

# A Globe, Clothing Itself with a Brain

*Author: Jennifer Cobb Kreisberg*

**An obscure Jesuit priest, Pierre Teilhard de Chardin, set down the philosophical framework for planetary, Net-based consciousness 50 years ago.**

He has inspired Al Gore and Mario Cuomo. Cyberbard John Perry Barlow finds him richly prescient. Nobel laureate Christian de Duve claims his vision helps us find meaning in the cosmos. Even Marshall McLuhan cited his "lyrical testimony" when formulating his emerging global-village vision. Whom is this eclectic group celebrating? An obscure Jesuit priest and paleontologist named Pierre Teilhard de Chardin, whose quirky philosophy points, oddly, right into cyberspace.

Teilhard de Chardin finds allies among those searching for grains of spiritual truth in a secular universe. As Mario Cuomo put it, "Teilhard made negativism a sin. He taught us how the whole universe - even pain and imperfection - is sacred." Marshall McLuhan turned to Teilhard as a source of divine insight in *The Gutenberg Galaxy*, his classic analysis of Western culture's descent into a profane world. Al Gore, in his book *Earth in the Balance*, argues that Teilhard helps us understand the importance of faith in the future. "Armed with such faith," Gore writes, "we might find it possible to resanctify the earth, identify it as God's creation, and accept our responsibility to protect and defend it."

From the '20s to the '50s, Teilhard de Chardin drafted a series of poetic works about evolution that has reemerged as a foundation for new evolutionary theories. In particular, Teilhard and his Russian counterpart Vladimir Vernadsky inspired the renegade Gaia hypothesis (later set forth by James Lovelock and Lynn Margulis): the global ecosystem is a superorganism with a whole much greater than the sum of its parts. This vision is clearly theological - suddenly everything, from rocks to people, takes on a holistic importance. As a Jesuit, Teilhard felt this deeply, and a handful of cyberphilosophers are now mining this ideological source as they search for the deeper implications of the Net. As Barlow says, "Teilhard's work is about creating a consciousness so profound it will make good company for God itself."

Teilhard imagined a stage of evolution characterized by a complex membrane of information enveloping the globe and fueled by human consciousness. It sounds a little off-the-wall, until you think about the Net, that vast electronic web encircling the Earth, running point to point through a nerverlike constellation of wires. We live in an intertwined world of telephone lines, wireless satellite-based transmissions, and dedicated computer circuits that allow us to travel electronically from Des Moines to Delhi in the blink of an eye.

Teilhard saw the Net coming more than half a century before it arrived. He believed this vast thinking membrane would ultimately coalesce into "the living unity of a single tissue" containing our collective thoughts and experiences. In his magnum opus, *The Phenomenon of Man*, Teilhard wrote, "Is this not like some great body which is being born - with its limbs, its nervous system, its perceptive organs, its memory - the body in fact of that great living

Thing which had to come to fulfill the ambitions aroused in the reflective being by the newly acquired consciousness?"

"What Teilhard was saying here can easily be summed up in a few words," says John Perry Barlow. "The point of all evolution up to this stage is the creation of a collective organism of Mind."

Teilhard's philosophy of evolution was born out of his duality as both a Jesuit father ordained in 1911 and a paleontologist whose career began in the early 1920s. While conducting research in the Egyptian desert, Teilhard was scratching around for the remains of ancient creatures when he turned over a stone, dusted it off, and suddenly realized that everything around him was beautifully connected in one vast, pulsating web of divine life. Teilhard soon developed a philosophy that married the science of the material world with the sacred forces of the Catholic Church. Neither the Catholic Church nor the scientific academy, however, agreed. Teilhard's premise, that rocks possessed a divine force, was seen as flaky by scientists and outright heretical by the church. Teilhard's writings were scorned by peers in both camps.

Throughout the '40s and '50s, the Catholic Church was on the verge of excommunicating Teilhard. But the philosopher was committed to his perspective, refusing to stop writing or to leave the Church. As his problems with the Church escalated, Teilhard became something of a cause célèbre within his small circle in Europe. The Church responded by forbidding him to publish and posting him to China, where he lived in a state of semi-exile, trekking through the Gobi desert and developing his philosophy in isolation. (His paleontological studies continued to circulate and was highly regarded.) The rest of his work was not published until after his death on Easter Sunday, 1955, when it caused a small stir in the theological world; it was read widely for only a short time. In the postmodern climate of today's theology, Teilhard is once again out of favor among theologians, evolutionary biologists, and scientists, who view his work with derision.

"Teilhard de Chardin gets too little credit for the quality of his insights," says Ralph Abraham, one of the founders of chaos theory and co-author of *The Web Empowerment Book*, a World Wide Web primer. "He was successfully deprived of his influence by the popes."

But what were the popes so afraid of? The answer's simple: evolution.

The concept of evolution was a central pillar, both intellectual and spiritual, for Teilhard's life. During his early career, before science had strong evidence for the existence of DNA, the theory of evolution was not widely accepted. Yet, Teilhard gravitated toward it, sensing that the theory would bridge his love of rocks and of God. He would later describe evolution as the "general condition to which all other theories, all hypotheses, all systems must bow and which they must satisfy henceforward if they are to be thinkable and true. Evolution is a light illuminating all facts, a curve that all lines must follow."

The meaning of evolution was as hotly debated in Teilhard's day as it is now. Some argued in the strictest Darwinian terms that evolution's primary mechanism is necessity - "survival of the fittest." Other evolutionists followed in the footsteps of Jacques Monod, the groundbreaking French biologist, who argued for a mixture of random chance and necessity. Teilhard took Monod one step further, saying that evolution was guided chance and necessity. In conclusion, this brought Teilhard to the heart of his dual heresy - if evolution is

being led, what is doing the leading? And where is it going?

By the '40s, the idea of species evolution was no longer controversial in scientific circles. But evolution was, and still is, a radical idea in religious spheres. Every Catholic schoolchild is taught that God is immutable. And every young science student knows how little God has to do with the emergence of humanity from the evolutionary ooze.

Was Teilhard implying that God evolves?

Not exactly. Teilhard's idea was more subtle, and useful for examining the implications of the fast, loose, out-of-control world we now call cyberspace.

Teilhard felt that the spark of divine life he experienced in the Egyptian desert was a force present throughout the evolutionary process, guiding and shaping it every bit as much as the material forces described by physical science. Teilhard would later codify this force into two distinct, fundamental types of energy - "radial" and "tangential." Radial energy was the energy of Newtonian physics. This energy obeyed mechanistic laws, such as cause and effect, and could be quantified. Teilhard called radial energy the energy of "without." Tangential energy, on the other hand, was the energy of "within," in other words, the divine spark.

Teilhard described three types of tangential energy. In inanimate objects, he called it "pre-life." In beings that are not self-reflective, he called it "life." And in humans, he called it "consciousness." As Teilhard began to observe the world described by science, he noticed that in certain things, such as rocks, the radial energy was dominant, while the tangential energy was barely visible. Rocks, therefore, are best described by the laws that rule radial energy - physics. But in animals, in which tangential energy, or life, is present, the laws of physics are only a partial explanation. Teilhard concluded that where radial energy was dominant, the evolutionary process would be characterized by the traditional scientific laws of necessity and chance. But in those organisms in which the tangential energy was significant, the forces of life and consciousness would lead the laws of chance and natural selection.

Teilhard then moved this insight forward. As the balance of tangential energy in any given entity grew larger, he noticed that it developed naturally in the direction of consciousness. An increase in consciousness was accompanied by an increase in the overall complexity of the organism. Teilhard called this the "law of complexity consciousness," which stated that increasing complexity is accompanied by increased consciousness.

Teilhard wrote, "The living world is constituted by consciousness clothed in flesh and bone." He argued that the primary vehicle for increasing complexity consciousness among living organisms was the nervous system. The informational wiring of a being, he argued - whether of neurons or electronics - gives birth to consciousness. As the diversification of nervous connections increases, evolution is led toward greater consciousness.

As Abraham points out, Teilhard's complexity-consciousness law is the same as what we now think of as the neural net. "We now know from neural-net technology that when there are more connections between points in a system, and there is greater strength between these connections, there will be sudden leaps in intelligence, where intelligence is defined as success rate in performing a task." If one accepts this power of connections, then the planetary neural-network of the Internet is fertile soil for the emergence of a global

intelligence.

Teilhard went on to argue that there have been three major phases in the evolutionary process. The first significant phase started when life was born from the development of the biosphere. The second began at the end of the Tertiary period, when humans emerged along with self-reflective thinking. And once thinking humans began communicating around the world, along came the third phase. This was Teilhard's "thinking layer" of the biosphere, called the noosphere (from the Greek *noo*, for mind). Though small and scattered at first, the noosphere has continued to grow over time, particularly during the age of electronics. Teilhard described the noosphere on Earth as a crystallization: "A glow rippled outward from the first spark of conscious reflection. The point of ignition grows larger. The fire spreads in ever-widening circles, he wrote, "till finally the whole planet is covered with incandescence."

His picture of the noosphere as a thinking membrane covering the planet was almost biological - it was a globe clothing itself with a brain. Teilhard wrote that the noosphere "results from the combined action of two curvatures - the roundness of the earth and the cosmic convergence of the mind."

Marshall McLuhan was drawn to the concept of the noosphere. Teilhard's description of this electromagnetic phenomenon became a touchstone for McLuhan's theories of the global "electric culture." In *The Gutenberg Galaxy*, McLuhan quotes Teilhard: "What, in fact, do we see happening in the modern paroxysm? It has been stated over and over again. Through the discovery yesterday of the railway, the motor car and the aeroplane, the physical influence of each man, formerly restricted to a few miles, now extends to hundreds of leagues or more. Better still: thanks to the prodigious biological event represented by the discovery of electromagnetic waves, each individual finds himself henceforth (actively and passively) simultaneously present, over land and sea, in every corner of the earth." This simultaneous quality, McLuhan believed, "provides our lives again with a tribal base." But this time around, the tribe comes together on a global playing field.

We stand today at the beginning of Teilhard's third phase of evolution, the moment at which the world is covered with the incandescent glow of consciousness. Teilhard characterized this as "evolution becoming conscious of itself." The Net, that great collectivizer of minds, is the primary tool for our emergence into the third phase. "With cyberspace, we are, in effect, hard-wiring the collective consciousness," says Barlow.

In introducing the idea of tangential energy - the energy of consciousness - as a primary factor in evolution, Teilhard opened the door for a new level of meaning. The history of the world, he wrote, "would thus appear no longer as an interlocking succession of structural types replacing one another, but as an ascension of inner sap spreading out in a forest of consolidated instincts." This could very well be what the Net is doing - consolidating our instincts - so that consciousness can continue to develop.

Artificial life fans take this idea one step further. They see virtual life - Teilhard's tangential energy - trying to break out of organic life into new forms. The founder of artificial life research, Chris Langton, told reporter Steven Levy that "there are these other forms of life, artificial ones, that want to come into existence. And they are using me as a vehicle for reproduction and for implementation."

According to Teilhard, this invisible virtual life has been with us since the beginning.

We now have a vehicle - the Net - that enables us to see virtual life for what it really is. It's not the 0s and the 1s - those are visible. Virtual life is, as Barlow argues, "the space between the 0s and the 1s. It's the pattern of information that is relevant. Invisible life is composed of those life forms emerging in the space between things. Cyberspace helps us see these forms by taking us past the mechanical barrier."

The global mind may be more potential than actual in 1995. As de Duve points out, if the noosphere seems laughable now, imagine how today's technology would look to our predecessors. He writes, "A merger of minds into Teilhard's noosphere remains no more than a poetic image at the present time. But so would the notion of satellite television to Lucy [an early Australopithecus hominoid] if she had been capable of conceiving this possibility. Who can tell what the future has in store?"

Teilhard warned that evolution is a slow process, beset with setbacks and reversals. We should not question the forces that are connecting our neurons, he argued; rather we should expand our own awareness and embrace our new complexity. Teilhard would readily see the Net as a necessary step along this path. At this point, the earth needs humanity to build the noosphere. As we become conscious of our group mind, a new relationship with the earth emerges. When that happens, Teilhard wrote, "we have the beginning of a new age. The earth 'gets a new skin.' Better still, it finds its soul."