REFLECTIONS ON DICHOTOMIC DIVISIONS

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DICHOTOMIC DIVISION — an appropriate way to categorize. Yet I came to this type of classification not through the expected study of logic but through the study of the composing process, the core of my doctoral dissertation. I became so intrigued with Janet Emig's bimodal schema of students' writing (reflexive/extensive) that I began investigating bifurcation. Dr. Emig, Professor of English Education at Rutgers University, authored the pioneer study on writing as a process entitled *The Composing Processes of Twelfth Graders.*[1] As the committee chairperson for my dissertation, she nudged my interest to explore other branches of learning in my review of literature. What I found convinces me there is an internal dualism within such diverse disciplines as philosophy, anthropology, biology, linguistics, and education. Further, I am pursuaded that bifurcation patterns extend throughout the history of human thinking, permeating so deeply they seem to mirror human nature.

These notions encouraged me to invite reflection on dichotomic divisions. So that is my purpose. Generally, I will share a partial, admittedly somewhat limited, list of cross-disciplinary dichotomies (Table 1.). Specifically, I would like to suggest an interconnection between philosophy and psycho-biology by drawing upon Ernst Cassirer's dichotomy of discursive logic and creative imagination and recent research into the left and right hemispheres of the brain.

Actually, Cassirer double dichotomizes. He identifies language and myth as symbolic forms, then he divides language into discursive logic and creative imagination. To clarify: language and myth are not expressive copies, representations, suggestions, or allegorical renderings of reality. They are "organs of reality"[2] because the mind, after receiving specific impressions, conceptualizes form. Cassirer, in what Susanne K. Langer calls a "masterstroke,"[3] makes symbols constitutive, that is, residing in the mind. While images are received by the senses, symbols are created by the intellect. The application of this theory to language universalizes symbolism by making it intrinsic to humankind. Meaning is symbolically grasped naturally; it is symbolically expressed artificially. This universality accounts for human comprehension. Since human experience exists in a symbolic universe, each person is constantly dealing with self. Clearly this "symbolic system"[4] separates him or her from animals because it provides a "new dimension of reality" (Cassirer, 1944). Therefore, says Cassirer, people are

not rational animals but symbolic ones. As such, language does not express thought and ideas traditionally associated with reason, but feelings and affections, or what Cassirer calls "emotional language and poetic imagination" (1944, p. 25).

Cassirer thinks of language and myth as two imbricating shoots. Both have as their root intuition about nature, but "language does not belong exclusively to the realm of myth; it bears within itself from its very beginning, another power, the power of logic" (1946, p. 97). Langer, in her introduction to Cassirer's *Language and Myth,* explains that for Cassirer myth does not break from figurative ideas; language can and does. Language, as the symbolization of thought, produces the dual modes of discursive logic and creative imagination (fig. 1).

To establish a basis for his own theory, Cassirer explicates Usener's studies into the history of language and religion (fig. 2) Cassirer moves with Usener's definition of mythology as the science of myth, or the science of the forms of religious conception.[5]

The first phase in the evolution of theological concepts is that of "momentary deities" (Cassirer, 1946, p. 17). These impressionistic and instantaneous feelings flashing on the human mentality remained unnamed, indefinite, formless. When indefiniteness found determined form through language, "special gods" (Cassirer, 1946, p. 19) became more permanent types with names associated with specialized fields of human activity. Next, language enabled the attributes of each special god to be generalized and applied to "personal gods" (Cassirer, 1946, p. 20). These personal gods were embodied with linguistic and ontological certitude; they had both name and personality. Finally, language transcended itself by "comprehending the Divine in its totality, in its highest inward reality, and yet avoiding any particularity of name or image. Thus all mysticism is directed toward a world beyond language, a world of silence" (Cassirer, 1946, p. 74). The one God, then, is perfect formlessness—not in the vague sense of ghostliness, but in the ultimate unnameable sense of the Infinite.

The implications of Usener's theory for Cassirer lies in the interweaving of mythical and theoretical thinking. First, static concepts are replaced by dynamic ones. Cassirer applies this dynamism to language formation. He contends that words are teleological; they also move from static subjectivism to confront each person as objective reality (I – Thou). Second, Cassirer points out that, through the art of naming, each person "takes possession of the world both physically and intellectually" (1946, p. 83). This knowledge enables an awareness of his or her own inner unity. But this unity could not happen without "the concrete structures of language and myth, in which it is embodied, and from which it is afterward regained by the process of logical reflection" (1946, p. 83).

In concretizing his first dichotomy, Cassirer states that "no matter how

TABLE 1

Cross-Disciplinary Dichotomies Discussed in This Review

Suggested by	Dichotomies	
Plato	form	ideas
Aristotle	body	soul
Abelard	particular objects	universal concepts
Aquinas	reason	faith
Pomponazzi	objective truth	religious truth
Francis Bacon	mind	instincts/emotions
Descartes	matter	spirit
Hume	experience of ideas	experiences of impressions
Kant	reason	judgment
Cassirer	theoretical	mythical
Langer	discursive	presentational
Polanyi	explicit	tacit
Révész/Sapir	imitative	ontogenetic
Hippocrates	reason	sensation
Tiger	science	fancy
Jaynes	language of men	language of gods
Ornstein	left hemisphere	right hemisphere
Dickman	action mode	receptive mode
Gazzaniga	verbal	visuospatial
Bogen	propositional	appositional
I Ching	Ch'ien	K'un
Lee	lineal code	nonlineal code
Domhoff	"right is good"	"left is bad"
de Saussure	speaking	language synchrony diachrony
Bloomfield	mechanistic	mentalistic
Ogden & Richards	symbolic	emotive
Chomsky	performance	competence
Piaget	organization	adaptation
Bruner	analytic	intuitive
Vygotsky	speech	thought
Dewey	other ways of thinking	reflective thinking
Britton	transactional	poetic
Emig	extensive	reflexive

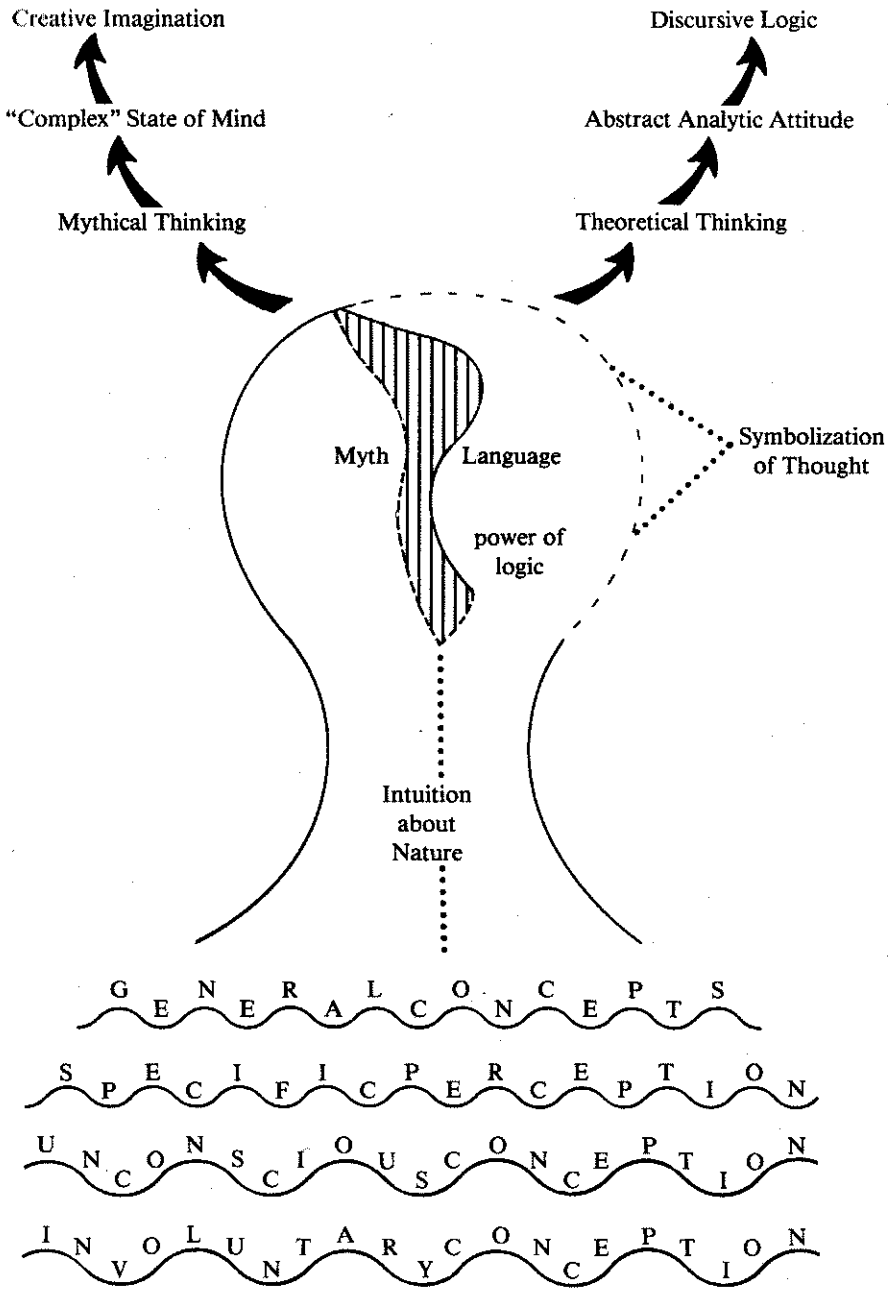

Figure 1. Cassirer's placement of language and myth within the pattern of human culture.

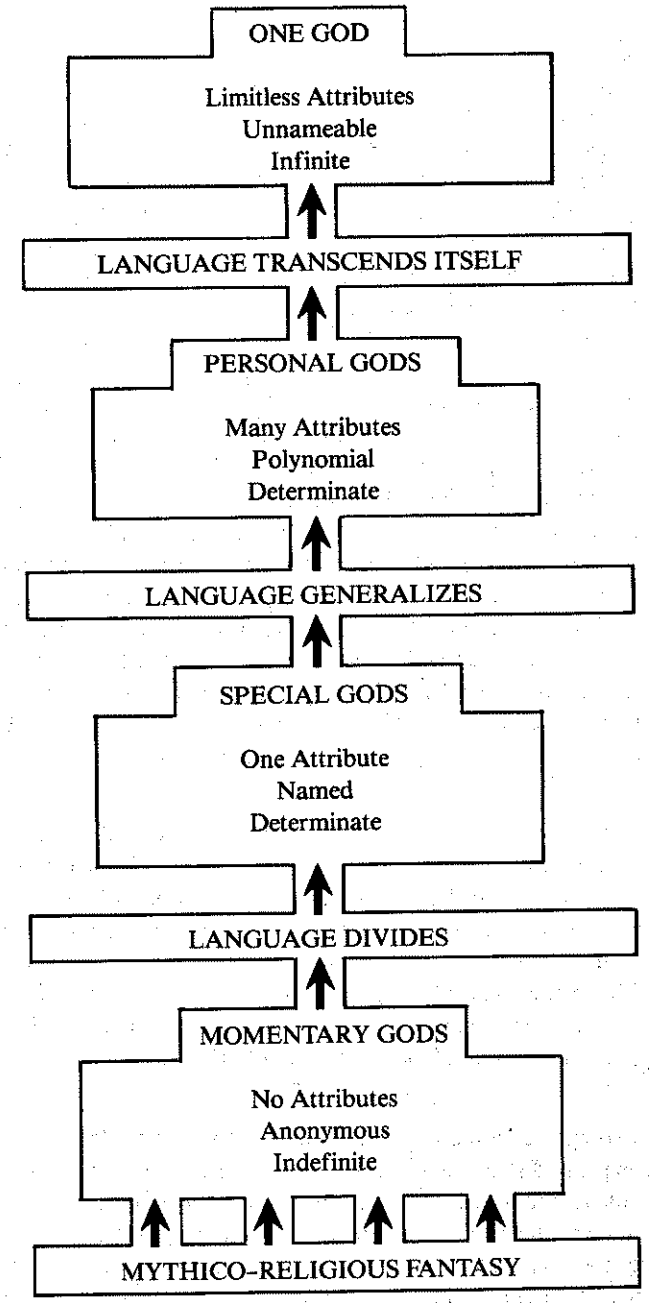

Figure 2. Cassirer's language theory applied to Usener's theory of religious conception.

widely the contents of myth and language may differ, yet the same form of mental conception is operative in both" (1946, p. 84). Cassirer calls this form "metaphorical thinking" (1946, p. 84) and quickly dismisses theories holding mythology as a result of language or language as a result of mythology as specious. Rather language and myth are reciprocal. They spring from the same symbolic formulation, the same mental activity. This mental activity is a highly concentrated excitation which produces sense impressions so lively they naturally give rise to vocal expression, verbal conceiving. This "intensification" (1946, p. 89) of sense experience is the common origin of myth and language.

In concretizing his second dichotomy, Cassirer makes an important distinction between the growth and the direction of a concept. Logical, discursive conception perceives individually, then expands, and relates. He calls this process "synthetic supplementation" (1946, p. 89). Discursive thought functions in terms of the relations it establishes. It starts with the particular then runs "the whole gamut of impressions in various directions, until these impressions are fitted together into one unified conception, one closed system (1946, p. 32). Mythical thinking, on the other hand, focuses all its forces on a single point, creating tension between the subject and its object. This causes such an overwhelming immediacy, intensity, and condensation that this subjectiveness becomes objectified. Therefore, mythical thinking functions in terms of presence and effectiveness. It compresses and distills, and Cassirer calls this "the process of distillation" (1946, p. 90) whereby essence and significance are found and extracted:

> In the realm of discursive conception there reigns a sort of diffuse light—and the further logical analysis proceeds, the further does this even clarity and luminosity extend. But in the ideational realm of myth and language there are always, besides those locations from which the strongest light proceeds, others that appear wrapped in profoundest darkness. While certain contents of perception become verbal-mythical centers of forces, centers of significance, there are others which remain, one might say, beneath the threshold of meaning (1946, p. 91).

It is perhaps as William Faulkner writes it in "Old Man," "he could not have expressed this either, it too deep, too ingrained; he had never yet had to think it into words through all the long generations of himself . . ."[6] Cassirer concludes his dichotomic divisions by explaining that discursive thought is quantitative and is directed toward the extension of concepts; mythical thought is qualitative and is directed toward the intension of concepts.

Interestingly, neurosurgical brain research, conducted primarily at the

California Institute of Technology by Roger W. Sperry and his colleagues, supports Cassirer's dichotomy. However, while Cassirer arrived at his dual modes of discursive logic and creative imagination by way of study into the history of mythico-religious thought, the psycho-biologists uncovered their theories of bimodal consciousness via experimentation.

In 1953, Myers and Sperry severed a cat's corpus callosum (the connecting nerve tissue located between the left and right hemispheres) and the optic chiasm (the crossover nerves). What they discovered was that the two brain halves continued to function independent of each other.

A mere decade but many experiments later—only this time working with grand mal epileptic patients—the Cal Tech group observed little change in the outward behavior and functioning of these "split brain" patients. They postulated then that both hemispheres cognize uniquely yet complementally and complexly. To test this hypothesis, they devised ingenious tests. Two examples of the tests given to commissurotomies ("split-brain" patients) are lucidly and succinctly described by Betty Edwards, in her book *Drawing on the Right Side of the Brain,* a publication which grew out of her doctoral studies:

> In one test, two different pictures were flashed for an instant on a screen, with a split-brain patient's eyes fixed on a midpoint so that scanning both images was prevented. Each hemisphere, then, received *different* pictures. [I must inject that because of the contralaterality of the human nervous system, the left hemisphere controls the right side of the body and vice versa.] A picture of a spoon on the left side of the screen went to the right brain; a picture of a knife on the right side of the screen went to the verbal left brain. When questioned, the patient gave *different responses.* If asked to *name* what had been flashed on the screen, the confidently articulate left hemisphere caused the patient to say, "knife." Then the patient was asked to reach behind a curtain with his left hand (right hemisphere) and pick out what had been flashed on the screen. The patient then picked out a spoon from a group of objects that included a spoon and a knife. If the experimenter asked the patient to identify what he held in his hand behind the curtain, the patient might look confused for a moment and then say, "a knife." The right hemisphere, knowing that the answer was wrong but not having sufficient words to correct the articulate left hemisphere, continued the dialogue by causing the patient to mutely shake his head. At that the verbal left hemisphere wondered aloud, "Why am I shaking my head?"

> In another test that demonstrated the right brain to be better at spatial problems, a male patient was given several wooden shapes to arrange to

match a certain design. His attempts with his right hand (left hemisphere) failed again and again. His right hemisphere kept trying to help. The right hand would knock the left hand away; and finally, the man had to *sit* on his left hand to keep it away from the puzzle. When the scientists finally suggested that he use both hands, the spatially "smart" left hand had to shove the spatially "dumb" right hand away to keep it from interfering.[7]

The conclusion seems clear. Each hemisphere, as the scientists had speculated, perceives reality idiosyncratically—a dramatic undergirding of Cassirer's contention that symbolic form, residing in the mind, provides us with "a particular way of seeing . . . [each] carries within itself its particular way and source of light" (1946, p. 11). And, as recently as last year, Monte S. Buchsbaum, Chief of the Section of Clinical Psychophysiology in the Biological Psychiatry Branch of the National Institute of Mental Health, pointed out that new developments such as the electroencephograph and special computer techniques permit the study of undamaged brains, thereby providing additional information on hemisphericity.[8] All this new evidence leads to the prevalent view that both hemispheres gather sensory data but that each hemisphere "knows" these data differently. Bogen lists some parallel ways of knowing: left-intellect, abstract, analytic, lineal, rational, and sequential; right-intuitive, concrete, holistic, nonlineal, simultaneous, and multiple.[9] Sperry puts it this way, "There appear to be two modes of thinking, verbal and nonverbal, represented rather separately in left and right hemispheres, respectively."[10] Jerre Levy states, "the left hemisphere analyses over time, whereas the right hemisphere synthesizes over space."[11] But perhaps Cassirer says it best:

> It seems only natural to us that the world should present itself to our inspection and observation as a pattern of definite forms, each with its own perfectly determinate spatial limits that give it its specific individuality. If we see it as a whole, this whole nevertheless consists of clearly distinguishable units, which do not melt into each other, but preserve their identity that sets them definitely apart from the identity of all the others. But for the mythmaking consciousness these separate elements are not thus separately given, but have to be originally and gradually derived from the whole; the process of culling and sorting out individual forms has yet to be gone through. For this reason the mythic state of mind has been called the "complex" state, to distinguish it from our abstract analytic attitude (1946, p. 13).

Dichotomic division—an appropriate way to categorize indeed.

NOTES

1. Janet Emig, *The Composing Processes of Twelfth Graders* (Urbana, Ill.; National Council of Teachers of English, 1971).
2. Ernst Cassirer, *Language and Myth* (New York: Dover Publications, 1946), p. 8.
3. Susanne K. Langer, "On Cassirer's Theory of Language and Myth," in Paul Arthur Schilpp, ed., *The Philosophy of Ernst Cassirer* (New York: Tudor Publishing Company, 1958), p. 393.
4. Ernst Cassirer, *An Essay on Man: An Introduction to a Philosophy of Human Culture* (New Haven: Yale University Press, 1944), p. 24.
5. Cassirer cites Usener: Usener, Gotternamen. *Versuch einer Lehre von der religiosen Begriffsbildung* (Bonn, 1896), p. 330; cf. esp. pp. v ff.
6. William Faulkner, *Three Famous Short Novels* (New York: Vintage, 1963), pp. 169-70.
7. Betty Edwards, *Drawing on the Right Side of the Brain* (California: J. P. Tarcher, Inc., 1979), pp. 30-31.
8. Monte S. Buchsbaum, "Tuning in on Hemispheric Dialogue," *Psychology Today*, 12 (January, 1979), 100.
9. Joseph E. Bogen, "Some Educational Aspects of Hemispheric Specialization," *U.C.L.A. Educator*, 17 (1975), 24-32.
10. Roger W. Sperry, "Lateral Specialization of Cerebral Function in the Surgically Separated Hemispheres," in F. J. McGuigan and R. A. Schoonover, eds., *The Psychophysiology of Thinking* (New York: Academic Press, 1973), pp. 209-29.
11. Jerre Levy, "Psychobiological Implications of Bilateral Asymmetry," in S. J. Diamond and J. G. Beaumont, eds., *Hemisphere Function in the Human Brain* (New York: John Wiley and Sons, 1974).