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The Symbolosphere, Conceptualization, Language, and Neo-Dualism

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Making Sense of the Visual – Is Google the Seventh Language?

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Abstract: The visual bias of all written or notated forms of language is examined. These include writing, math, science, computing and the Internet which together with speech form an evolutionary chain of six languages (Logan 2004b). The proposition that Google might be the seventh language is explored.

Media not only have an impact on social patterns but they also directly affect the psyche and the ways in which people think and learn. "The effects of technology do not occur at the level of opinions or concepts, but alter sense ratios or patterns of perception steadily and without any resistance (McLuhan 1964, 18)." A medium of communication creates a sensory bias, and hence a new cognitive style. Preliterate cultures existed in an acoustical world where all verbal information was processed simultaneously in real time. Literate societies, on the other hand, developed a visual bias in their perceptions because literacy involves the use of the visual faculty in which notated information is processed in a linear sequential manner letter-by-letter and word-by-word. With the electronic dissemination of information, new sense ratios are emerging in which both the visual and the acoustical come into play; the visual because of the continued use of abstract signs—the letters of the alphabet and numerals—and the acoustical because of the real-time simultaneity that instantaneous electronic communication makes possible.

Writing, in and of itself, created a visual bias, alphabetic writing stepped up this effect and print increased this bias even more. McLuhan and I explored the visual bias of Western alphabetic culture in a paper published in 1975 entitled *Alphabet Mother of Invention* (McLuhan and Logan 1975), which subsequently evolved into *The Alphabet Effect* (Logan 2004a). We considered why abstract science began in the West and not in China despite the fact that so much of technology originated in China, a paradox posed by Joseph Needham (1979) in the *Grand Titration*. I had proposed that since monotheism and codified law were unique to the West and that together they had given rise to the notion of universal law that this might explain the Needham paradox. I shared these thoughts with Marshall McLuhan who immediately pointed out that the alphabet, which served as a model for analysis, classification, coding and decoding, was also unique to the West. We (McLuhan and Logan 1975) combined our ideas and developed the hypothesis that the phonetic alphabet, codified law, monotheism, abstract science and deductive logic were ideas that originated uniquely in the West and while they were not causally linked, they were a self-supporting or autocatalytic set of ideas.

Each of the five concepts exhibits some form of visual bias. The alphabet is a purely visual medium. The original letters of the first South Sinai alphabet were actually pictograms of objects such that the initial phoneme with which the object was called was

the phoneme represented by the alphabetic sign. For example the first two letters of the Semitic alphabet, alef and beit, were represented by a cow's head and a box respectively as alef means cow and beit means house. The alphabetic signs became meaningless as other cultures used these signs to represent the words of their language and the visual forms of the signs changed.

Alef and beit became alpha and beta when the Greeks borrowed and transformed the Phoenician alphabet to suit their own language. The Romans then adapted the Greek alphabet for Latin and alpha and beta evolved into a and b. And our term for the alphabet is derived from the first two letters of the Greek alphabet alpha and beta.

Codified law, which was written down, replaced oral law. The first codified law originated in Mesopotamia, like that of Hammurabi, and was visually displayed for the public on large stone stelea for all in the community to see.

Although the monotheistic deity of Moses could not be seen and the Hebrews were forbidden to make graven images, the Law, which Moses brought down from Mount Sinai was written on the tablets with the "finger of G-d", and hence was visible. "And he gave unto Moses, when he had made an end of communing with him upon Mount Sinai, two tables of testimony, tables of stone, written with the finger of G-d. (Ex. 31:18)" The Law or the Torah is held up every Sabbath morning in synagogue for all to see. It is also commanded of the Hebrew children: "And thou shalt write them (the words of G-d) upon the posts of thy house, and on thy gates (Deut. 6: 9)." It is interesting that the visual bias that G-d commands to his children is that of literacy but not that of graven images, which was strictly forbidden. Another interesting and perhaps somewhat contradictory point is that the visual sign of circumcision was used to signify the covenant the Hebrews reached with the Almighty.

I carried away from the work on the alphabet effect (McLuhan & Logan 1975; Logan 2004a) the understanding that the way in which a language was notated could effect the way its users think and develop concepts. Notated language by which I mean writing, mathematics, science, computing and the Internet all contributed to the creation of a visual bias. In 1981 at the beginning of the post-McLuhan period microcomputers or personal computers were making their way into our offices, homes and schools. To extend McLuhan's work I embarked on a study of this new medium, which I took to be both a medium of communication and an informatics tool. It suddenly dawned on me that all forms of verbal language are both communications and informatics and hence:

Language = Communications + Informatics.

Denise Schmandt-Besserat (1992) discovered that the origin of writing and numerical notation could be traced back to the use of palpable three dimensional clay tokens which served as receipts for tributes paid to priests in the Middle East circa 8,000 to 3,000 B.C. At its very inception writing was merely an informatics tool. It was only later that it became a medium of communication. As a result of a collaboration with Schmandt-Besserat I came to the conclusion that speech, writing, mathematics, science and computing entailed both a communications and an informatics function and that each

could be considered a separate form of language because each had its own unique semantics and syntax. A chance meeting with Ilya Prigogine while visiting Schmandt-Besserat at the University of Texas in Austin led to another conclusion, namely, that these five languages form an evolutionary chain and that each new language emerged as a new level of order in response to the chaos of an information overload that arose in conjunction with the use of the earlier languages (Logan 1995). The Internet was subsequently added to this evolutionary chain of languages as the sixth language (Logan 2004b).

This line of research led me to wonder how the first language, speech, might have come into existence. I made use of Prigogine's ideas once again. I concluded that the complexity of hominid life [as detailed by Donald (1991) and represented by tool making, the control of fire, communal living around the hearth, food sharing, large-scale cooperative foraging and hunting, and mimetic communication] became so great that speech emerged as a transition from percept-based thought to concept-based thought. I further hypothesized that the first words were our first concepts and they acted as strange attractors uniting the various perceptual experiences associated with that word (Logan 2000).

The emergence of speech represented the beginning of acoustic space in which information was transmitted by sound. But there was an earlier pre-verbal stage in which information was communicated by means of what Donald (1991) calls mimetic communication consisting of the visual communication of facial gesture, hand signals and body language and the oral communication of non-verbal vocalization (grunts, screams, sighs, etc.). At first hominid communication was a mix of visual and acoustic communication. With speech the bias moved towards the acoustic but the visual element still played a part because speech retains all of the primitive visual elements of facial gesture, hand signals and body language and the primitive acoustic element of prosody, all of which animates speech and adds to its emotional content. The bias of speech is acoustic but the visual is still present. With writing the pendulum swings the other way and language loses all of (or most of) its acoustic elements and becomes a purely visual medium with the possible exception of written poetry which when read aloud or sounded out in one's head retrieves the acoustic character of oral language.

In a certain sense the content of writing is speech and but the visual medium of writing completely changes the nature of the content or the message. As McLuhan pointed out with his famous aphorism: The Medium is the Message.

The 'content' of any medium is always another medium. The content of writing is speech, just as the written word is the content of print, and print is the content of the telegraph. If it is asked, 'What is the content of speech?,' it is necessary to say, 'It is an actual process of thought, which is in itself nonverbal' (McLuhan 1964, p. 8).

Extending and updating McLuhan's insight that the content of a new medium is some older medium and incorporating my hypothesis that percept-based mimetic communication led to concept-based speech we may say, that percepts became the content of concepts, and that concepts became the content of writing, mathematics and science, and that writing, mathematics and science became the content of print, and that print the content of computing, and that computing became the content of the Internet, and that the Internet became the content of the search environment of Google.

With AV media such as the telephone, radio, TV, etc. the pendulum swung back to the acoustic (and even the tactile), which is why McLuhan suggested that electric media retrieve oral society.

A speed-up, such as occurs with electricity, may serve to restore a tribal pattern of intense involvement such as took place with the introduction of radio in Europe, and is now tending to happen as a result of TV in America. Specialist technologies detribalize. The non-specialist electric technology retribalizes (McLuhan 1964, 24).

The AV media are not languages, however, because they do not impact upon us cognitively the way speech, writing, math, science, computing and the Internet do. The six languages (perhaps now seven if we include Google) are both media of communication and concept-based languages because in addition to mediating communication they have both a unique semantics and syntax which electric media like telephone, radio and TV do not have.

Media literacy is a contradiction in terms. TV is not a visual or literate medium it is a tactile one according to McLuhan (1964). "TV is, above all, an extension of the sense of touch, which involves maximal interplay of all the senses (*ibid.*, p. 333)." During his lifetime McLuhan claimed with good reason that television was destroying literacy.

It (television) is total, synesthetic, involving all the senses. Pervaded by the mosaic TV image, the TV child encounters the world in a spirit antithetic to literacy. The TV image, that is to say, even more than the icon, is an extension of the sense of touch. Where it encounters a literate culture, it necessarily thickens the sense-mix, transforming fragmented and specialist extensions into a seamless web of experience. Such transformation is, of course, a "disaster" for a literate, specialist culture (*ibid.*, p. 334-5).

Unfortunately McLuhan did not live to see the emergence of the microcomputer and personal computing, which (to my mind) has saved literacy and is responsible for the new literary Renaissance just as the printing press produced the original Renaissance.

Let me end with an outrageous prediction, which I offer as a McLuhanesque probe that might even be half true (which according to McLuhan is a lot of truth). I am beginning to

believe that Google is the seventh language because it is a new cognitive environment with its own semantics (the sum of human knowledge) and syntax (its search grammar).

There are a number of projects to digitize books and hence make them accessible to search engines. Some day in the not too distant future we will be able to search humankind's entire store of knowledge from the comfort of a computer workstation. I predict that this will have a major impact on research and learning.

There are a number of book digitizing projects including Project Gutenberg and the Million Book Project.

Project Gutenberg began in 1971 when Michael Hart was given an operator's account with \$100,000,000 of computer time in it by the operators of the Xerox Sigma V mainframe at the Materials Research Lab at the University of Illinois. The premise on which Michael Hart based Project Gutenberg was: anything that can be entered into a computer can be reproduced indefinitely. . . what Michael termed "Replicator Technology." The concept of Replicator Technology is simple; once a book or any other item (including pictures, sounds, and even 3-D items can be stored in a computer), then any number of copies can and will be available. Everyone in the world, or even not in this world (given satellite transmission) can have a copy of a book that has been entered into a computer. (<http://www.archive.org/texts/collection.php?collection=gutenberg>)

Pioneered by Jaime Carbonell, Raj Reddy, Michael Shamos, Gloriana St Clair, and Robert Thibadeau of Carnegie Mellon University, the goal of The Million Book Project is to digitize a million books by 2005. The task will be accomplished by scanning the books and indexing their full text with OCR technology. The undertaking will create a free-to-read, searchable digital library the approximate size of the combined libraries at Carnegie Mellon University, and one much bigger than the holdings of any high school library. The pilot Thousand Book Project has already been successfully completed and can be accessed here. (<http://www.archive.org/texts/collection.php?collection=millionbooks>)

There is another project at the University of Toronto there is a project exploring the economic feasibility of using a robotic page turning device to digitize books. The ultimate goal would be to digitize everything in the public domain worldwide, as a step towards the new economic and legal agreements that will be necessary in order to digitize everything ever printed worldwide.

Some day soon in the not too distant future all the books ever printed (and those that are still in hand-written manuscript form) will be accessible to Google (or its successor). Talk about visual bias—consider the level of the visual bias that will emerge when one will be able to access and see all of human knowledge from one's computer terminal. It boggles the mind—no it googles the mind. Language extended the brain into a mind by allowing us to conceptualize and raised our cognitive capacity an order of magnitude above the level of nonhuman animals. Google will extend each individual's mind into the minds of

all those whoever lived and published. Publish or perish will be replaced with google or perish.

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