PERENNIAL NETWORK

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Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information? -T.S. Eliot

E-mail network is the latest form of a perennial web for exchanging information and provoking perceptions between human beings. Individual brains interact with this lattice, which is part of culture, to forge cognitive development. Thus, symbolic thought and language are part of the cultural network.

These assertions will not be proved here. Interested readers may refer to recent writings on the evolution of consciousness. What I intend to point out is merely that with each innovation in the web, some consciousness is gained, some lost. This latest e-mail phenomenon has much in common with earlier media. Nevertheless, it must be understood on its own terms. In order to be used effectively, participants must learn how to think, feel and express themselves in this new context. They must learn how to function within its unity.

Prehuman Networks

Networking is older than humanity. In groups, apes and monkeys are known to spend significant time grooming one another. In addition to a hygienic function, removing tics, fleas, twigs from an animal's coat, social information is also being gathered and circulated. While observing the rest of the group, grooming participants are apparently noting who is doing what? To whom? For what motive? What are the structures of intrigues? Who is profiting from what behavior? Who is losing? Who is doing more than expected? Who is freeloading? Even today, gossip is one of the functions of the manicurist and the barber shop.

Human Language

The British psychologist Robin Dunbar, from primate studies, has proposed that human language evolved due to the necessity of maintaining large groups. Language permitted "social grooming" to continue when not all of the community was within sight. Thus, the first human networks probably transmitted survival information, shared experiences, gossip, and influenced opinion, all face to face. Early human networks could be thought of as using "walking books." A person who possessed knowledge or information exchanged it with another during their encounters. One who could "read" a walking book acquired the appropriate mode of perception to know under what moon to hunt (or, later, to plant), how to sense that on a certain cloudless day (against indications to the contrary) it would rain, how to master the implements of survival. Walking books taught a girl how to become a woman: a boy, a man; the origins and ethics of the community, its values, its dreams for the future.

Caves, Figurines and Speaking Wood

Networks first assumed physical form some 30,000 years ago when paintings first appeared on the walls of ice-age caves. Such artifacts continued to be produced for 20,000 years. They apparently tell stories, instruct, pass information, perhaps give esthetic pleasure or serve religious ends. Probably they provoked exceptional mental states.

During this same period carved figurines were spread across the vast width of Europe. Archeologists suggest these objects, though not messages per se, are evidence of "alliance networks," thought to provide social-links for the exchange of food between regional groups.

It seems that the first network that transported messages over large distances stored its information in carved marks on pieces of wood. Not only is modern paper made from wood, the word "book" is synonymous with wood. The English word comes from "beech," a tree whose bark may have been used to make paper. "Book" in Icelandic, Dutch, German, and Latin languages has similar roots.

Innovation Decreased, Maintenance Enhanced

Face-to-face interaction possessed the potential of passing knowledge (how to fish, say) and information (where to find the fish today). Dialogue with another made innovative learning possible. One could ask questions, explore the limits of his understanding.

Cave paintings, carved wooden messages could not retain this character. On the other hand, these artifacts preserved knowledge and information more efficiently. They outlived their makers. They could be referred to by future generations.

Writing

Writing extended the utility of "speaking wood" as networks expanded. The first evidence of writing comes from some five thousand years ago. From the region between the Tigris and Euphrates rivers: Mesopotamia, at that time. An accountant supposedly carved, into a slab of clay, symbols representing a number of sacks of grain and heads of cattle. Presumably, an exchange had been involved.

While "cuneiform writing" was expanding in Mesopotamia, other forms appeared in Egypt. The hieroglyph, literally "holy engraving," was the writing of the gods. Thoth, a stern figure, ruled writing.

More than four thousand years ago, the Chinese emperor Huang Che, after studying the heavenly bodies and interpreting bird footprints on the mud bank, was said to have invented writing. Perhaps anticipating the reduction in face-to-face exchanges and the subsequent complications in human relations, he wept throughout the night, with what the poet Wu Weiye recorded as, "much cause."

Early symbols had multiple meanings (the sign for a human's foot could signify "to stand up," "to move," "to walk," and so forth). A revolutionary innovation at the time, the practice eventually became cumbersome. When signs came to represent sounds, alternative perceptions apparently appeared. Different thoughts, manners of expression, media for communication could be developed.

Three thousand years ago, the Phoenician consonants made up an alphabet of sounds, phonemes. Mohammed, the Prophet of Islam, (1400 years ago) received the Holy Koran, dictated directly from Allah. The holy words were transcribed in Arabic script, derived from the Phoenician.

A 12th Century manuscript describes the arduous task of preserving information. "If you do not know what writing is, you may think it is not especially difficult. ... Let me tell you that ... it destroys your eyesight, bends your spine, squeezes your stomach and your sides, pinches your lower back, and makes your whole body ache. ... Like the sailor arriving at the port, so the writer rejoices on arriving at the last line."

A half-century before printing appeared in Europe, the Arabs built the famed Alcazar, the royal palace of Cordoba, in whose library would be housed 400,000 manuscripts written on paper.

Direct Experience

As knowledge and information become more portable, traveled further and became more accessible to more people, attempts were made to revive direct sensory experience in the exchange of knowledge.

Twenty-two thousand years have passed since the likeness of a buffalo was faithfully depicted on the wall of a cave in Lascaux. The designers (were they artists? Priests? Men? Women? Adolescents?) have not been identified. Nor, have their precise intentions been discovered. Since such paintings were produced during thousands of years, it may be assumed that the endeavor was not a passing fancy. And, it doubtless conveyed experience. Even today witnesses are struck by the sensation of "presence" when viewing the artifacts.

In the cave-painting tradition, conscious attempts were made to store and provoke sensual experiences as well as information in the very structures that housed knowledge. In the 15th Century, the Italian architect Filippo Brunelleschi caused the church of San Lorenzo in Florence to have a vanishing point at the altar. The frescoes of biblical tales made up, as usual, "pages" of a "book" that could be read sequentially around the interior. At the same time, the very structure of the building provoked a direct experience of "infinity." Worshipers gaped in awe at the universe collapsing toward the holy tabernacle. The Italian savant Giulio Camillo Delminio introduced in the 16th Century a further innovation intended to interact with *materia prima*. In order to preserve and pass on knowledge of the divinity of inner-man, he conceived an elaborate "memory theater."

Behind the gates of the Seven Sephiroth of the super-celestial world rose seven semicircular tiers. The sun, moon, planets of the solar system were represented on the first level. The Gorgon Sisters, Pasiphe and the Bull, on up to Prometheus, who had placed man upright for balance and tilted his chin upwards in order that his perception be broader.

The stages overflowed with images, sculptures, talismans. Passages from the Zohar, the Hermetic Pimander, the Asclepius abounded. Cicero's rhetoric was said to have been stuffed into desks and cabinet drawers so that visitors could "access" discourses on every relevant philosophy of the time.

Reading

In spite of these "holistic" attempts to preserve human potential and exchange knowledge, reading and writing (by letters and manuscripts) became the favored form of networking. More and more portable data could be stored in smaller containers. One need not go to Chartres, to "read" the story sculpted around the great cathedral's eaves. One could refer to a scroll strung from a priest's belt. Or, a manuscript passed by hand.

While information traveled more efficiently, personal experience suffered, at first. One received the latest philosophy, recipe, an account ledger, an announcement, advertisement, but one did not necessarily *feel* how the information related to concrete circumstances, to one's personal life. The speed of gossip may have increased, but its relevance to the *sense of community* may not have.

Furthermore, the human mind in accumulating more information may have been losing other capacities, such as vivid recall, the "art of memory." Connecting sounds and images, reciting rhyme, thoughts and feelings proceeding from one image - a piece of knowledge - to another, step-by-step, until finally *esprit de finesse* seized the total experience and revealed its meaning.

What would take its place was guided oration. Until the 5th Century or so manuscripts were "heard." A document ended with *valete*, "good bye," as if the author were present, speaking to the audience. Even today wills and testaments continue to be read aloud. Students in the United States may "Audit" (hear) a course in the university. At Oxford, one still "reads," instead of teaching or studying a subject.

At first, one who could read, did not necessarily write. A scribe did not necessarily understand what he wrote. Reading involved hearing; writing, eye-hand coordination. In so doing, a person's mental circuitry causes certain brain regions to act in certain sequences. Writing may use more or less the same components but triggered differenty. Speaking arranges yet another cerebral pattern. The cognition needed in order to function fully in this complexity (integrating the separate - but complementary - functions) took time to develop.

Artificial Writing

Through the interplay between necessity, chance and enterprise (in other words, the right person - with his perceptions and materials- at the right time, in the right place), Johannes Gansfleisch Zur Laden Zum Guttenberg, a goldsmith from Mainz, adapted a Rhenish winepress to produce the first "artificial writing," that is, printing, in Europe. Technology: the collaboration of a typemold that could be adjusted by letter and an ink that could be lifted up on the metal typeface and imprinted on paper, produced the first book in the mid-15th Century.

By the beginning of the 16th Century, some 8,000,000 books were said to have been produced. By the end of the 18th Century the French poet Stéphane Malarmé (who elucidated the insight that "book" could be a metaphysical object) could state, without unduly raising eyebrows, "que tout, au monde, exist pour aboutir á un livre."

The Presense of "Presense"

Thus, books also came to possess the ability to provoke direct experience. Indeed, the American professor of contemporary art Johanna Drucker notes that books, particularly those constructed by artists, may be "auratic objects." That is, they may possess an air of power about them, an aura, and may "generate a mystique, a sense of charged presence."

In merely reading, one may or may not perceive this presence. One knows that the words and the meaning of a sentence both belong to the sentence. But words are experienced through the sense of sight; meaning is not. Weight, smell, texture, sounds of opening and turning pages, the place where reading takes place may modify meaning, may alter the object's "presence."

An intention to let the experience teach one how to understand the medium (book) was involved. The physician and brilliant author Lewis Thomas noted how intention may be all one has, initially. He recalls the early days of medicine: "The doctor has arrived at his diagnosis. He knows the name of the child's illness. He understands the pathology. And how the disease will likely run its course. He has explained everything to the parents and now he practices the 'ancient art of medicine,' that is, he is *there*, contributing his presence, providing hope, intention."

In the case of printing, it was thought to be an extension of handwriting: faster, more economical, and a product that rivaled the calligrapher's. It was part of the network's story of producing information rapidly and inexpensively. As such, the subjective experience, that included visual and tactile pleasure as well as spontaneous aesthetic insight (such as from a direct encounter with art) was diminished. Initially, the sense of one's thoughts and feelings - elicited from reading - was doubtless confused. One had to *learn* how to sense his or her relation to the phenomenon as a whole, how to listen, what to feel, how to speak.

By the 19th Century such a sensibility had been achieved. The medium had influenced vast cultural changes. But, so did the content. The writings of Ralph Waldo Emerson changed Gandhi's destiny, and thus, the British Empire. They so effected the influential Nietzche that he said he had to refrain from praising Emerson, as such an act would amount to praising himself. Thoreau, who lived two years in Emerson's house, left reflections that continue to influence the awareness of the planet itself. Samuel Clemens, the 19th Century novelist who was said to have "taught the American novel how to talk," influenced, for example, the Austrian psychoanalyst Otto Rank who invented modern psychotherapy. Rank's mentor was the renowned Sigmund Freud whose global influence has been attributed by some, not so much to his scientific abilities, as to his skill as a writer.

Casting the Net Further

Faster exchanges of information, through telephone and television, has further narrowed the scope of consciousness that caused the lines of hand-written letters to flow so easily: the reader to be so readily engaged, because the writer was similarly engaged.

Something lost, something gained. This electrical technology has resulted in an infinitely more powerful form of portable knowledge: the "personal electronic computer." To listen to comments about this novelty, one would think people were discussing beliefs, rather than an object. It seems the population is divided in its feelings between a complete contempt for it, on the one hand: and a religious fervor in support of it, on the other.

Nevertheless, one practical use that does not depend on opinion is the "post office," through which messages may be exchanged. Perhaps the first thing one notes is that electronic mail or e-mail is conceiving its own *pidgin* language; as if it were the product of immigrants inventing a common tongue.

In addition to a specific jargon, a different grammar is also being implemented. Sentences such as this are not uncommon: "Have not bben deprssing time fr me becaise couldstart n-woork." If not crafted deliberately, why was this phrase left to stand? Such a big hurry ot snd suuch jimprtant informaton?

In South America we also have e-mail networks. Irrelevancy and banality appears to be a cross-cultural phenomenon. So, pretty much the same kind of exchanges take place in Spanish or Portuguese as in English in the Anglo-American networks.

Several correspondents, who have never been heard from before, suddenly announce that they "will be away from their computers for a few weeks" and will not be able to attend to messages. Others mention that they are glad to be "back on line." Someone requests confirmation that he is connected to the network and that his messages are being received. Another responds, "Yes. You are connected." The only content in these communications seems to be the Pleistocene calls of our early ancestors, "I am here. Are you?" And for some modern information foragers perhaps there need be no further nor grander intent. Maybe they just like to get settled-in. It may be the electronic equivalent of sitting on the porch whittling and spitting into the geraniums.

On the other hand, some messages are ominous. For example, the warnings: "If you receive a message titled Such-and-Such, don't download it, it could wipe out your hard-disk." Even worse are the urban legends that continually circulate. Example: "Beware. A merchant on a business trip went into a hotel cocktail lounge, accepted a drink from a friendly stranger.

The next thing he knew, he woke up in a bathtub full of ice-cubes to find that his kidneys had been 'harvested.' " The e-mail writer swears the story is true. She heard it from her husband who has a friend in the fire department.

Chain-letters, sent through electronic communication, have multiplied their nuisance power. Just a simple couple of clicks on one's "mouse" can send them on and irritate friends. Generous people who preserve "the chain" are promised to win the lottery. Stingy people who "break" it by not passing the message to ten more people may look forward to eternal torment. If they suddenly remember and mend their negligent ways, their suffering instantly vanishes.

E-mail networks maintain peculiar relationships between correspondents. The American novelist Kurt Vonnegut calls e-mail "spooky." And there is something to be said for this characterization. In addition to the tendency toward self-promotion, one-up-man ship, and banality, another surprising aspect of e-mail networks is the intensity of haggling, name-calling, rudeness, and aggressiveness. This is unexpected, considering that their goal is frequently, to develop "significant dialogue." It is particularly mystifying when it occurs in "international interdisciplinary dialogues" which have the best of intentions and frequently involve top-ranked academics.

Besides verifying the 19th Century French sociologist Gustav LeBon's observation that, "The decisions affecting matters of general interest come to by an assembly of men of distinction, but specialists in different walks of life, are not sensibly superior to the decisions that would be adopted by a gathering of imbeciles," what is the explanation for such exchanges?

The British psychologist Robin Dunbar calls this aggressivity "net rage." It is analogous to "road rage," the well-known phenomenon occurring in traffic: a motorist feels he has been cut-off deliberately by another and retaliates; the other reacts similarly and the violence accelerates. "Net rage," Dunbar observes, may be expressed "safe in the knowledge that our opponent cannot get at us, we feel confident escalating fights that we wouldn't dare risk in a car, never mind a face-to-face encounter."

Personally, I do not feel that Dunbar's hypothesis of safety is sufficient to totally explain this complex phenomena. I think a more comprehensive explanation would include the fact that our customary patterns of emotional reaction when applied in unfamiliar contexts become confused. I suspect that we have not had time to realize that this medium is not like anything we are already familiar with, although it appears to be.

It may be observed, for example, how often misunderstanding is the subject of exchanges. Besides hitch-hikers who grab an innocent remark merely as a vehicle to launch their personal campaign, a large number of network disputes involve participants who feel their intentions, feelings, ideas, opinions have been "misrepresented." In "putting the record straight," they often offend in return. The agony provoked by being unreconized for one's achievements, contributions, true intentions may justify re-examining Georg Hegel's emphasis on the "struggle for recognition" as a guiding human trait.

Also involved here may be a confusion over what is public and what is private communication (the subject of current legal debate in the United States and Europe). For example, one may speak as a private individual to another individual. He or she assumes, implicitly, that editing is not necessary. The conversation, as it progresses, will bring further clarity to the subject. However, in this ambiguous media, his or her words may be regarded as public discourse. In this context, not only the words, but also the intent, as well as the person's very definition of self, may be misunderstood. If not by the target of the message, by those dropping in on the proceedings. Before there is any opportunity to clarify, the sideeffects demand a new discussion even more complicated than the original.

Furthermore, not merely personal image is at stake. Individual freedom itself may depend on the society (the social medium) allowing one to act differently in public than in private and interpreting each action correctly.

Another factor. Some people have felt that an advantage of e-mail is that each person has as much time as he needs to formulate a response. Thus, not being interrupted is considered a democratic ideal. However, what may be closer to reality is that although people have more time to respond, they cannot necessarily use it constructively. And, in many cases, it might even have been better to have been interrupted. Clarification which was not achieved, may have been, by pausing and discussing before going on to the next disputable point. By trying to say everything at once, address every point, anticipate every possible rebuttal, one inevitably says too much. In this process all of one's emotions may be discharged at once: a truckload may be dumped, when only a shovel full would have been sufficient to build a normal give-and-take dialogue.

Current Electronic Mail Networks

Despite its awkward beginning and its continual stumbling, e-mail has already proven itself excellent for exchanging information rapidly and inexpensively between people. Also, it is firmly embedded in a new emphasis in international values. This emphasis is illustrated in the following examples.

Not long ago, after the death of a prominent American, the nation's president presented the grieving family an album of rare photographs of their relative. The pictures were part of the national archives. Information had risen to become a treasure as precious as gold.

On a later occasion, the president of the United States appeared at an important international meeting on Antarctica. He brought gifts for the foreign dignitaries. Unlike previous rulers of great kingdoms, he did not appear with elephants staggering under their burden of jewels and finery, a stable of matchless Arabian steeds, not even an arsenal of multimillion-dollar military devices. To demonstrate his power and generosity, the visiting monarch distributed something more rare and desirable: Information. He presented previously highly classified satellite photos of Antarctica.

It could be that information has completed its obligations as an international currency. Or it could be temporary, a sort of "tulip mania" as that which swept Holland in the 17th Century. Tulip bulbs, "of no intrinsic value," as recorded by the French historian Fernand Braudel, became so esteemed that they could be exchanged for "a new carriage, two gray horses and a complete harness." Betting shares on tulip bulbs made brokers rich and merchants poor until the whole scheme finally collapsed.

Summarizing, regardless of information's new role and unknown future, electronic communication is capable of more than merely registering and exchanging information. E-mail is another form of perennial human network. And, as with earlier forms, humans may be able to cultivate the necessary perceptions, sensibilities, abilities for it to become constructive and satisfying to them. Even so, some aspects of human experience may be sacrificed.

E-mail messages, passed between "correspondents" do not constitute a face-to-face encounter. If you were in front of me, a physical I would speak with a physical you. Our encounter would involve perceivable emotion, interpretations of meaning in gestures, reversing positions, moderating one's response to the unity of content, time, place, people, atmosphere, individual perceptions and values.

They do not constitute letter-writing, although again, there are similarities. Not the writer, nor the reader, as yet gives complete attention to both the thread of content and the human connection. A hand-written letter, a book, is complete. Turned over in the hand, the text is the unity the reader fits into. In an e-mail network the messages are – for the moment - disembodied, the unity one is striving to fit into is yet to be discovered.

Two people speaking together on a tropical beach at sunrise, at a discotheque, a basketball game, are influenced by the medium. It is still two people in relationship but the possibilities for relation, conversation, and mood are vastly different. In e-mail, it is not so much the text, as the con-text, that one must deal with at the present time. For me, e-mail is more like a second language. I interpret the symbols. But I am not touched directly nor to the same depth as I am by my native tongue. I am unable to extract precise meaning. That certain "presence," perhaps my own presence, is missing.

Human relations between e-mail participants lack consistency when changing contexts. A correspondent relates this example. "An individual whom I had found irritatingly smug [in e-mail exchanges], I found in person to be irrepressibly playful. Yet now that we have resumed our [electronic postings], the perception of irritating smugness returns and I find it increasingly difficult to recall the playfulness I experienced when conversing face to face."

Another correspondent may have discovered an attitude that may prove essential in learning how to function effectively in the electronic context. He has said about his experience in this regard, "There is such a glut of contributions it seems impossible to elbow my way in and then ... arrgh! What do I want to say? I seem to spend so much time trying to catch up that just when I feel up to speed on something, the debate moves on, sideways or somewhere else. I just don't seem quick enough ... or do I mean slow enough? I say this because sometimes I think that if I just slowed down and listened to myself a little then maybe I'd know what to say."

It may indeed be that we need to "listen to ourselves," as well as others. Just as with the "art of memory," with reading and writing, in addition to a hopeful intention, a special kind of concentration (a certain "good taste") to feel how we fit into a unity, may be essential in order to practice the "art of e-mail."

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