in myself or in hundreds of students that wasn't generally a higher experience than average living. Yet some will construe that a passive potency could leave one open to the forces of hell. We get back so much of what is expected that those with such fears perhaps should avoid the experience unless they work with an experienced teacher. But, for people who would like to experience the internal, it is possible, relatively easy, and rewarding. Personally, I don't see how much of what the Writings say of the internal can really be understood until it is experienced. As the Writings imply, there are many more arcana in this relatively simple experience that have not been touched upon here. Our aim was simply to return meditation to some understanding and respectability. For those who wonder what the further arcana could be, they begin with all that the Writings have to say of the difference between the internal and external man and lead towards regeneration. In the view of the Writings one could not argue that meditation is the only way of regeneration but, because of its direct lessons, it is one of the major ways.

SEMOPHONE

The Linguistic Atom

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The following article, based on a study of Indo-European word origins entitled "semophonics," espouses a generally disputed premise that in the earliest language individual sounds were the

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minimal semological units: hence the term *semophone*, coined and defined by the writer as a sound-unit of the proto-language that constituted the least semantic component of a word.

One justification for this premise is the observation that a comparative grouping of many Proto-Indo-European (henceforth abbreviated to PIE) roots by their initial phonemes has borne out an astonishing relationship of each group with basic concepts arising from the physiological, mechanical and echoic suggestions in the articulation of the sounds concerned.

As in other historical disciplines, the study of the origins of language is limited to available documented materials and hindered by the lack of earlier information. At a certain point in the analysis of historical language phenomena, we are obliged to resort to speculations aimed at formulating the psychology of language, many of which depend upon the kind of information that can be elicited from contemporary sources such as certain types of animals, children, and selected categories of adult guinea pigs.

One of the unfortunate consequences of this approach has been an abandonment of the analysis of the historical data that have accumulated through the devoted labor of several generations of enlightened scholars—we refer here to such men, among many others, as the Grimm brothers, Rask, Verner, Kluge, Feist, Meillet, Boisacq, Lidén, Malvezin, Sturdevant, Walde, Walshe—whose reconstructions of the hypothetical PIE language have endowed us with a remarkable picture of what the earliest form of our parent language must have looked like.

Reconstructed PIE root words are conventionally indicated by a preceding asterisk (*). They do not represent any actually recorded historical language form, but rather, a form which takes into account all the variations of any given root in all known languages of the family together with all known laws of phonemic evolution proven by the history of the languages concerned. For example, we know almost with certainty that the original word for *fish* had an *initial p-* rather than *f-* (cf. Latin *pisc-*).

In this discussion it would be helpful to examine the linguistic term *phoneme*. A phoneme is a minimum significant sound-element, not to be confounded with an orthographic symbol. For example, *f* and *ph* and even the *gh* in *enough* or *cough*, all represent the phoneme /f/; the *i* in *pin* and the *o* in *women* represent the same

phoneme /i/; the *sh* in *show*, the *s* in *sure* and the *ti* in *nation* all represent the same English phoneme /ʃ/.

Now the prime concern here is whether the earliest sounds of language had any meaning in themselves, or whether they only acquired meaning in their combinations with each other. The latter proposition would assign the phoneme to a strictly arbitrary position in the development of language; while the first would imply that combinations of sounds were the result of a rational ordering of already meaningful phonemic elements into more complex terms. So the real question is whether or not individual sounds in the earliest articulated speech had meanings. Hence the term *semophone*, a combination of the Greek roots *semo-* ('meaning') + *phon-* ('sound').

Although the linguistic term *phoneme* did not exist in Swedenborg's day, we need not be deterred from thinking this term in reading his statement that in the angelic language, *with which the earliest natural language was in agreement* (HH 237), "each letter of every word has some meaning in both speech and writing" (DLW 295; AR 29). The word "letter" here could be read "phoneme" because in both Latin and Hebrew, the letters correspond almost exactly with phonemes. What Swedenborg is essentially saying is that each sound-segment had its own meaning, and this he applies to human speech at a time when it was in agreement with angelic.

Of course, it is to be realized that this articulated human speech was perhaps not the most primitive method of communicating. For we recall that, according to Swedenborg, the earliest form of communication was a tacit speech of "ideas . . ." which was effected "by innumerable changes of the countenance and face, especially of the lips" (AC 607). This suggests such phenomena as the almost telepathic communication common between those who know and love each other very well—or with animals (the preadamites are characterized by Swedenborg as having been in an animal-like state [AC 286; SD 3390ff.]) which instinctively, without utterance, know each others feelings and intentions. Nevertheless, there must have been an almost parallel development of sound-signals which were ultimately responsible for articulated speech and, at the same time, some kind of gesticulative symbolism that evolved into graphic representation—not necessarily corresponding with speech sounds (cf. hieroglyphic picture writing, a relative of the ancient Hebrew letters).

An oft-repeated axiom of linguistics is the assertion that there is no such thing as a universal language, *i.e.* mode of "instinctive" human oral communication which at one time, perhaps millions of years ago, served the human species as an adequate means of social exchange through the expression of ideas. The Biblical pronouncement, "All the earth was of one lip, and their words were one" (Genesis 11:1), has found little corroboration in scientifically established verities based on diachronic linguistic studies. Almost invariably, at the outset of a treatise on linguistics or phonology, the writer will point out that the vocal tract or speech organs, obviously intended for the acts of breathing and of eating, were only fortuitously adopted by man for the speech act and that his choice of sounds was arbitrary if not accidental.

Because of the inaccessibility of original and earlier data, speculations as to the origin of language are widely regarded as being even more futile than those concerned with the substance of the earth's core or life on other planets. Many considerations have led to the postulates that: (1) language is a noninstinctive, human activity; and (2) that it is an arbitrary system of articulate oral signals developed by a particular culture to meet its own social needs.

Scholars of historical linguistics have demonstrated, however, that numerous heterogeneous language units formerly considered to be unrelated belonged, at an earlier stage, to one and the same unit, and by comparative techniques, they have even ventured to develop the "proto-" forms of the hypothetical parent language. But this tracing back of linguistic history has no more led to the "origins" of language than the study of human social history and anthropology has taught us the origins of the human species.

Proceeding from the assumption that the earliest men—perhaps not interrelated at all—existed in various independent units each of which developed its own peculiar 'arbitrary' system of oral communication, we would arrive at x number of proto-language communities. Historical techniques are rendered inadequate, through lack of sufficient data, to relate, for example, the Indo-European family of language with the Semitic one, although there are obvious cases of borrowings. Of course, one never knows what new sources of knowledge, what linguistic "missing links," may turn up unexpectedly to carry the science a step farther. McAlpin (1974) has demonstrated that Elamite and Dravidian are cognates, and these in turn have been related by Andronov (1966) to such

far-off language islands as Basque, Nubean and Korean. The Bantu tongues have some peculiar similarities to ancient Semitic, although students of both language groups are justifiably hesitant in concluding prematurely on any fundamental affinity. Such divergent forms as English *I* and Hittite *ug-* have been recognized as cousins. Hebrew *anochi,* Zulu *ngi* and Latin and Greek *ego* might very well all be related, but general evidence to establish their relationship has yet to be found. We are obliged to assume either (a) that the various language families are unrelated, or (b) that it is impossible at this point to discover their relationships.

But what is the meaning of "arbitrary" as it has been applied to the original process of adopting sound-signals? A meaning suggested by a given sound must have become associated with it through use in context and finally by convention. Is it arbitrary when a sound is thus adopted for a given meaning? Saussure's rule stated that "the bond uniting the *signifiant* with the *signifié* is arbitrary" (cf. Godel: 1957: 193). This principle is restated by Hockett in a strong form as a "universal of language": "The relation between a meaningful element in language and its denotation is independent of any physical or geometrical resemblance between the two." (1963: 2.8).

The idea of phonetic symbolism in Indo-European (and other) phonological investigation has long been discouraged, partly as a consequence of Saussure's principle and partly because of such derisive nomenclature as "bow-wow" and "ding-dong" applied to theories holding that man's first attempts at speech were merely imitative of natural sounds. Thorndike (1933) likewise took the position that vocal symbols were originally assigned arbitrary meanings; Masters (1970) calls the sound-units, or phonemes, "arbitrary," "meaningless digital components," and "discrete, meaningless components," comparing them with the genes that form larger, functional strings when combined into meaningful units.

In a recent treatment of this problem, Gamkrelidze (1974) stated that

> a concrete signatum may be expressed by any phonemic sequence admissible by the phonotactic rules of a given language. This specific property of the vertical relationship between the components of the sign is one of the factors of multilingualism. . . .

That author advanced the example of an assonant group of words,

i.e., German *Bube, Bursche, Bengel, Baby, Balg, Blage,* and explained it as a case of "phonemic allusion to the semantic proximity of the corresponding signata." It is susceptible, however, to a different interpretation—that of a basic sound-suggestion in the PIE *b/bh* phoneme. For as remarked above, certain structural patterns seem to exist in relation to the initial phonemes of PIE roots, which, arranged in their logical gradation of meanings, tend to demonstrate at least the need for review of the matter. We will return to this point.

The existence of a universal phonetic symbolism is termed as totally problematical by Brown (1959: 126), who nonetheless affirms

> that there are resemblances between sound and meaning which are apparent to men everywhere and that these have played some part in the development of all natural languages with the result that semantic rules in totally unfamiliar languages do not seem to us to be quite arbitrary.

Among those who have studied and experimented in search of sound-meanings in natural languages—and were successful to varying degrees in correlating such concepts as size, color and movement with speech sounds—were Sapir (1929), Jespersen (1922), Paget (1930), Newman (1933), Benveniste (1939), Engler (1962) and Wissemann (1954). The latter conducted tests at Heidelberg with adults in the creation of onomatopoeic words, with some interesting results.

It is possible that many attempts to discover "meaning of sounds" have been predestined to failure because of the supposition that contemporary language is natural. If no account is taken of the sound-shifts and semantic changes that words have undergone since primitive times, the experimenter is dealing with second-hand data in which an original correspondence between the sign components—whether onomatopoeic (echoic), or arising from the mechanics of the articulation or the physiological reference of the sound in question—has long ago disappeared, *e.g.* PIE *p* turned into the Germanic *f*, and PIE *bh* into the Latin *f*: hence, a *semophone* study of /f/ in a late language would be futile, as a labio-dental voiceless fricative did not exist in the primitive tongue. The *f* in *fist* or *father* is to be taken as an original *p*-sound, while that in *flame* is an original *bh*-sound. Swedenborg described the earliest language as "entirely natural" (*prorsus naturalis*) (SD 4870).

Accepting the Saussurean principle of "l'arbitraire du signe" as a partial truth, Gamkrelidze goes on to say:

> This specific property of the "vertical" relationship between the components of the sign is one of the factors of multilingualism—furthering, among other things, phonetic variability of language in diachrony.

The "phonetic variability of language in diachrony" could, in another way, be seen as a *spreading-out effect* emanating from the phonological system of the earliest or parent language as its center, in which a strict conventional relationship between *signifiant* and *signifié* might have existed on the level of phonemic components deliberately adopted to express given conceptions. In addition to the *spreading-out effect*—which might be compared to the concentric ripples sent out from the point where a stone falls into water—whereby language undergoes sound-shifts and acquires new semantic loads for old words (cf. Hockett: 1963: 2.11.2), there are, at all stages in the history of language, reversions to the primitive manner of creating new words from sound-suggestion: which, to expand the metaphor, would be like casting new stones into the water at other points. Such echoic words as *bang* and *boom* in English would serve as examples of this phenomenon—words which, on the basis of conventional etymological information, can scarcely be traced back to proto-forms.

It may well have been a lack of fine distinctions between the various modalities generative of linguistic signs that led to such devastating generalizations as that of Saussure (1967: 152), who claimed that this principle of arbitrariness of the sign "dominates the science of language." There would appear to be something unfortunate in the choice of the word "arbitrary," which comes very close to "hit-and-miss," "whimsical," "without rhyme or reason": for the adoption of sound-signs for the *signanda* was undoubtedly motivated by acceptably objective qualities in the sounds themselves. There can be little reasonable objection to the proposition that pure sounds are naturally suggestive of certain concepts.

For example, an aspirated /p'/ may quite objectively suggest any of the following notions:

a) the lips
b) propulsion
c) wind

Physiologically /p'/ suggests *the lips,* because its enunciation depends on a bilabial articulation. Mechanically, it suggests a kind of *forward thrust,* as it is the most outgoing of all sounds in speech, throwing the lips and breath forward and frontwards with some force. Finally, /p'/ echoes various *blowing sounds* in nature, such as wind. Speech sounds accordingly seem to exhibit three suggestive aspects:

I physiological
II mechanical
III echoic or imitative

It is alas not possible to go back historically farther than the "proto-forms" of the parent language. Even here we are often confronted with uncertainties due to the hypothetical nature of the ultimate data. But it would be useful to compare a few PIE root words which seem to illustrate the above categories or aspects of meaning. In a presentation such as this there is space for only a few out of hundreds of possible examples. Our first will assume that the PIE phonemes *b/bh* denote, in one of their meanings, the concept *swell, curve.* The following list shows the reconstructed PIE roots with their meanings, and some English derivatives:

*beu-	(swell)	bosom, bud, boil
*bhel-	(swell, blow)	bowl, follicle, phallic, bull (originally: "swell, protrude")
*bhlē-	(swell, blow)	blow, blast, bladder, (in)flate
*bhelgh-	(swell)	belly, bellows, bolster, belch
*bhreu(s)-	(swell)	breast, (em)bryo
*bhred	(broad)	broad
*bheug-	(swell, curved)	bow (all meanings), buxom
*bhaghu-	(elbow)	bough
*bhru-	(brow)	brow
*bhend-	(bend, bind)	bend, bind, band, bin

How the meanings of the PIE phonemes—semophones—are arrived at is a matter of some complexity but readily explainable in the above example. The articulation of *b/bh* is effected by a build-up of air pressure within the mouth that causes a *swelling* and *curving* of the labial pocket. Hence the common element of meaning (mechanical suggestion) assigned to that phoneme. This element derives further meanings from the subsequent *plosive* stage of the articulation:

swell, curve → emerge, birth, outgrowth

which has been hinted at above in connection with Gamkrelidze's example of an assonant group of words in German (*i.e.* all refer to young offspring).

As a second example we will postulate that the PIE phoneme *u/w* denotes, in one of its meanings, a *twisting motion.* The following list shows the reconstructed PIE roots with their meanings, then some English derivatives:

*wergh-	(twist)	wrestle, wrench, wrong, wrath
*wṛmis	(worm, snake)	worm, vermin
*weip-	(twist)	wave, wipe, whip, vibrate
*wendh-	(turn, wind)	wander, wand, wend
*wel-	(twist)	walk, well, wallow, (re)volve, helix
*wor-	(dizziness)	worry, vertigo
*wers-	(confuse)	worse, wurst
*weg-	(weave)	veil, wick
*webh-	(weave)	weave, web, wasp
*wrep-	(spin)	wrap
*wes-	(clothe)	wear, vest (originally: "wrap around")
*wrei-	(write)	write, riddle (originally: "make wiggly, enigmatic lines")

The "twisting" quality of *u/w* may be derived from the fact that the slight rounded opening of the lips in its enunciation, accompanied by prolonged vocalization, makes it a flowing sound (perhaps associating it with the behavior of water, as many of the *u/w* roots relate to water).

A laborious collation of hundreds of PIE roots as reconstructed by various scholars has led to some interesting indications in support of the definitions we will list below of the physiological, mechanical and echoic aspects of the ancient phonemes. Illustrations of their relevance will have to be reserved for a subsequent comprehensive presentation already under preparation. This discussion is limited to fourteen sound-signals, which do not coincide with the PIE phonemes, *i.e.* some of which include several phonemes under one symbol.

I	PHYSIOLOGICAL REFERENT
a/e	breath
u/w	fluid
m	the mouth
b/bh	the labial pocket
p	the lips

r	the oral cavity
l	the tongue
n	the nose
d/t	the teeth
s	breathing
e, i/y	refer to the palate (but there seem to be no roots descriptive of this)
g	the throat
k	the neck

II MECHANICAL SUGGESTION

a/o	origin (it is the deepest-seated or prime articulation)
u/w	flowing
m	duality, border
b/bh	swell, emerge, birth
p	forward thrust
r	roll
l	let go
n	in
d/t	point, touch (digital functions)
s	sliding contact
e	squeeze, appropriate
i/y	squeeze, eject, smile
g	stick
k	hardness

III ECHO

a/o	the pure voice
u/w	extended, howling, pleading sounds
m	muffled sounds
b/bh	explosive, babbling sounds
p	forceful blowing sounds
l	lulling sounds (?)
n	sucking, liquid sounds
d/t	sharp, tapping sounds
s	hissing, whistling sounds
g	voiced throat sounds
k	harsh throat sounds

As a final example of the semophone theory, an incumbent subbranch of a science called *semiotics*, we will analyze the articulation of *r* and consider its physiological and mechanical aspects of suggestion. There is the *r* that is produced by intermittent taps of the tongue against the alveolar ridge, as in Spanish. Then there is the vocalic *r* as in American English, produced by a concave attitude of the tongue, slightly drawn back with its blade close to the palate. This intermediate type of *r* depends upon the vocal

cords for the trilling or rolling effect. Finally there is the velar *r* as used by many French and German speakers.

The first and second of these varieties, the *frontal r* /r, ɹ/, form the oral cavity into a kind of sphere, suggestive of *roundness* which, together with the trill or vibration, evokes the idea of *rolling* and from that, of *repeating* (as a rolling object repeats its revolutions in a series) and thence of a *straight line.* Observe how these concepts appear in the meanings of the PIE roots and their derivatives listed below:

*rew	(space)	room, ream
*rebh-	(arch over)	rib
*roth-	(roll, round)	roll, round
*rē-	(count)	ratio, rate, reason
*rē-	(?property)	re(public) (cf. Latin rēs = things)
*rā-	(having many intervals, gaps)	rare
*rēi-	(flecked)	roe
Cf. Latin *re-*, French *re- ré-*, Spanish *re-* = back, again: English re(turn), re(gain), re(nder), retro, rear		
*reidh-	(ride)	road, ride, ready
*rū-	(row)	row, rudder
*reg-	(straight line)	right, (di)rect, rule, regal, reckon
*reigh-	(reach)	reach
*rā-	(ray)	radius, ray
*rā-	(root)	root, radical, (car)rot
*rep-	(stake)	rafter
*ret-	(pole)	rod, rood

Of course, the English derivatives alone are not nearly so revealing as the whole array of derivations taken from the languages of the Indo-European family, which extends to many groups, including Russian, Slavic, Sanskrit, Greek, Latin and the Romance languages, Gothic and the Germanic and Scandinavian languages, Celtic and Brethonic, and even Hittite and Tokharian.

This treatment of the subject has necessarily been restricted to the Indo-European language family and is not intended to posit a semophonic hypothesis applicable to all languages. Nevertheless it is conceivable that there are basic universal patterns shared by all the families, whose speech then became diversified by derivation and syntactic variation. In certain of his statements about the earliest human language, Swedenborg mentions Hebrew as being the closest relative. Hebrew is classified as belonging to the Semitic language family (from *Shem,* the son of Noah). Although

Semitic has not been proven related to the Indo-European languages, we suspect that a semophonic analysis of Proto-Semitic would lead to some surprising discoveries.

With a topic so enormous it is impossible in a short article to do more than indicate the general direction of the endeavor: to approach, in the maze of present-day linguistic scientifics, some principles of universality at the sub-morphemic levels of human language.

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