characterizes a person. It can be approximately identified with the psychological concept of the psyche.

Although it may be argued that the mind serves as a mediary between matter and spirit by virtue of the mind's consciousness of spiritual experiences, it can

also be argued that spirit and matter enjoy direct relation with each other without such a mediary. Such a direct relation is implied in many of the scriptures of major world religions as well as in the writings of the mystics who inspire those religions. Consequently, while the matter-mind and the matter-spirit linkages undoubtedly are interrelated and may be virtually impossible to disentangle, here I will attempt to treat them separately.

I also wish to emphasize that in speaking of matter and spirit, or mind, and their linkage, there is no intention of seriously espousing or even implying any kind of dualism as, for example, with Descartes, who totally divorced the realm of the physical from that of the mind). All I intend to convey is that whether there is a bridge between mind, or spirit, on the one hand and matter on the other, or whether they are part of some form of an as yet incomprehensible continuum, the EMI is at the frontier of matter with its tendrils probing toward spirit and mind, informing them and responding to them.

An alternative approach to the idea of a bridge or link would be to consider the possibility of some kind of interface between spirit, or mind, and matter. But here again, if there exists such an interface, then the domain of the EMI extends the effects of the matter it vivifies right to this frontier.

In the case of the mind, for example, whether we consider the EMI as playing a role as a possible link or helping to define an interface, it clearly plays the reciprocal roles of signalling to one's mind, both conscious and unconscious, the information it needs about the status of one's body as well as the outside world and communicating the commands of the mind to the body. Such communication has been detected for years in the many experiments involving electrodes attached to the skull, which enable the observation of changes in the brain due to thoughts and emotions.

If we now consider the spirit, again whether we conceptualize a link or an interface, the EMI is the messenger helping to provide the communication across the ill-defined domain between the material and spiritual worlds. A study that may suggest a relation between matter and spirit can be found in the pioneering work of the late Eugene d'Aquilli, who held doctorates in anthropology and medicine and was a clinical professor of psychiatry at the

University of Pennsylvania. Using appropriately placed electrodes he and his students studied the activity of specific lobes in brains of Buddhist mystics in states of meditation.¹ The changes in level of activity when the subject was in deep meditation was clearly observable (d'Aquilli and Newberg 1993; d'Aquilli 1995; Newberg et al. 1997). One interpretation of these results is that there may possibly exist some form of matter-spirit connection, by which the matter of the subject's brain and the spiritual state are coherently interactive in meditation.

The Christian Mystics and God's Immanence in Nature

From this starting point let us enlarge our consideration of the human experience of the spirit-matter relation to include any person who, in a quiet moment of awareness, senses the glow of indwelling in a communion with surrounding nature. Spiritual literature world-wide abounds with rich descriptions of such communion. I wish to cite a few examples, selected from certain religious traditions and from the thought of mystics and religious scholars, that help describe the full dimension of this indwelling. This will be useful in later comparing this dimension with the score of the EMI.

Among the Christian mystics there were a number who found in the fecundity of nature a vital medium in their pursuit of the contemplative life. In some cases it was trees that evoked a realization of God's creation, sustenance, and power. Standing before a tree with its abiding presence and stately beauty, one may even sense the vital flow of energizing nutrients it extracts from its earthly home in its slow, persistent reach for the sky. It indeed is living. As noted in chapter 1, it was a lone tree in the winter that catalyzed Brother Lawrence's conversion at the age of eighteen. He was an uneducated peasant, who, after serving in the army, was a footman for a great French family. It was not, however, until he was beyond fifty years of age that he entered the Carmelite order as a lay brother (Underhill 1961, 190). Lawrence's experience was simple, direct, intuitive, and untheological. In the tree's potential to bring forth leaves and to flower and bear fruit in the spring, he saw the providence and power of God. The effect of the experience lasted the rest of his life.

¹ In particular it was observed that the blood flow in the right inferior frontal lobe increased, while there was a decreased flow in the right inferior anterior temporal lobe and the left superior parietal lobe (Newberg et al. 1997).

The gifted painter, poet, and mystic William Blake was also remarkably sensitive to the living presence of trees. His extraordinary talent in designing his own sketches to illustrate his poetry in such powerful works as *The Songs of Innocence* and *The Book of Job* is testimony to the genius that could also see with the eye of his heart the incredible wonder of a tree. For Blake, "The tree which moves some to tears of joy is in the eyes of others only a green thing which stands in the way. . . . But to the eyes of the man of imagination, Nature is Imagination itself" (Underhill 1961, 259).

This penetrating view of the sacredness of nature for such mystics is cogently expressed by Evelyn Underhill: "The flowery garment of the world is for some mystics a medium of ineffable perception, a source of exalted joy, the veritable clothing of God" (Underhill 1961, 191). So it was with Jacob Boehme who "went out upon the green. But here he remarked that he gazed into the very heart of things, the very herbs and grass, and that actual Nature harmonized with what he had inwardly seen." So also it was with St. Rose of Lima who saw in the sway of the flowers, the rustling of the trees, the trill of the birds, and the hum of the insects, a symphony that joined her in the praise of God (Underhill 1961, 256-61).

Of all the Christian mystics perhaps the best known of nature's communicants was St. Francis of Assisi. As a young man he was a leader among his friends in many nights of revelry. One evening he gave a banquet for his friends, who responded by crowning him "king of the revellers." Later that night he slipped away, fell into a trance, and experienced a complete conversion. From that time on he lived in extreme poverty, helped the poor, and tended to lepers, all the while evincing an ebullient joy. It has been claimed that probably "no one has set himself so seriously to imitate the life of Christ and to carry out so literally Christ's work in Christ's own way." Francis's love of all nature from rocks to animals was especially intense. All creatures were his "brothers" and "sisters." In his poem, "Praises of the Creatures," he speaks of "brother Sun," "sister Moon," "brother wind," and "sister water."

His remarkable ability to converse with animate as well as inanimate nature is compellingly revealed in the well-known and touching episode with a wild wolf:



St. Francis of Assisi. 1182-1226. St. Francis had made the sign of the Cross, right so the terrible wolf shut his jaws and stayed his running and when he was bid, came gently as a lamb and laid him down at the feet of St. Francis ... and St. Francis stretching forth his hand to take pledge of his troth, the wolf lifted up his right paw before him and laid it gently on the hand of St. Francis. . . . Then quoth St. Francis, "Brother Wolf, I bid thee in the name of Jesus Christ come with me". . . And the wolf obedient set forth with him, in fashion as a gentle lamb. . . .² (from *I Moretti di S. Francesco e it Cantica del Sole*, as quoted in Underhill 1961, 260-61)

² Evidence supporting this tender story came with the discovery of a large wolf's skull near the cave where the wolf lived after being tamed by St. Francis (Underhill 1961, 261).

All of these mystics in one way or another have had the experience of intimately resonating with the vibrance of surrounding nature. Whether it is the noble grace of a tree, the whisper of grass in a gentle wind, the glory of a field of wild daisies, or the mysterious communication with an animal, it is all experienced as an abundant manifestation of God's providence and power.

Alfred North Whitehead and Pierre Teilhard de Chardin

Although they do not emphasize the role that the EMI plays, there are scholars whose religiously oriented philosophic approach to the physical phenomena of the natural world deliberately implies a spiritual indwelling and the influence of God. Leading among these are two twentieth-century religious philosophers, Alfred North Whitehead and Pierre Teilhard de Chardin.

After realizing a very successful career as a mathematician and educationist in Great Britain, Whitehead turned to philosophy and moved to the United States. He developed one of the most comprehensive formulations of metaphysics to be offered in this century, covering a spectrum of religious and scientific insight. His thought continues to engage the assiduous attention of philosophers and has engendered an entire area of religious study known as process theology.

Whitehead's concepts are especially relevant here because while he was a student at Cambridge, he became interested in the lectures on electricity and magnetism by W. D. Niven, a former pupil of James Clerk Maxwell. It was Niven who later edited the second edition of Maxwell's monumental *Treatise on Electricity and Magnetism*, which was cited in chapter 3. Whitehead decided to develop his own thought concerning the *Treatise* by choosing it as a subject for his research dissertation at Trinity College in 1884. His research and his study under Niven served as a basis for his first course of lectures at Harvard in 1924, in which he attempted a non-technical presentation of Maxwell's equations. More important, however, this thorough foundation in the principles of electromagnetism was a vital influence in the development of his philosophy of physics (Lowe 1985, 95-96).

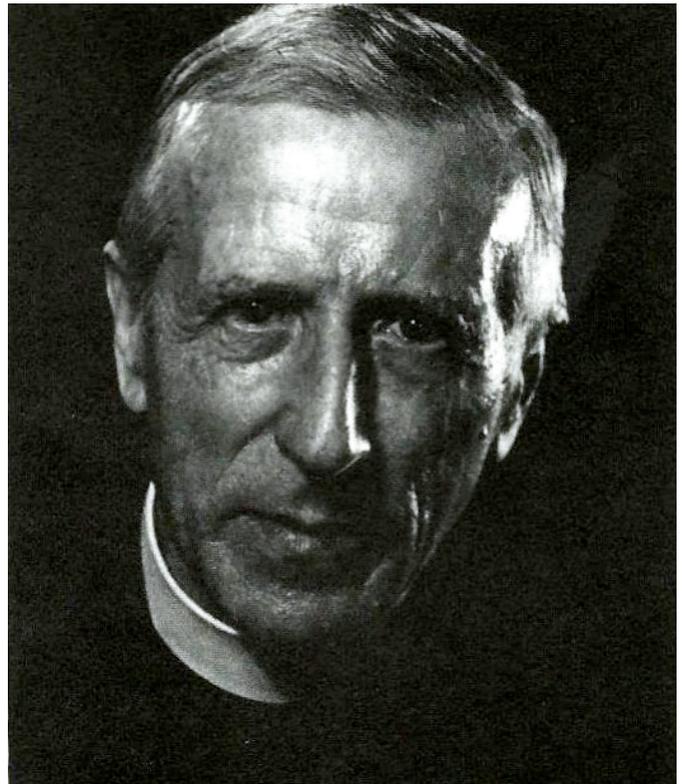


Alfred North Whitehead.

*1861-1947. Used by permission of
Harvard Archives.*

Pierre Teilhard de Chardin.

*1881-1955. Courtesy of Philippe
Halsman.*



Whitehead's insightful understanding of physics was balanced, however, by his conviction that mathematical physics should not be considering the sole means of describing nature. Direct experience and perception were of equal and complementary importance in any description of natural phenomena: "For us the glow of the sunset is as much a part of nature as are the molecules and electric waves by which the man of science would explain the phenomena" (Whitehead 1920, 29). Undoubtedly the subjective sensitivity apparent in this viewpoint helped inform the religious aspects of his philosophy.

Accordingly, a persistent theme that characterizes much of Whitehead's thought is the intimacy and immediacy with which sense and perception relate with nature in a dynamic, advancing process. His metaphysical system is replete with subjective metaphors that convey his conviction that the natural world is propagated by irreducible events or elements of experience called "actual occasions" (Whitehead 1929, 32). This means that everything in the natural world experiences in its own way, different from the way humans experience. Of particular relevance here is the fact that Whitehead maintained that "our present epoch is dominated by a society of electromagnetic occasions" (Whitehead 1978, 98).

A principal feature of the religious aspect of his thought is his contention that God does not determine but lures or influences the process of the becoming of an actual occasion (Whitehead 1926, 157-58). Hence, there is a clear motif of vibrant inherence that he sees in all of nature and that characterizes a metaphysics that includes religious concepts.

The famous Jesuit scholar, Teilhard de Chardin, also pursued an interdisciplinary approach in developing his thought. Besides his voluminous work in theology, he also maintained a strong professional interest in paleontology and geology, which flourished during his explorations in China. His efforts to reconcile his concept of the evolution of humankind with Christian doctrine is still the subject of extensive study to this day (*e.g.*, Teilhard de Chardin 1968).

During World War I, Teilhard served in the French army as a stretcher bearer in a regiment of Zouaves. Throughout his service he had the uncanny ability to

emerge unscathed after passing through showers of machine-gun fire as well as artillery bombardments. His courage under fire so impressed his officers that he was awarded the Croix de Guerre and the French Legion of Honor (Corte 1961, 15).

Teilhard was convinced that a belief in evolution as a progressive process did not necessitate denial of Christianity. This was apparent early on during his studies for the priesthood: "I grow more and more conscious, less as an abstract notion than as a presence of a profound, ontological total drift of the Universe around us" (Corte 1961, 11). It was his belief in this "drift" under the influence of the Creator that provided the underlying thrust of his writing.

Teilhard saw all matter vivified in a lifelike or preconscious interaction. He spoke of the "within of things" as an inner aspect of all elements of nature: "matter is spirit moving slowly enough to be seen." So for him there was no sharp demarcation between life and nonlife. Life could not evolve unless inanimate matter possessed the potential for life, if not itself already possessing some form of primal, incipient life (Teilhard de Chardin 1959, 53ff., 71-78; Barbour 1966, 400). Here again, we find that the sense of inner divine presence permeating all of nature is abundantly expressed but in the context of an oriented evolution to ever greater levels of complexity.

Eastern Views of Sacred Immanence in Nature

While not based on the Western concept of God, another insightful view of the nature of indwelling can be found in the Taoist, Shinto, and Buddhist religious philosophies. The Tao is the gentle pervasive power that brings silent vitality to the natural world. The Tao is the way of harmony of man and woman with the vibrant serenity of enfolding nature. The Tao is the healing way of return to enlightened passivity, genuine spontaneity, and inner peace, evoking an aura of natural grace underlying the symbiosis of men and women with their world (e.g., Welch 1957; Kaltenmark 1969).³

In the Shinto tradition special objects of nature are accorded a sacred status, endowed with spirits called *kami*. Indeed, all beings, animals, plants, ancestors,

³ The Tao to Ching tells us that the Tao we experience in the natural world derives from what is called the Absolute Tao, which is timeless and ineffable, and from which all creation emerges and to which it returns.

possess spirits and can be considered potential *kami*. From ancient times a number of natural objects or phenomena have been worshipped as *kami*, such as the sun, rivers, mountains, trees, wind, and thunder. Also included are imperial ancestors, national heroes, and those of outstanding virtue. Shrines are built to be in intimate harmony with the immediate natural environs. They can be found near a mountain, river, seashore, even a large rock, or in a cave or grove of trees (Ono 1962, 7, 27).

A perception of ubiquitous indwelling is clearly implied in the concept of interpenetration of all things that characterizes the thought of some of the Mahayana Buddhist sects. For example, the great Tibetan Buddhist mystic, Lama Govinda, sees an integration of time and space effected by interpenetration in the meditative experience:

And if we speak of the space-experience in meditation, we are dealing with an entirely different dimension. . . . In this space-experience the temporal sequence is converted into a simultaneous co-existence, the side-by-side existence of things into a state of mutual interpenetration, and this again does not remain static but becomes a living continuum in which time and space are integrated. (Govinda 1969, 116ff.)

This sense of interpenetration is corollary to the fundamental Buddhist doctrine that change is the ultimate reality. Any ideas of continuity and duration are merely conceptual abstractions (Balslev 1983, 84). This in turn implies that only the moment is real, the living here and now.

Leslie Kawamura, professor of religious studies and a Buddhist scholar at the University of Calgary in Canada, succinctly expresses how the present moment is related to the reality of change: "The moment is change manifested." Thus, with a full openness to the here and now and the dynamic transience of the moment, we can realize a sense of the interpenetration of all of nature.

Immanence and Electromagnetism

Whether the world is pervaded by the living change and interpenetration of Buddhism, imbued with the grace of the Tao or Shinto, vitalized by Whitehead's actual occasions, evolving via Teilhard's matter embodying

embryonic life, or a manifestation of God's providence as seen by the Christian mystics, I believe that all of these viewpoints can be supplemented by considering the pervasive grounding afforded by the EMI. Whitehead speaks of an actual occasion "prehending," that is, grasping or appropriating a certain pattern of potentialities in its process of maturation or becoming. It is, however, the subtle interaction of electrodynamic quantum events, the multitude of mostly very low energy photons, real and virtual, that "carry out the orders" in the prehension operation.

It is the EMI that is the physical grounding of Teilhard's "within of things" and that is the physical agent utilized in effecting the thrust toward complexity, life, and consciousness that he sees in evolving nature. The ultimately sensitive communication and collective interaction, first between molecules, then between cells, and so forth, which make possible evolutionary complexity, are executed by the gentle probing action of a host of photons, real and virtual.

In Tao and Shinto it is the whole manifold of keenly sensitive electrodynamic exchanges that help give life to every rustling leaf, the petal of every flower, the mini-ecosystem of plant and animal life in a quiet pond, every bird, every squirrel, and all of us, the symbiosis of which allows us to sense the grace of encircling nature. The intimate interrelatedness sensed in the holistic experience of one's natural surroundings that is expressed by the Buddhist concept of interpenetration finds its physical underpinnings in the incessant interplay of legions of quantum photonic events.

If the natural world is an expression of God's power and providence as sensed by the Christian mystics, then the electromagnetic fields that are the physical basis for most of the phenomena in this world embody that providence. God has provided this universal grounding to activate the earth's nature, from the vital fluids that nourish Brother Lawrence's tree to the organs and brain of St. Francis's wolf.

The conceptions of God's immanence expressed by Christian mystics and by Whitehead and Teilhard,⁴ along with perceptions from the Tao, Shinto, and

⁴In the thought of both Whitehead and Teilhard, God can be seen in varying degrees as being both transcendent and immanent with respect to the world. The principal concern in here, of course, is with their views on the nature of divine immanence.

Buddhist traditions, have been selected as particularly relevant examples, all of which convey some sense of divine indwelling, which underlies the vitality in all of nature. They therefore provide a basis for the discussion in the next chapter of how this pervasive vitality may be seen in terms of an analogical relationship between the EMI and divine immanence.

Summary

Whatever interconnecting "chain" there may exist between spirit and matter, it is the EMI that is the last identifiable link on the matter side reaching out to the spirit side. One expression of the spirit-matter relation is the human experience of sensing a vibrant indwelling in one's natural surroundings. This sense of indwelling was particularly apparent in the accounts of such Christian mystics as Brother Lawrence, William Blake, Jacob Boehme, St. Rose of Lima, and St. Francis of Assisi. The religious philosophies of Alfred North Whitehead and Pierre Teilhard de Chardin, among others, systematically suggest a spiritual indwelling that in one way or another implies an influence of God on the natural world. The realization of a pervasive inner presence in nature is also quite apparent in the religious philosophies of Taoism, Shinto, and Buddhism. There is an aura of abiding natural grace in the Tao and Shinto view, and there is a sense of the "here and now" interpenetration of all nature in much of Buddhist philosophy. The physical mechanism underlying virtually all of the nature of which the foregoing mystics, religious philosophers, and Eastern sages speak, however, is the EMI.