

Deciphering Upper Paleolithic (European): Part 1. The Basic Graphematics—Summary of Discovery Procedures

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Abstract

I propose a preliminary and tentative decipherment of a European Upper Paleolithic protolanguage, UP(E), which crystallized during the Magdalenian period, ca. 15,000 to 10,000 BC. Many attempts have been made to decode the geometric signs in the cave and portable art of Upper Paleolithic Europe. It appears that a subset of these signs have the capacity to, and in fact did, constitute a protolanguage.

Building on the symbolic studies of Alexander Marshack on Upper Paleolithic symbolism and Marija Gimbutas on Old European Neolithic symbolism, and applying the structuralist semantic techniques of A-J. Greimas, it is possible to detect a complementarity set of four basic sign-clusters (semantic fields) which constitute UP(E). UP(E) appears to consist of 'gesture-words' or 'motion-form words,' which refer to elemental processes of nature, both the natural environment without and the psychic or spiritual realm within. The four UP(E) sign clusters appear to signify: "center inward," "contact irrupting spirit energies," "sprout, grow and branch," and "flow." Syntactic pairings of UP(E) signs can generate ritual formulae and narratives of spiritual transformation (trans-formation) processes. At a higher level, UP(E) appears to refer to personifications (divinities, goddesses and gods) that preside over these ritual and natural transformation processes. Some of the meanings of the animal and anthropomorphic images in European Upper Paleolithic art, such as Venus figurines, can be decoded using this decipherment.

In a further step, it is possible to match this preliminary grapho-semantic derivation of UP(E) against a reconstruction of primordial language (PL) stem words in Foster (1978). Assuming its validity this comparison procedure results in differentiating the four basic UP(E) semes into 24 (4X6) semes, each corresponding to a canonical geometric sign. Some fifty remaining PL words appear to signify every day social and cultural activities, including semantic fields for tool making and food preparation, foraging, childcare, and social goods (family, sexuality, wealth, territorial defense).

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SECTION A. INTRODUCTION.

1. The non-figurative markings in the art of Upper Paleolithic Europe have puzzled researchers since their first discovery. André Leroi-Gourhan considered the abstract markings "the most fascinating area of Paleolithic art" (1967:136). Forbes and Crowder (1979) note that the possibility that Franco-Cantabrian geometric markings constituted an early form of writing was common among early prehistorians but fell out of favor for much of the twentieth century. "For a century or more the decipherment of Franco-Cantabrian art has been the major item of unfinished business on the agenda of archaeology and prehistory. It is now time for a concerted effort to interpret the abstract signs and to determine the nature of their relationship to representational images" (363). I have taken up this challenge and propose a preliminary decipherment of some of the European Upper Paleolithic geometric marking motifs as constituting a protolanguage, UP(E), which crystallized during the late Upper Paleolithic.

2. Many attempts have been made to decode the geometric signs in the cave and portable art of Upper Paleolithic Europe. Since the first discoveries of cave paintings in Europe a century ago, there have been two main cycles of attempts to decode the geometric signs and associated figures in EUP art. First round theorists proposed that geometric signs denoted specific concrete objects. Proponents of 'hunting magic' interpreted signs as clubs, arrows, traps, corrals, animal tracks, and wounds. Proponents of 'fertility magic' interpreted them as vulvas or phalluses. Others interpreted the signs as totemic emblems or shamanic implements, and today followers of this approach interpret geometric signs as trance 'phosphenes' or 'entoptics' (seen by the eye when eyelids shut) (Lewis-Williams and Dowson 1988). All these interpretations are based on extrinsic ethnographic analogies from recent hunter-gatherer cultures; they fail to account for much of the data, and are basically 'undecidable' and speculative.

3. Faced with this impasse, the French archaeologist, André Leroi-Gourhan (1967:136-148), drawing on interpretations of Laming-Empeire and structuralist theory and intrinsic statistical data amassed from many caves proposed that Upper Paleolithic cave art, including geometric signs and animal images, reflected a dualistic classification scheme based on the binary opposition between male (phallic) and female (vulvar) qualities or energies. Hooks, barbs, strokes and dots were 'male' and all other signs 'female.' Eventually he dropped this conclusion as too simplistic (Leroi-Gourhan 1972). This led to the second impasse.

4. During the 1970's and 80's Alexander Marshack (1972/1991, 1977, 1979) broke out of this impasse. Conducting detailed microscopic analyses of artifacts he proposed that Upper Paleolithic peoples used a variety of 'marking strategies.' Each represented "a cognitively and semantically different system" (1977:306). First, Marshack showed that some dot and line engravings were day and month counts of seasonal and lunar notation systems, while X and chevron appeared to be "symbols of a different meaning" (1972:265). Secondly, some depictions of flowers, seeds, nuts and animals appeared to be conventionalized signs associated with particular seasons or ceremonies. Third, meanders, rays, and tri-lines appear to evoke abstract processes and even the notion of process itself and belong to some sort of waterine cosmology. Fourth darts and X's appear associated with notions of animal 'killing' or 'sacrifice,' which also appear associated with religious rituals.

5. With respect to the meaning of geometric signs and associated animal figures, the current state-of-the-art is summed up by Paul Bahn (1997). He observes that archaeological evidence indicates the art is iconographic--"there seems to be a definite system or 'grammar' at work, but we do not know what it is . . . the system is not binary and is certainly far more complex" (p. 195); and "Paleolithic art . . . certainly comprises a 'vocabulary' of symbols, some of which must have had considerable information value, and certain combinations of which may have had special significance" (p. 209). In other words, Leroi-Gourhan's basic insight that some signs function in juxtapositions and pairings still stands. As noted by Sauvet, Sauvet and Włodarczyk (1977): structural operators are at work in some of the markings; it is the presence and absence of particular combinations which is revealing: in parietal signs, for example, very few combinations occur out of the range of possible signs, and only signs found in binary combinations also occur in triads of signs. While contextually deriving likely semantic meanings for several geometric signs, Marshack's approach does not address the question of syntactic operators and protolanguage, which are evident in geometric sign pairings. This is the third impasse.

6. The situation is ripe for an innovative linguistic hypothesis grounded in the intrinsic organization of the geometric signs. For the past decade I have been using more powerful techniques of linguistic and semiotic analysis, including the "structuralist semantics" of A-J. Greimas (1966; Patte 1982 and compare Güttgemann 1976 "generative poetics"), in an attempt to decipher the geometric signs (Harrod 1987a, 1987b, 1997), an attempt, which, by the way, seems in accord with Derrida's remarks on the graphematic as prior to, or equiprimordial with, the arbitrariness of the Saussurean notion of 'sign' (1976:32-33,90, 110; 1981:347f; 1988:57). In this effort, I have drawn upon the microscopic analyses and interpretations of Alexander

Marshack and the iconographic studies of Marija Gimbutas on European Neolithic symbolism. I have focused on primarily portable engraved artifacts--especially those microscopically analyzed by Marshack—rather than cave art, since the former has fewer taphonomic and recording problems. As a result of this re-examination, I have tentatively identified a core set of geometric signs which appear to be elements of a protolanguage, which crystallized during the Magdalenian period, ca. 15,000 to 10,000 BC, and I have tentatively derived a portion of its possible semantic content. This tentative decipherment is based on the internal, structural coherence of geometric sign complexes, pairings of geometric signs, and associations of signs with apparently equivalent pictorial images.

SECTION B. DISCOVERY PROCEDURE.

7. Setting aside Leroi-Gourhan's dualistic interpretation that all signs are classifiable as representing the female and male principles of creation, I set out to figure out 'what the signs really mean.' I poured over Leroi-Gourhan's chart of paired signs (1967:514) and other instances of European Upper Paleolithic paired signs (*see Appendix A*). Some of these pairs in cave art seem to be the accidental result of superpositions of imagery; others, such as two tectiforms connected by a line, seem to represent images of religious rituals or social relations. However, among the instances of paired signs, there seems to be a subset that appears to be structured in pairs by syntactic operators. This subset includes the circle, bi-line, stroke, dart, "X," claviform, branch, chevron, tri-line, and meander. I call this subset of geometric signs Upper Paleolithic European or UP(E).

8. In the process of reviewing examples of these signs, I came upon the engraved antler from Lorthet that was microscopically analyzed by Marshack (1972:223).



The 'Rosetta Stone' – branch and tri-line signs, Lorthet, Hautes-Pyrénées (line rendition by A. Marshack)

This artifact is engraved with both a pair of geometric signs and iconic imagery which itself seems to be paired with the signs. This is a Rosetta stone for my decipherment of UP(E). Dated to the Middle Magdalenian, this engraving depicts newly hatched chick heads in a row on each side of a serpent and at the right end, on either side of the snake's neck, are one "tri-line" sign and two "branch" signs. Marshack notes only "possible signs" and doesn't elaborate on the tri-line marking. Marshack notes that the serpent appears full, perhaps carrying eggs or young or recently fed; serpent and chicks suggest earth and air. The artifact's polish suggests long hand wear; it has no marks of use as a tool, and may have belonged to a shaman. The reverse side of this piece--not presented by Marshack--is engraved with what appear to be a row of chevrons or perhaps a zigzag and a row of irregular marks, possibly arcs (Chollot-Varagnac 1980:357, 47.418).

I propose that chevron, zigzag, meander, rays, arcs and tri-line constitute a distinct, coherent cluster of associated Upper Paleolithic marking motifs, one of the four subsets of UP(E) signs. Examples are found on portable art as well as rock paintings. For instance a reindeer antler polisher from Solutrean Le Placard, is engraved with two 'tri-lines' (Chollot-Varagnac 1980:65, 54.937b) (*image center*); tri-line and meander are combined in finger-drawn meanders on a deer at Altamira (Marshack 1977:pl.27b after Breuil) (*image right*).



Marshack (1977) analyzed Upper Paleolithic symbols in this cluster and showed that contextually they are associated with water, rivers, waves, streams, oceans, rain, fish, seal and other water creatures, in short, a "water cosmology". For instance, zigzags, equivalent to running chevrons, are carefully engraved inside a meander with branches, signifying streams of water converging in a river, Romanelli, Final Epigravettian (Marshack 1977:pl.41 after Blanc) (*image left*). Independently, Marija Gimbutas (1974, 1989) demonstrated that chevron and tri-

line in the Neolithic art of Europe are signs for "cosmic waters," "rain," "rain clouds," "nourishing rain, water and milk" and are associated with waterbird, snake, and fish deities, waters of creativity, and the movement and energy of the life-force. If so, this Neolithic semantics appears to be a survival of the Paleolithic semantics, and may be used to amplify it. Accepting the validity of Marshack's and Gimbutas' decodings, I propose that the overall meaning of this cluster of signs is "It flows or is flowing" (indicative) or "Flow!" (imperative, request).

9. The Marshack-Gimbutas decoding of the 'meander, zigzag' cluster is based on intrinsic examination of UP(E) graphemes and associated imagery. There are many extrinsic analogies that show analogous decodings. For instance, vertical zigzags signify rain or lightning; wavy undulating lines signify water, running water, rivers, streams; coiling spirals, springs, eddies, waves, snake, whirlwind, or ascending/descending movement in Pueblo rock art and pottery (Patterson-Rudolf 1993; note: "snakes and springs are in most cases synonymous, " p. 55) and cross-hatching or checkerboards may represent still or standing water (Alex Patterson, personal communication). Triple wavy lines signify "river" in pictographs of the Algonquian Pamunkey deer drive (Speck and Schaeffer 1950) and "water, liquid" in hieroglyphic Egyptian; "water" in Sumerian--as a double wavy line--and probably also in Proto-Elamite (Hinz 1975:111-112). The double wavy line sign is also found in the Indus Script (Parpola 1997: #208) and Old European script (Gimbutas 1991:310, 321). Among the Dogon the first beings are said to be the twins, Nummo, half human and half snake, who are the essence of the life force in all things, which is water, and they are the source of all undulating motion, the movement of life, which is represented by a spiral or by an undulating broken line, like a series of alternating arcs or a zigzag. They are also the origin of the spoken word. This force is present in "the windings of torrents, of eddies and whirlwinds, of the undulating movement of reptiles" (Griaule 1965:20, 80,). Further, three horizontal lines curving downward at either ends signifies the rainbow; vertical zigzags and concentric circles marked with chevrons represent rain, and the purpose of all these signs is that things germinate and grow (109-112).

10. It appears that a basic principle of UP(E) is that the shape of a sign is an indicator of its meaning. For example, signs such as meanders, undulating lines, zigzags, arcs, and running angles evoke semes such as flowing, waves, ripples, and meandering streams. In other words, UP(E) graphemes represent iconically their meanings. It is also likely that UP(E) used all three mediums of communication, spoken sound, written graphics, and signed gesture, and in each medium a sign's process of production was iconic to the process it signified.

11. Thus, UP(E) is not yet a "dual-patterned" language; signifier and signified are not yet purely arbitrary.

12. A second principle of UP(E) appears to be that graphemes represent processes, rather than things. This accords with Marshack's (1972) finding that Upper Paleolithic peoples employed "time-factored" thinking and representation. If so, UP(E) words may be compared to a child's first words, which are "motion-forms" (Tran 1984) or "action words" (Braunwald 1978) denoting things in process or movement. UP(E) ideograms may have had undifferentiated grammatical mood, and be capable of being read as an indicative, subjunctive or imperative depending upon usage. Since UP(E) graphemes appear predominantly in a ceremonial or religious context, I interpret them as indicatives referring to elemental processes of nature or as imperatives, which could be used as ritual injunctions or exhortations referring to spiritual life processes.

13. UP(E) signs were paired, and thus, UP(E) had a kind of proto-syntax, which will be described in more detail later.

14. The second of the paired signs on the Lorthet engraving is a "branch" sign, in this case, two branch signs. Such signs are widespread in Upper Paleolithic art.



'Branch' ideograms: A-E Lascaux; F Marsoulas; G Cougnac; H Niaux; I Isturitz; J Altamira; K El Castillo; L La Pasiega;

after A. Leroi-Gourhan (1967) by Patricia Reis

While Leroi-Gourhan referred to this type of sign as a "barbed" sign signifying 'male', if the branch sign means what its shape suggests, as I am proposing, then it means "Branch!"



The 'Chinese' horse, Lascaux, Axial Gallery,
with 'branch' signs (silkscreen print D. Mazonowicz)

It designates processes that "sprout, emerge, give birth, hatch, grow out of, grow, unfold, unfurl branches, ramify, branch." Here we are in the realm of the many kinds of natural growth and development, and especially the various metamorphoses, such as embryo, egg, hatchling; egg, pupa, chrysalis, adult; egg, tadpole, frog; and bud, blossom, fruit, seed, sprout, mature plant.

15. Note that the Lorthet engraving pairs the "branch" and "tri-line" signs with pairs of animal imagery, two rows of newly hatched chicks and a serpent, which emerges from winter hibernation and is a sign of spring, just like the newly hatched birds. The artist has expressed the same thematic meaning with two distinct modes of communication, the figurative depiction of animals and geometric ideograms. The branch sign signifies "emerge, sprout, hatch, ramify" just as does the icon of the newly hatched spring chicks (as well as the spring emergent serpent). In a similar way, the tri-line sign, which signifies a form of "flowing movement," is equivalent to the "flowing movement" of an undulating serpent. (The obverse with its serpent shape is marked with chevrons or running angles that further evoke flowing, undulating movement.) The two branch signs and one tri-line might be intended to correspond to the two rows of newly hatched chicks and the one serpent. (It might also represent a re-iteration of a seasonal ritual in which this artifact functioned.)

Marshack reads the images alone, suggesting that the baton represents "images of spring, and new life." If the iconic story matches the grapho-semantic story, each of the registers can be read in accord with their proto-syntactic pairings as: "Hatch, sprout, emerge, be born, grow out of, grow, unfurl branches, ramify, branch!" and (then) "Flow, moving with fluid spring thaw energies!" This narrative (or conditional) construction does fit both the iconic images. Birds hatch and then fly with a fluid movement; likewise serpents emerge out of the earth and then move with a zigzag or undulating movement across the surface of the earth. The first process gives rise to the second; the two together constitute one life-transformation.

16. Marshack also notices that the chick and serpent images connote creatures of the "air" and "earth" elements. Given the "tri-line" sign, I would amplify this semantics. The tri-line could have been used to represent the shamanic worldview, with its three realms of life: Upper or Sky World, Middle World, and Lower World, each with its respective spirit animals. Each world is a world of movement-forms, of self-movement, or, in other words, spirit, life energy.

By implicit association with other waterine, flow signs in its cluster, as well as by explicit combinations, such as the not infrequent "tri-line meander" combination sign (Marshack 1977 gives many examples), the tri-line evokes the fluid movement of enspirited life in each of the three realms. The tri-line life energy manifests in the flight of birds, with their flapping, undulating chevron-like wings; in the meandering, undulating movement of animals, like the deer or the serpent, on the surface of the earth; and in the undulating movement of a fish's body in the watery world below. In each realm, creatures move by fluid movement in a medium which is similarly fluid, the air with its fluid clouds and turbulent wind, the earth with its undulating surface, and the water with its undulating turbulent flow, its meandering and its ripples, swells, and waves. Each moves by a series of chevron, zigzag, undulating motions, i.e., a wave or flap of wings, or fins, or serpentine body.

The Lorthet chicks and serpent would connote two of the three worlds, perhaps air and earth; or perhaps Upper World and Lower World, and perhaps the antler itself connotes the third world, the deer in the Middle World.

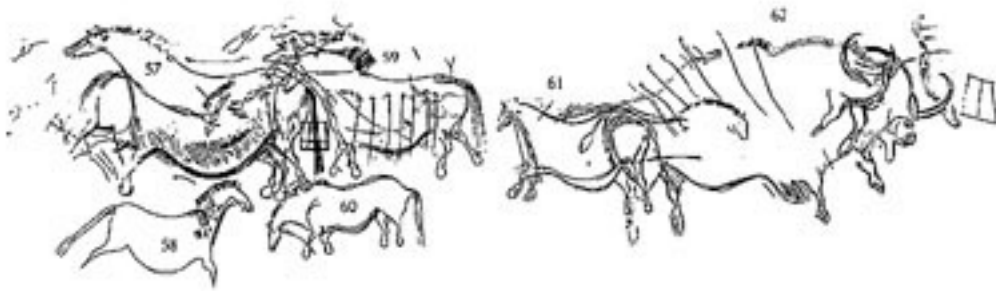
17. The Lorthet antler bone exhibits typical aspects of UP(E): (a) each sign has both iconic and semantic properties; (b) each sign is a grapheme, a symbol representing a word, a word-sentence in verbal form, a process; (c) signs can be juxtaposed or paired to generate narrematic sequences, which would appear to express the combination of two motion-forms or

processes, that is, a trans-formation; and (d) signs can be associated with purely iconic representations to reduplicate, amplify, and concretize their meaning.

18. The Lorthet engraving evidences all four types of symbolism (Pierce: 'sign'): (a) graphic linguistic sign (Pierce: 'symbol'); (b) iconic images (Pierce: 'icon'); (c) code, correlating one set of symbols with another, in this case signs and icons; and, (d) signal, if we assume the artifact was used to notify or invite others into a seasonal ritual. In addition the syntactic combination of signs encodes indexical (Pierce: index) relations of a conditional nature. Thus, UP(E) appears to constitute a comprehensive proto-language as defined by Terrance Deacon (1997).

19. European Upper Paleolithic engravings and paintings and Marshack's analyses of them suggest a third cluster of signs that belong to the UP(E) protolanguage. This cluster includes single and double stroke (what I call 'bi-lines'), dart (strokes with points), "X" and "Y" signs. Past speculation has interpreted this cluster as weapons, darts, spears, or arrows killing animals, as if they were signs of hunting magic or literal representations of animal kills. However, Marshack and others have pointed out that most animals are depicted without any such marks, and when such marks are depicted they are often just single stroke marks, bi-lines or X's without any indication of being weapons.

20. A good example of this sign cluster is the Panel of the Imprint from the Lascaux Nave, which depicts horses and a bison (Ruspoli 1987: 130).



Among the many types of signs on this panel, Horse #57 has one dart in its flank; #59, seven plus a "Y" above its rump. Horse #58 has four or more strokes on its neck and assorted other markings. Horse #60 has one "Y" sign on its shoulder and another pointing at its neck. Horse

#61 has one stroke in its back, and in the Marshack/Laming-Empeaire rendition, a bi-line on its neck. One rectangular crisscross sign at each end frames this panel.

A single bi-line motif is clearly engraved on one reindeer antler fragment and five bi-line motifs on another, Le Placard, Solutrean.



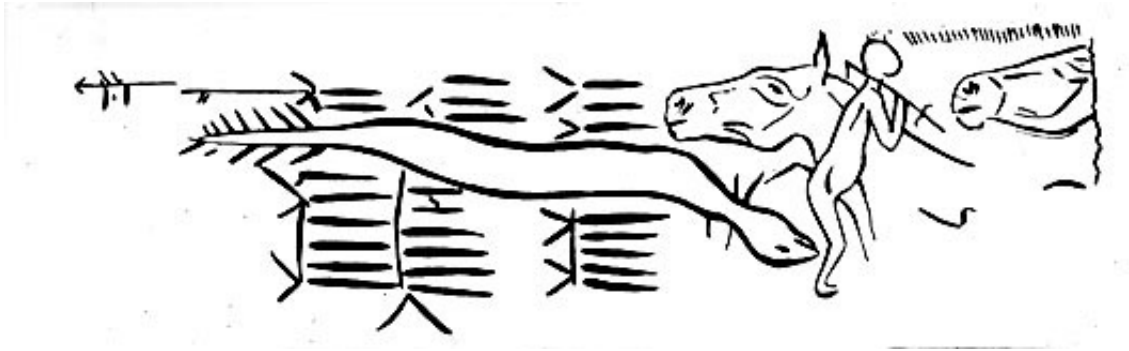
Bi-lines, Le Placard, Solutrean (Chollot-Varagnac 1980:65, 54.937L and I)

Here the bi-line motifs stand alone, without reference to any animals. On the other hand, a single bi-line motif at Chauvet is engraved on the neck of a horse.



Bi-line on horse, Chauvet, Aurignacian (Chauvet *et al* 1996)

A serpent with a bi-line similarly across its neck is engraved on a bone from La Madeleine, Dordogne, microscopically analyzed by Marshack (1972). This serpent also has lines radiating from its tail, suggestive of feathers. Next to it is inscribed a human figure carrying an oddly shaped stick, probably a ceremonial crook of some sort, and possible counting marks.



Bi-line, La Madeleine, Upper Magdalenian
(Marshack 1972: fig. 97, line rendition A. Marshack)

Based on such images, Marshack (1972) interpreted stroke, dart, X and bi-line as primarily signifying "ritual, ceremony or sacrifice," and secondarily "wounding, killing."

Bi-lines are painted on a pregnant mare in a secluded, small sanctuary in the cave of La Pileta has at least nine clear bi-line signs on its body.



Bi-lines, La Pileta (Marshack 1991: fig. 197)

Marshack refers to these La Pileta bi-lines as "double wound marks, each set made at a different time" (329). I suggest that since the bi-lines are on a pregnant mare, they are associated with pregnancy, rather than 'killing.' Indeed, subsequent decodings have suggested that the claviform sign (so-called 'female' or 'pregnant female' sign) belongs to this cluster.

21. Marija Gimbutas (1989) decodes Neolithic bi-lines as "progressive duplication, doubling, pregnancy, twinning, abundance, the power of two." So as to not import notions of sacrifice from Neolithic and later religious traditions, I propose, based on resonances among this cluster of signs, to translate the cluster as a whole as "Contact, cleave to, feel irrupting spirit energies within, be pregnant, gestate, double, split within, disremp, be set apart, cross into the

separate or other world!" The bi-line evokes the crack or cleft in a rock face, the cave, the valley gap, the canyon, which may be used as portals to enter into the other world, the alternate reality; and it evokes the inward psychic splitting through which irrupts the spirit energies of life. The single line, like the arrow or dart, entering an animal, like the line the artist uses to make the animal, is "the way you enter it," that is, the way one enters the animalness of that animal, i.e., its spirit (an interpretation suggested by the eurythmist Annalies Davidson, personal communication 1994).

22. The decoding of the 'stroke, bi-line, dart, X' cluster that I propose is based on intrinsic examination of UP(E) graphemes and associated imagery. Some extrinsic analogies show similar decodings. One of the pictograms in the Ojibway Anishinabe Midewiwin Chant depicts a headless bear with three strokes in its back and one in its belly, a fifth stroke line runs through it from back to belly. According to the informant the ideogram reads: "My body is a spirit; . . . with a line across the body, signifying one of the most powerful of the *manitos* or spirits of the Midewiwin or 'Grand Medicine Society'" (Mallery 1888:233).



Another bear ideogram has 4 strokes on its back plus 4 more angling off the back (like 4 split chevrons) plus breath lines from the mouth; the informant translates: "I am about to walk; (that is) Bear spirit, talking; the lines upon the back indicate his spirit character" (Mallery 1888:246).



In other words, the strokes or bi-lines through the animal decode as 'I am a spirit animal; my body is a spirit, a sacred power.' Or, 'I am speaking to you. You, your body, is this spirit animal. Make contact with my power . . . feel its life-giving energy irrupt into your life as in death. This is your sacrifice. I offer myself for you; offer yourself to my spirit body, honor it!' Ojibway ideograms of animals with 'heart-lines' (a line or line with a point running from mouth to chest ending in a heart-shaped object) may also have additional darts or strokes penetrating the back or belly of the animal (Mallery 1888:247); they were used to presence spiritual power for everyday

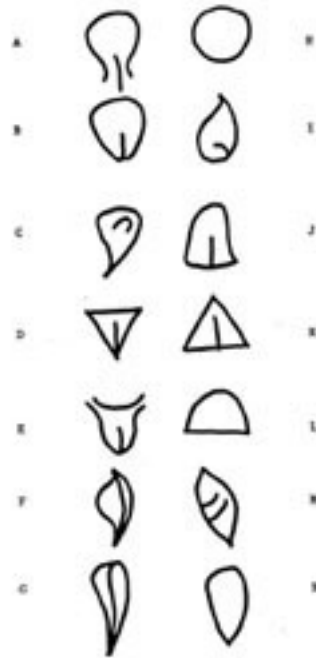
hunting (so-called 'hunting magic') and for 'hunting' supernatural, spirit animals, who have healing and other sacred powers. Similar examples occur in rock art around the world (e.g., Patterson 1992:114; 54, 82, 43).

23. A rock painting from Gongxian, Sichuan, China depicts a fisherman and fish, the latter with three “X”s on its body, which may have a meaning still in use today: "very large!" (Anati 1993:fig.112); or more likely the X-like character component found in the Chinese characters for *yì* (cut, mow, shear); *yáo* (oracle line, sacrificial meat); and *shá* (kill). In hieroglyphic Egyptian the generic determinative "X" signifies "break, divide, cross" (Ritner 1996:80).

24. In Bihar, India a wall painting depicts serpents with bi-lines across their necks, one covered with “X”s (Jayakar 1990: fig. 50), the signs indicating that the images are sacred *nagas* and *nagini*, keepers of the secret life energy stored in the watery depths of springs, wells, and ponds, devotees of divine beings, guardians of temples, treasures, and the fertility and wealth of households, and thus of irrupting spirit energies.



25. One, two, three—as Socrates says—but where is the fourth that completes the whole? One way to proceed is as follows: take Leroi-Gourhan's chart of examples of paired signs (1967: chart xxxiv)—see *Appendix*—and subtract the signs from the three clusters we've already identified. (Also set aside for the moment dots, which might be easily confused with tally notations, rectangular shield-like signs, and wand or hook-like implements.) Clearly, the most prominent remaining signs appear to belong to a cluster which comprises circle; oval; ellipse; teardrop; concentric circles, with or without dots or holes in the center; triangle pointed up, triangle pointed down, with or without stroke marks; uterine shapes; vulva; phallus; and seed shapes.



‘Uterus-vulva-seed’ signs: A Abri Cellier; B Abri Blanchard; C La Portel;
D Bédéilhac; E Arcy-sur-Cure; F Ussat; G Les Combarelles; H Pech Merle;
I Altamira; J El Castillo; K La Mouthe; L: El Castillo; M Ussat;
N Isturitz; Patricia Reis after A. Leroi-Gourhan (1967)

All these shapes have a similar topological shape and a common function as container, vessel, center, or source. (There is one exception to this in this set of images, A, which because it is open and has a line that evokes birthing, movement through the birth canal, should be categorized as one of the birthing signs in the cluster of ‘branch’ signs.) This then I propose as the fourth grapheme cluster of UP(E). (Here I do not follow the decoding of Leroi-Gourhan, who categorized them as 'female' signs or as 'wounds.')

Its overall topological shape represents its overall semantics, signifying ‘to center in a source of new life’.

26. Gimbutas (1981a) identified a similar set of signs in the European Neolithic, referring to them as "uterus-vulva-seed" ideograms, and suggested they were survivals of these Upper Paleolithic predecessors. For the European Neolithic she determined that they signified 'potency, the womb-seed, origin and source of life.'

27. Such vulva-seed signs are typical of the Aurignacian art style and continue through the Magdalenian. Magdalenian disks from Isturitz and Mas d'Azil have central perforations, concentric circles, and strokes, which were frequently engraved in an inward direction.



Concentric circles with holes, Isturitz and Mas d'Azil
(Chollot-Varagnac 1980: 223, 74.954 and 47.225)

They suggest a semantic of centering, centeredness, inwardness, and inward centering into a source of potential energy. If the two semes are combined, this would result in a decoding of vulva, triangle, seed, uterus, circle, hole, ellipse, and phallus as something like: "Form your sacred circle, your seclusion, center inward, concentrate, yourself in yourself, and find your vulva-seed-womb source of life, your generative matrix and phallic potency, your luteal and seminal life-force!"

28. Based on this analysis, of which the above sketch is but the tip of the iceberg, I propose that by the time of the Franco-Cantabrian Magdalenian, there existed a protolanguage, UP(E), which had four grapho-semantic fields. With respect to shape, these signs appear to fall into four basic clusters:

A) circle and its derivatives, including concentric circles, oval, teardrop, ellipse, uterus, vulva, phallus, seed, with/without internal dots or stroke marks; and triangle, pointed up or down, with/without internal stroke marks;

B) single stroke mark (may be iterated); , bi-line (pair of parallel short stroke lines), crisscross stroke ("X" sign); stroke with points or feathers like dart, spear, arrow; "Y" sign; and claviform; all frequently superimposed on animals, esp. on their necks; backs, and bellies;

C) branch, vine, plant, penniform (feather); vulvar or rectangular sign broken through by line(s); single or concentric ellipses with open ends, suggestive of, or associated with birthing imagery; and tectiform;

D) chevron, "V" sign, running angles, zigzag; meander; spiral or coil; arcs or catenary curves; tri-line (triad of lines); and ray (with lines directed outward, "comet").

The overall semantics of these clusters may be read, respectively,

A) "Center inward, form your sacred circle, your seclusion, concentrate, yourself in yourself, and find your vulva-seed-womb source of life, your generative matrix and phallic potency, your luteal and seminal life-force!"

B) "Contact, cleave to, sacrifice to, feel irrupting spirit energies within, your animal spirit body, the creative tension and interplay of opposites, be pregnant, gestate, doubling and redoubling, or split within, disremp, bifurcate, be set apart, cross over into the separate reality, the other world!"

C) "Branch out, sprout, emerge, give birth, hatch, grow out of, grow, unfold, unfurl branches, ramify, branch."

D) "Flow, streaming with undulating self-movement of all things, spiraling, dancing with life!"

In summary, the basic fourfold semantic of UP(E) reads:

"Center inward in seed-like potency! Contact, cleave to irrupting spirit energies! Emerge, unfold, branch! and Flow with the undulating movement of life!"

29. These four semantic fields appear to be structured by an underlying Aristotelian 'logic square' of differential semantic features as defined by A-J. Greimas (Greimas 1966, Patte 1982). The Aristotelian logic square and the allocation of grapheme shapes by this logic square is presented in Diagram 1. Within each cluster, signs are roughly similar in topological shape; between clusters, they display complementary oppositions of shape. Table 1 lists each of the Aristotelian logic relations of contradiction, contrary opposition and similarity and indicates the shape oppositions and their implicit shape semantics. In other words, the four shape clusters involve mutual binary oppositions of shape, that is, complementary movement-forms (topological shapes). These correlate to mutual oppositions in the semantics of the respective types of movement-form. Centered containment is opposed to bifurcation; and these are respectively opposed to emergence (unfolding) and flow. One can feel the tension in the contrasting kinds of movement-form. The set of six shape-semantic oppositions constitute a semiotic system as defined by A-J. Greimas (Greimas 1966, Patte 1982). Through mutual

interdefinition and semic cross-resonances, UP(E) lexemes gained their semantic nuances. Diagram 2 summarizes the basic semiotic logic square of for the UP(E) graphemes.

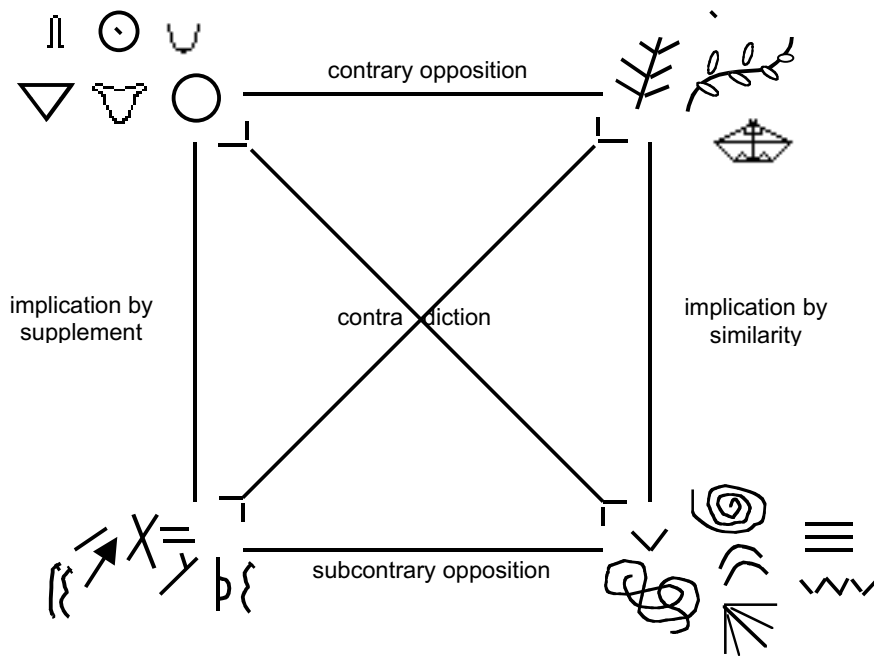
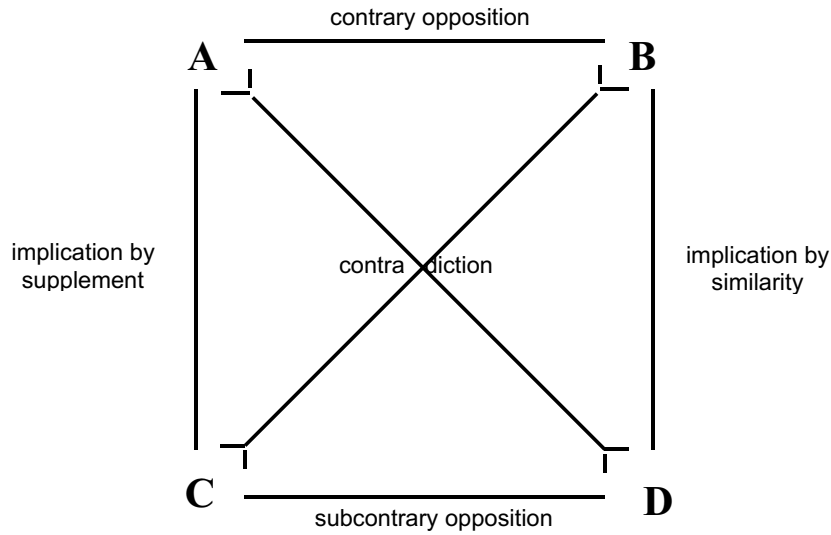
Diagram 3 summarizes the basic ‘grapho-semantic hypothesis’ for European Upper Paleolithic, UP(E) as I first decoded it in its 1987 version. Diagram 3 presents the basic semantic meanings that mutually define themselves through the Aristotelian logic of difference and similarity between the four basic types of grapheme shapes (movement-forms).

This grapho-semantic hypothesis is distinguished from the phememic-semantic hypothesis, which is developed in Part II of my proposed decipherment of the Upper Paleolithic graphic marking tradition and which adds an oral, spoken component of European Upper Paleolithic to the UP(E) movement-forms or graphemes.

Diagram 4 presents a 1994 refinement of the basic ‘grapho-semantic hypothesis’ for European Upper Paleolithic, UP(E), based on cross-mapping Diagram 3 against Mary LeCron Foster’s (1978, 1986, 1990) lexicon of Primordial Language (PL) root stems. This cross-mapping procedure is explained in detail in Part II. Suffice it to say at this point, that this refined version of the grapho-semantic hypothesis may be viewed as implicit in the topological features of the four basic UP(E) grapheme clusters. Foster’s thesis for PL is not absolutely necessary to justify the refinement of UP(E) semantics indicated in Diagram 4.

Diagram 5 presents and ‘expanded’ grapho-semantic hypothesis that is dependent upon accepting Foster’s reconstruction of PL. It gives a much more differentiated decipherment of individual graphemes within each cluster. While a more risky hypothesis, I do believe, as I show in Part II, that a decipherment at this level of differentiation is warranted both by the European Upper Paleolithic inscriptions and by Foster’s reconstruction.

Diagram 1: Logic Square and Allocation of Graphemes by Logic Square



Note: Following A-J. Greimas' method of structural semantics, the top diagram summarizes an Aristotelian Logic Square. The bottom diagram allocates UP(E) graphemes by mutual inter-definition of shape according to the logic square.

Table 1: Mutually Inter-Defining Grapheme Shapes of European Upper Paleolithic as Defined by UP(E)'s Underlying Logic Square (1994 version*)

The relationships between the graphic shapes (graphemes), situated at the four poles of the fundamental graphic square of UP(E), and between their iconically corresponding sememes--as derived in discovery procedures described elsewhere--are homologous to the logical relationships in the classic Aristotelian logic square. This UP(E) semiotic square exemplifies a structural semantic system as defined by Greimas.

Contradictory oppositions (not both "true" or both "false"):

1. Circle, triangle, ellipse : chevron, zigzag, meander, tri-line, spiral, arc
:: centered, concentrated, circling back : flowing, undulating, pursuing motion
2. X, stroke, dart, Y : branch
:: holding together, doubling-joining, bifurcating, manifolding
: unfolding, developing, maturing, branching, emerging

Contrary opposition (both not "true" at same time):

3. Circle : branch :: origin, source, before : happening, intending (outward, forward)

Subcontrary opposition (both not "false" at same time):

4. Claviform : zigzag :: protruding, bulging, surging (within a boundary)
: pouring out (across a boundary); flood, overflow, drip, rain

Implication by supplement or contiguity (first cannot be "true" and second "false"):

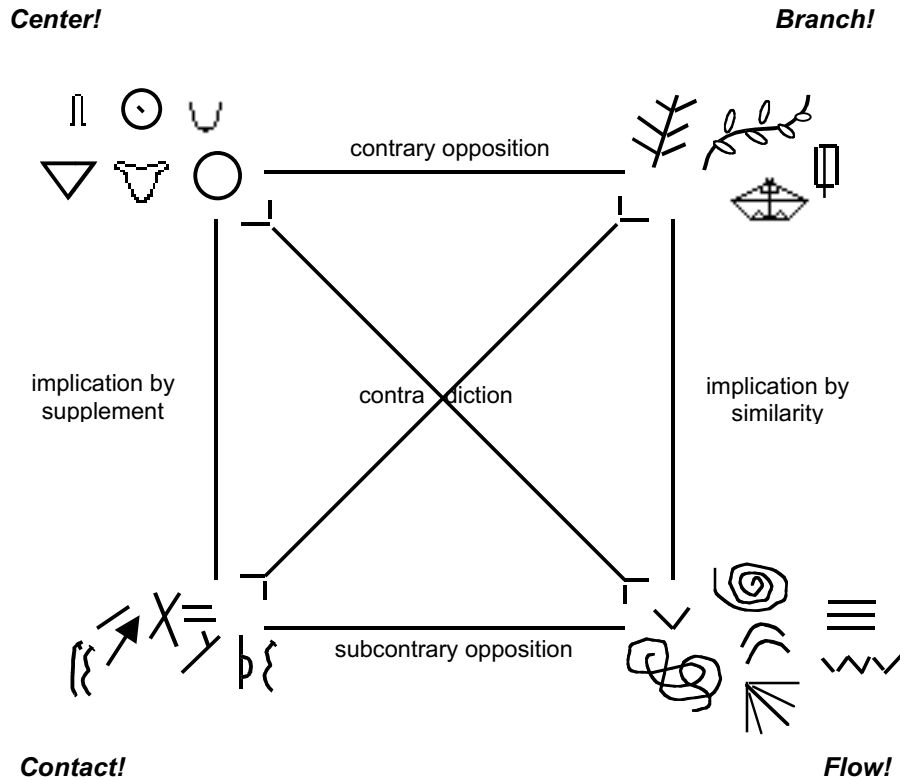
5. The grapheme of the breast with its implicit relation, the infant at the breast (the mother-infant bond) implies the grapheme "bi-line," since the mother-infant bond is an essential pair, just as the sememe "breast, oral nourishing, affinity" with its implicit sense of pairs, implies the sememe of the supplement, the other half, i.e., "cut, halve, separate."

Implication by similarity (first cannot be "true" and second "false"):

6. The tectiform or other graphemes of birthgiving imply the similar shape of the spiral which moves outward from a center by giving forth ever wider and more open arcs, just as the sememe "birthgiving, new born, lack, desire, emptied out (as in birth, death)--implies the sememe "spiral, revolve, rotate, circuit, curl, exuberance." To this day the spiral is used as a symbol for the stages or cycles of life, from birth to death.

*Revision of Harrod (1987) based on Foster phemo-lexemic theory of PL (1978, and subsequent).

Diagram 2: Upper Paleolithic (European) The Basic Grapho-Semantic Hypothesis



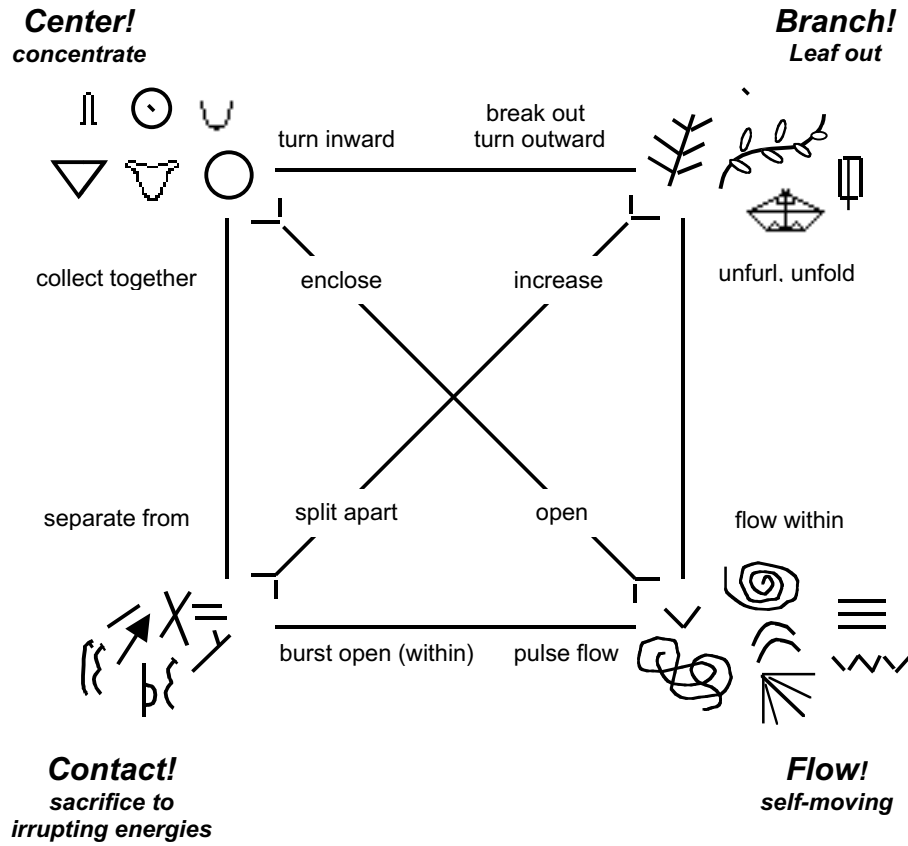
The Basic UP(E) Semiotic Logic Square

Center inward! Contact irrupting sacred energies! Branch, unfold, grow! Flow!

This diagram and its formulaic expression represents the deep structure, the fundamental semantics, underlying UP(E), the geometric protolanguage of Upper Paleolithic Europe. As such it conforms to the rules of a semiotic system as elucidated by such theories as Greimas's "structural semantics". Each geometric marking motif has a shape as well as semantics opposite to that of motifs in the other three clusters. Thus, they constitute a structured, tensive, mutually-differentiating whole. For example, a circle-shape as "centered, contained," is opposite to a meander-shape as "undulating, pursuing motion." A branch-shape as "continuity, branching, unfolding, developing" is opposite to an X-shape as "manifolding, disassociating, splitting-joining, discontinuity." A circle-shape as "turning inward to a source" is opposite to a branch-shape as "emerging out of." A claviform-shape as "protruding, bulging (within a boundary)" is opposite to a zigzag shape as "pouring out of (a boundary)." Also, a circle-shape as "breast, nurturing" implies its supplement, a bi-line-shape as "other half, pair;" and a tectiform-shape as "giving birth to" implies by similarity of shape "a spiraling, cycle-of-life movement."

Note: In this protolanguage the sign shape (signifier) has qualities similar to the semantic meaning of the sign (signified). Signifier and signified are mutually iconic. In linguistic terms, UP(E) is not yet a "dual-patterned" language in which the relationship between signifier and signified is purely arbitrary.

Diagram 3: Basic Grapho-Semantic Hypothesis—Refined Differentiation (1987)



Note: This diagram summarizes the first refinement of the basic UP(E) grapho-semantic hypothesis (1987). It further differentiates and identifies UP(E) grapheme semantics drawing upon the mutual inter-definition of grapheme shapes, following A.-J. Greimas' method of structural semantics and an Aristotelian logic square.

**Table 2: Nuclear and Contextual Semes of the UP(E) Semiotic Square
(1994 version*)**

A) = "Center!"

Nuclear seme: Concentrate, take in, possess (self-possession), have, quality (essence)

Contextual (Axial) semes:

mother-child, breast, oral nourishment, affinity;
origin, source, ancestor, grandparent, before, first;
center, circle, circle back, reverse, from-towards (**key differential seme**)

Sub-axial semes:

womb, sleep;
manly, penis

B) = "Cleave! Contact!"

Nuclear Seme: Holding together, doubling-joining, twin, bind, move back and forth
right vs. left side, hand, pregnant

Contextual (Axial) semes:

abundance, wealth, distribute equitably, symmetry, increase
protrude, bulge, surge (within a boundary);
split, cleave, bifurcate, flay (injure, wound, kill) (**key differential seme**)

Sub-axial semes:

crush, grind;
stand, stay, weaken, decay

C) = "Unfold! Emerge!"

Nuclear Seme: new, grow, develop, change, strive, achieve, destiny, shape

Contextual (Axial) semes:

happen, intend (outward, forward), without, differentiate;
give birth, new born, lack, desire, emptied out (as in birth, death);
branch (out), blossom, sprout, open up (**key differential seme**)

Sub-axial semes:

sway, tremble;
unfurl, loosen, entwine, vine

D) = "Flow!"

Nuclear Seme: undulating movement, pursue, sea, bend round, web

Contextual (Axial) semes:

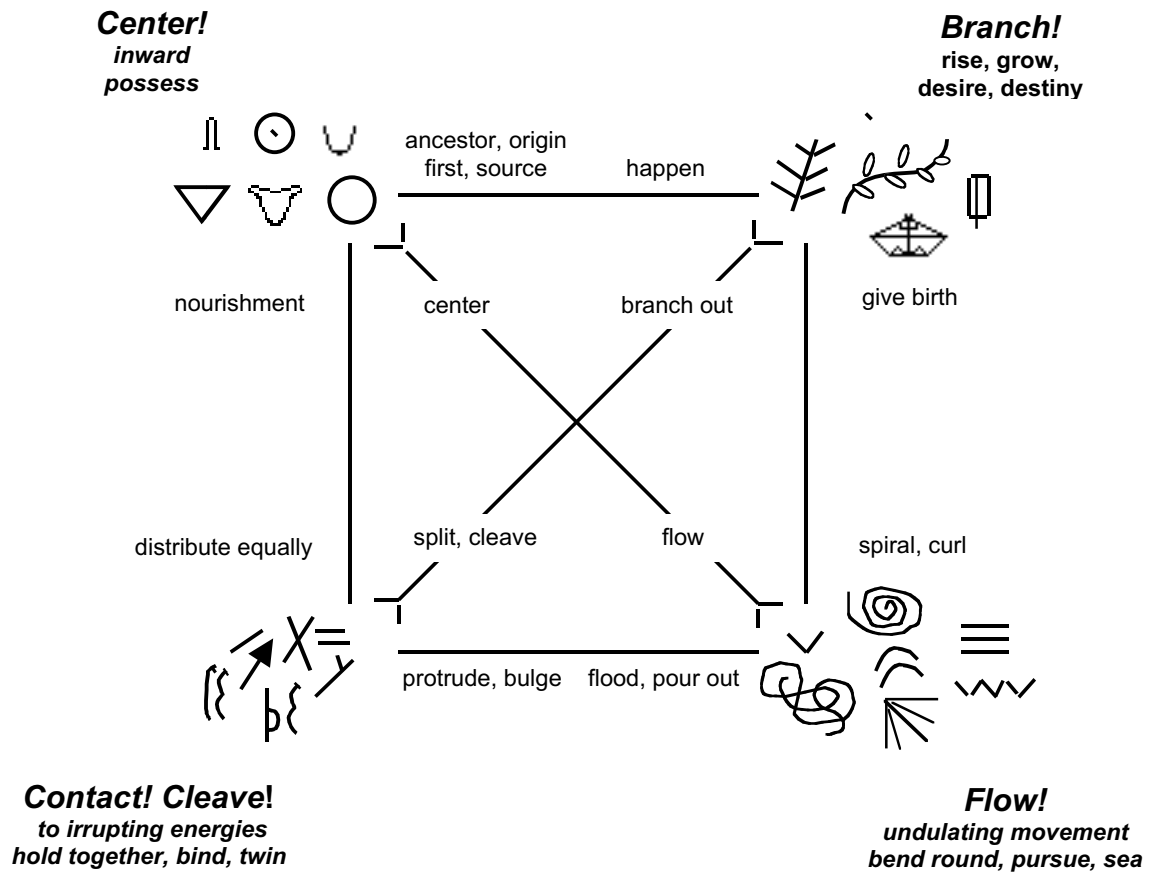
pour out (across a boundary); flood, overflow, drip, rain;
spiral, revolve, rotate, curl, boil, exuberance;
flow, running water, river, stream, sap, juice, tears (**key differential seme**)

Sub-axial semes:

emit, flow away from (center outward);
spirit, life, wind, blood (self-movement in medium of self-movement)

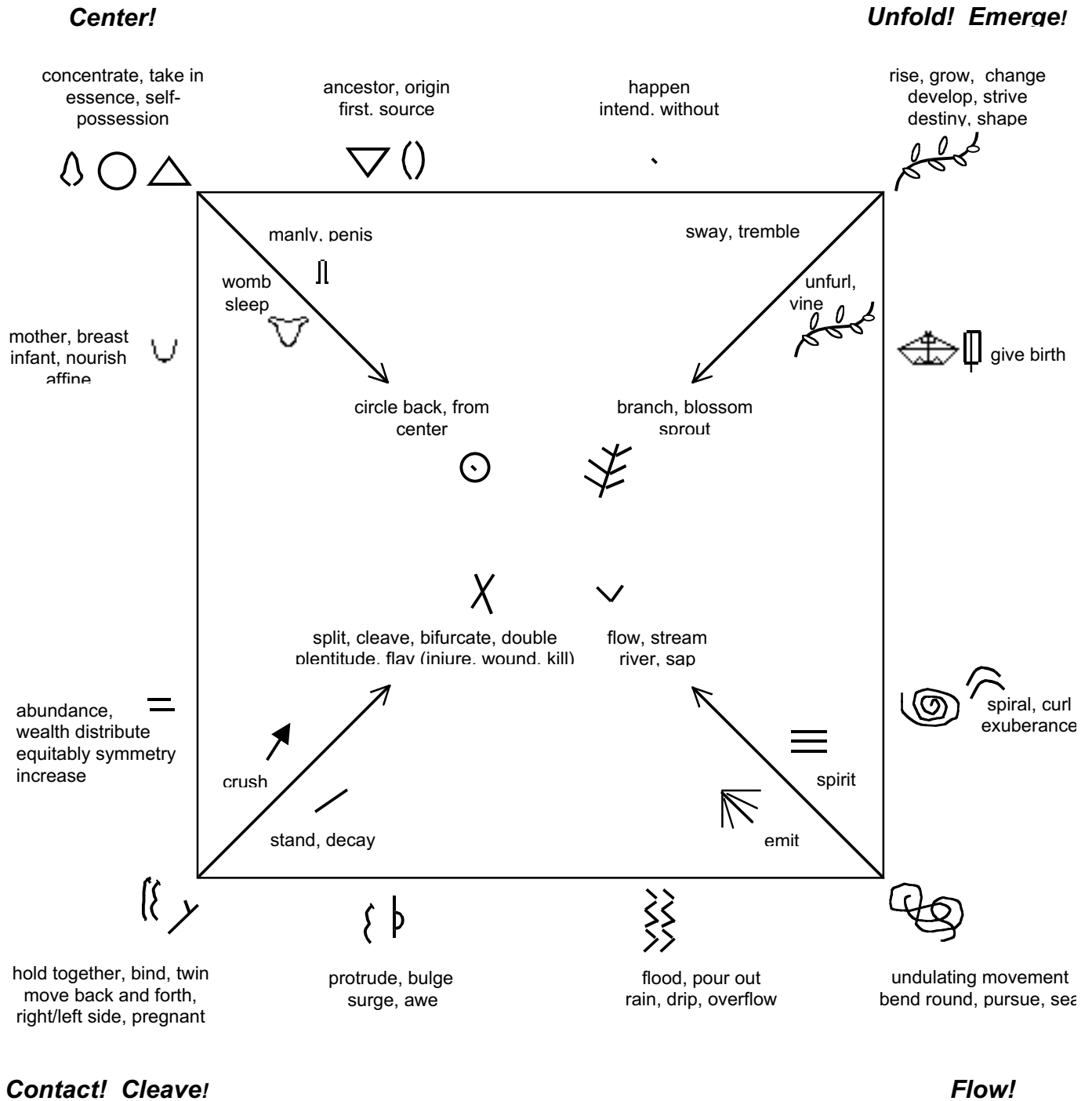
*Revision of Harrod (1987) based on Foster phemo-lexemic theory of PL (1978, and subsequent).
The terms 'nuclear seme' and 'contextual seme' are defined in Greimas (1966).

Diagram 4: Basic Grapho-Semantic Hypothesis—Refined Differentiation (1994)



Note: This diagram summarizes the 1994 refinement of the basic UP(E) grapho-semantic hypothesis, after cross-mapping the 1987 version against Mary LeCron Foster's (1978, 1986, 1990) lexicon of 'primordial language' (PL). It re-differentiate the basic UP(E) grapho-semantics, which drew upon the mutual inter-definition of grapheme shapes, following A.-J. Greimas' method of structural semantics and the Aristotelian logic square.

Diagram 5: Expanded Grapho-Semantic Hypothesis (1994)



Note: This diagram further refines Diagram 4 (1994 refinement of the basic UP(E) grapho-semantic hypothesis) re-allocating individual graphemes and their unique semantics after cross-mapping against Mary LeCron Foster's (1978, 1986, 1990) lexicon of 'primordial language' (PL).

30. This fourfold semiotic system or protolanguage appears to have been used to communicate the basic elements, the semantic microuniverse of Upper Paleolithic European (Magdalenian) spirituality. Using these sacred sign-words, a shaman could conjure fundamental life-energies and formative spiritual transformation processes and could evoke powers for the healing of the individual and communal soul. At the same time, these signs could be used to refer to elemental processes of the natural world, as a kind of proto-scientific and proto-philosophic discourse.

31. After making this initial decipherment of the fourfold structure of UP(E), Marija Gimbutas showed me Challot-Veragnac's inventory of Franco-Cantabrian portable art. In this collection, I came across two objects dating to the Magdalenian, which provided further important evidence for identifying UP(E) as a structured semiotic square of signs. A reindeer antler buckle from Le Placard has a single clear branch sign engraved on one side and an X sign on the obverse, an excellent example of UP(E) sign pairing.



Pairing branch and X signs, Le Placard, Magdalenian
(Patricia Reis after Chollot-Varagnac 1980:135, 55.054)

Even more striking is a ceremonial baton from La Madeleine.



Quaternion, All Four Sign Clusters of UP(E), La Madeleine, Magdalenian
(after Chollot-Varagnac 1980:113, 20.058)

It is engraved with concentric circles around a hole, a vertical row of X signs (*right face*), a vertical row of chevrons (*left face*), and a vertical sinuous branch sign (*center*). Thus it has one sign from each of the four UP(E) sign clusters. It seems intentionally designed to teach the four key differential features of the semiotic square that structures the Magdalenian protolanguage UP(E).

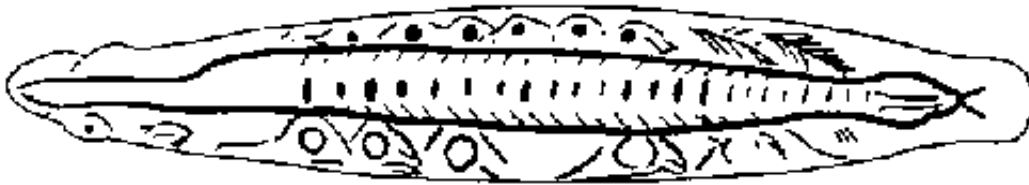
SECTION C. READING UPPER PALEOLITHIC (EUROPEAN)—SOME EXAMPLES

32. We can use this decipherment to translate instances of sign use, including signs from one cluster and pairings of signs from different clusters.

33. As noted earlier, the famous 'Chinese' horse in the Lascaux Axial Gallery, believed to date to the Solutrean-Early Magdalenian I-II, has a branch sign on its belly (Ruspoli 1987:114). This would signify: "Give birth (or rebirth)!" and perhaps also "Branch, grow, unfold with generative horse-like energy!" The image and sign might be associated with a cult of the Mother of Horses; such a cult is richly attested at the 'horse sanctuary' at Magdalenian Duruthy. The first

level of translation would be directed toward the divinity and nature; the second, toward the initiate or ritual participant.

34. When UP(E) signs are paired up they express combinations of processes, i.e., a process which leads to another process, a trans-formation from one motion-form to another. In other words, UP(E) graphemes can be used as units in a narrative semantics, as in the Lorthet engraving analyzed earlier.



The 'Rosetta Stone' – branch and tri-line signs, Lorthet, Hautes-Pyrénées (line rendition by A. Marshack)

The Lorthet engraving says: "Break out of your shell, hatch, be born, newly alive, striving to take shape, branch out, blossom, ramify with spring thaw life! and then follow the undulating self-movement of lif, wise in the ways of danger, filled with the earth-born spirit energy of life!"

35. Lions, ibex, bison with superimposed darts, bi-lines, (possibly) Xs and a tri-line; one lion with breath (voice) marks coming out of its mouth in the Chamber of Felines, Lascaux (Leroi-Gourhan 1967:415)

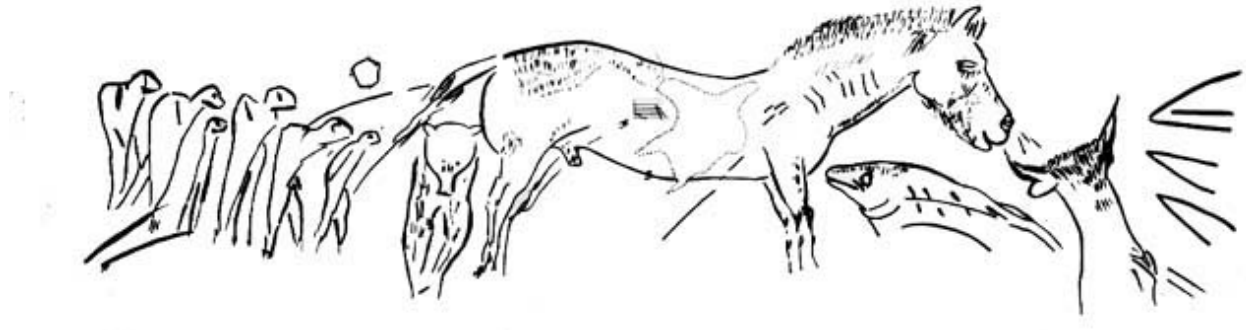


Multiple signs, one lion with breath-line, Chamber of Felines, Lascaux (after Leroi-Gourhan 1967:415)

would signify something like: "Stand, contact your piercing wounds; listen to the spirit lion speaking to you, breathing over you, with healing and power! My body is a spirit; and my body

is your body, spirit lion. Ibex knows; all these realms are spirit realms, Above, Below, and this Middle World, irrupting spirit energies within you as in these worlds. Feel lion spirit, ibex spirit and bison spirit energy irrupt into your life. Receive it, as I am offering my spirit to you. This is the heart of your sacrifice. Cleave to your wounds, and heal.

36. An eagle bone from La Vache, dated to the Final Magdalenian, c. 8,500 BC, is brilliantly examined and interpreted by Marshack (1991:275-276).



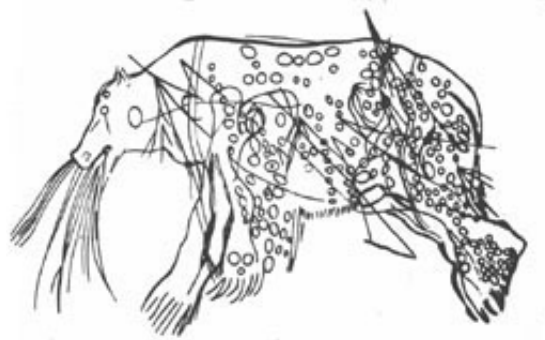
Paired bi-line and chevrons, eagle bone, La Vache, Final Magdalenian
(after Marshack 1991:fig. 154)

It represents one or more religious rituals involving horse, bovid, fish and bear. The stallion has several sets of bi-lines inscribed on its neck, a single stroke through its belly, breath lines-- Marshack says 'blood lines'--from its nostrils, and some sort of rectangular sign with superimposed 'ray' sign on its side. From the left six figures approach the stallion with heads bent forward, seeming reverential rather than aggressive. One figure has a phallus suggesting the group is male and may be naked; two figures, which are smaller, may be youth. Above the lead figure is a circle, which might be interpreted as the sun or moon. The bear, fish and bovid are later additions. Its discoverer, Romain Robert, interpreted it as an initiation scene.

Marshack notes that there are three strongly engraved 'angles'--I would say chevrons--inscribed on the right side of the design, which "look decorative but in other contexts have been found to imply 'water'." He seems not to notice that on the left side of the design is an equally strongly engraved bi-line. The bi-line and chevrons frame the composition and, thus, appear to be signs intentionally paired to signify the overall transformation process or religious meaning of the ceremonial as a whole. The bi-line belongs to the same cluster as dart and stroke, with the overall theme of "contract irrupting spirit energies, sacrifice." Strokes and dart connote "this is your spirit animal body" and "wound, cut, kill", while the bi-line connotes "double and redouble, twinning, abundance, as well as cutting, separating, halving, set apart, separate, a separate

reality, the other world." The chevron would connote "flow, stream, river, running waters, spring thaw flowing, a release of frozen energies." In the light of this proposed decoding of UP(E), the overall transformation ritual would have the following formula: "Separate, distinguish your other half, your higher power, cleaving to irrupting spirit stallion energy, feel your gestating inner abundance! and then flow with self-moving spirit energy, wind-like, stallion-like, radiant with light! This is the spirit stallion speaking." The transformation formula suggests that the 'Stallion initiatory ritual' might involve typical rite of passage themes: separation, death, liminality, return, in this case reincorporation into a patrilineal energy that flows like a stream, in continuity, from the ancestors through the fathers and into the sons and all future generations. The bi-line suggests there may have been 'cutting, separating' aspects of the ritual, such as tattooing, circumcision or subincision.

37. Similarly, two bears from Les Trois Freres are covered with circle signs (dots, cupules) and chevron or ray signs (Marshack 1991: fig 121b).



Bear with circles (dots, cupules), chevrons or rays, and breath-lines, Les Trois Freres (after Marshack 1991: fig 121b)

It would read: "Center inward, drawing into yourself, like a hibernating bear, into your self-nourishing, and generative potency! and then come forth, as in spring thaw, manifesting your powers, radiantly! This is the bear spirit speaking, breathing over you with healing."

38. The panel of signs at the entrance to the El Castillo cave sanctuary, Middle Magdalenian II-IV (11-9,000 BC), has four red, bell-shaped "vulva" signs juxtaposed to a black "branch" sign.



Vulva and branch signs, entrance El Castillo, Middle Magdalenian
(after Leroi-Gourhan 1967: fig. 63)

It may be read: "Center inward and access the vulva-womb-seed source of yourself! the origin of your fertile, luteal power! and then emerge, sprout, branching out, opening your heart, blossoming, unfolding with new life!" A similar reading may be given to a panel of signs superimposed on horses, Chamber of Felines, Lascaux, in which a "branch" sign is drawn so as to clearly emerge from a seed-shaped "circle" sign.



Seed and branch signs, Chamber of Felines, Lascaux
(after Ruspoli 1987:154)

39. A Middle Magdalenian bone pendant from Saint-Marcel, (Chollot-Varagnac 1980: 46.679) is engraved with three sets of concentric circles each with a dot in the center, a branching plant or tree, which appears to grow out of the topmost set of concentric circles; and an ellipse, which frames the whole.



Saint-Marcel, Middle Magdalenian
(after Chollot-Varagnac 1980: 46.679)

The design probably does not denote a literal plant growing out of a seed or the earth, since it depicts three seeds or three earths, but rather it would seem to depict a "tree of life," the three sets of concentric circles representing the three shamanic worlds, Upper, Middle, and Lower. Applying UP(E), the design may be read not merely as a static image, but as a pair of processes, a sacred transformation: "Center back inward, center into and from yourself, your core seed essence and tree of life, in each of its three worlds, Upper, Middle, and Lower! and then emerge anew, growing out of yourself, opening to the light and destiny of your luxuriant unfolding life!"

40. An analogous Ojibway chant ideogram with a tree in the middle of an ellipse means "the big tree in the middle of the earth,"



i.e., the *axis mundi*, the center and support of the universe.

41. A somewhat different cosmogony is presented in an engraving of branch and chevron signs on a bone from Mas d'Azil. It depicts a plant or tree with exposed roots, placed between bands of chevrons (running angles).



Branch and chevrons, Mas d'Azil
(Patricia Reis after Chollot-Varagnac 1980:123, 46.609)

Here the paired "branch" and "chevron" graphemes suggest a transformation or cosmogony, with all life (including the earth) arising out of cosmic waters. This would be analogous to the Earth Diver creation story type found among many circumpolar hunter-gatherer cultures. Or it may represent a birth-giving goddess creatrix. As depicting UP(E) graphemes, if directed at a ritual participant, it would read: "Emerge new born, let your life unfold, branch, blossom! and then flow, letting your life stream forth like spring thaw waters, feeling the rising sap, green juice, within and within all living things, veriditas!"

As these translations suggest, UP(E) could be used to give voice to a rich and complex array of ritual formulae and mythopoetics.

SECTION D. STORIED MYTHS OF DIVINITIES.

42. At a higher order semiotic level, that of "discourse semantics" (Greimas 1966), UP(E) could have been used to designate personifications (divinities, goddesses, gods) who presided over and brought about various natural and supernatural transformation processes. UP(E) has a discourse structure (mythological matrix) which combines the four basic grapho-semantic variables, that is, the sign clusters, which may be designated A, B, C, and D, into six possible combinations (pairs), A-B, A-C, A-D, B-C and so on. If, as it appears, these pairings were further marked so as to have 'male or female' variants, then UP(E) could encode six male and six female transformation processes. Since each transformation combination has a reverse permutation, this would yield twelve male transformations and twelve female transformations.

This discourse semantic structure had the capacity to organize the thematizing of values and to provide a matrix for personifications, i.e., specific, localized actors and actions (Greimas 1966; Patte 1982). In other words, it had the capacity to articulate Upper Paleolithic religious and theological system of divinities. This discourse semantics could have been used to narrate rudimentary mythopoietic or theopoietic stories, such as the Wounded Man, the Double Goddess, the Mother of Animals, and so on (for details see Harrod 1987b; 1994; 1997.)

43. Thus, UP(E) signs appear to have been used in a hierarchical system of reference. They could express an abstract elemental process of nature (e.g., a flowing stream, a quality of flowing in various given objects); a generalized process or motion-form viewed as a universal process or principal of existence or life (the flow of all things); a spirit being (divinity, sacred power) who personified and who was active in an elemental processes of nature (e.g., streams, rain, lightning, vegetal growth, seed, womb, etc.); a mythic transformation process of the human spirit; or a process of shamanic healing (e.g., cleansing and purification through water).

44. In this regard, UP(E) may be compared to Hopi pottery and rock art symbols, which denoted natural phenomena, such as clouds, rain, lightning, thunder, wind, still and running water; the deities who personified and controlled these phenomena, such as the sky god, cloud god, thunder god, water god; and the costumes and paraphernalia used in sacred ceremonies to entreat the gods and the elements they represent to deliver the benefits required for a good life (Patterson 1992).

45. Linguistically speaking, UP(E) is a protolanguage. It conforms to all the requirements of a semiotic system as outlined by the semiotician A-J. Greimas (1966; Patte, 1982). It has a "fundamental semantics," structured by a semiotic square of semantic fields, each a semantic micro-universe, the 'sign clusters'. It has a "narrative semantics," structured by transformation rules of combination and permutation capable of generating ritual formulae or injunctions. Finally, it has a "discourse semantics," a framework that can be thematized and given specific actors and localized actions so as to constitute rudimentary mythopoietic or theopoietic narratives or stories of human experience.

46. UP(E) is intrinsically a gestural or movement language; each geometric shape spontaneously expresses itself as gesture, as mudra, and as such lends itself to be danced--circle dances, line dances, branching and meandering dances to dance the elemental life forces, the spirits of motion-forms and transformations, the spirit of healing. UP(E) has some striking similarities to Eurythmy, a form of speech and tonal gesture dance developed by Rudolf Steiner,

and to other aspects of modern dance and expressive dance therapy. For instance, Isadora Duncan observed the movements in nature and sought to reproduce them, and she believed that all nature was traversed by a continuous undulating movement (Raffe, Harwood, and Lundgren 1974:6). More recently, the expressive dance therapist Emilie Conrad-Da'oud has emphasized the intrinsic, innovative and healing power of fluid undulating and centering "continuum" movements. For the dance movement teacher Gabrielle Roth (1989) there are five basic 'sacred dance' rhythms, actually six, counting the initial act of centering. Dance moves from centered stillness and meditative breathing to "flowing" like a sea of waves; "staccato" with repetitive jerking, jabbing, pounding movements; "chaos", a vibrantly alive, trance-like, gyrating and hands flying; "lyrical", light, feathery, graceful looping, swirling, waltzing; and finally a return to "stillness", the fullness of being alive, radiant, transformed, ecstatic. These moments of dance are stunningly similar to the themes of UP(E), with stillness corresponding to "Center!"; staccato to "Contact interrupting sacred energies"; lyrical to "Branch and unfold!"; and flowing to "Flow!".

47. Briggs and Peat (1989) drawing on Grubner's theory of creativity lay out a non-linear dynamic conceptualization of the creative process that tracks step by step the basic themes of geometric UP(E).

A leading creativity researcher, psychologist Howard Grubner of the University of Geneva, has taken Arthur Koestler's simple picture of creativity several steps further. Grubner proposes that creative processes should be thought of not in terms of the coupling of two planes of reference but in terms of the coupling of many planes. . . . According to Grubner, many, many small shifts in reference planes couple together, eventually producing a major shift of perception. The creator's mental effort can be pictured as circling around the problem or creative task, bifurcating to new planes of reference, returning to the old plane, branching to another plane and to planes that lie within planes. This mental effort engenders a far-from-equilibrium flux that destabilizes the limit cycles of habitual thinking. It also couples and phase locks feedback among several planes of reference and begins to spontaneously produce a self-organization (193).

Briggs and Peat highlight the themes of 'circling around' and centering, 'bifurcating,' like a Y-sign or bi-line, iterative 'branching' and a 'flux' that 'spontaneously produces self-organization.' Another creativity theorist Mihaly Csikszentmihalyi (1990) calls this fourth theme the 'flow experience'.

The types of 'flow' geometrically represented in UP(E) are remarkably analogous to the types of attractors in fluid dynamics, as described by Briggs and Peat. The chevron or a series of

chevrons evoking channeled streaming or riverine flow can represent a fixed point attractor, laminar flow or equilibrium. Spirals and arcs can represent limit cycles in which flow is warped by periodic oscillations in which stable vortices appear. Zigzags evoking lightning or rain can represent torus attractors, which involve two pairs of oscillating coupled systems (earth and sky). Meander and undulating line can represent strange attractors, which involve non-periodic flow or torus surface of fractal dimension, 'non-equilibrium turbulent chaos'. Finally, the tri-line can represent levels of complexity and 'rays' ('comets'), evoking radiance can represent energy exchange between compartmented or bounded systems (cross-catalysis). If so, UP(E) combinations of types of flow-signs evoking transitions from one motion-form of flow to another motion-form of flow, in non-linear dynamical terms, would be transformations through Hopf instabilities, from laminar flow, to limit cycles to torus attractors to strange or fractal attractors, all of four levels of attractors being generated by rules involving iterative self-similarity.

In dynamical terms, a UP(E) transformation from one motion-form to another complementary motion-form is a transition in 'phase-space-time'. A transition may move from circling around to contacting irrupting spirit energies via instability of infusing heat. It may move from irrupting spirit energies to branching via bifurcation, choice or chirality. This movement in David Bohm's terms in the 'unfolding of the implicate order of wholeness' or in Ilya Prigogine's terms the irreversibility of time's arrow.

48. The four basic themes of geometric UP(E) survive as primary themes of the world's major religious traditions. With an almost infinite simplification it might be said that 'circling around and centering' is the paramount symbolism of Islam (the Oneness of God, the Sufi dervish dance, the harmony of spheres); 'bifurcation, splitting, X, and pregnancy', of Christianity (Cross, Crucifixion, Mary); 'branching and growth' of Judaism (Burning Bush, Minora, *zimzum* and the sacred tree of the *sephiroth*); and 'flow' of Taoism, and it might be added 'vulva and phallus', of Hinduism (Shakti, Shiva and the *shri-yantra*) and 'shield-signs' of Buddhism (mandalas).

49. Geometric UP(E) represents a mythoglyphics of great metaphorical and poetic power and beauty. It speaks and gestures the movement of life and its creative processes. It provides a model for living in harmony with the energies of life and of life healing itself. It offers the symbolic means for the conscious affirmation of life. It represents the word of life. Our decipherment gives content to Mircea Eliade's (1978:27) supposition that Upper Paleolithic religion would have involved "magico-religious valorizations of language," "gesture epiphanies"

and "mystic syllables" and that "it is probable that the gestures of the anthropomorphic figures of prehistoric art were laden not only with meaning but also with power."

50. The foregoing summarizes but the first steps in the decipherment of Upper Paleolithic European. The next step that I have taken in the decipherment of UP(E), a tentative step, with many problems yet to clarify and resolve, is to examine the relationship between the basic semiotic square of UP(E) and the work of Mary LeCron Foster on primordial language (PL). At first glance, it is possible to match the semiotic square of UP(E) against the reconstruction of primordial language (PL) stems in Foster (1978), especially as the inventory includes multiple stems for "flow" which neatly match up with various graphemes in the "flow" cluster. By assuming that the stem inventory reflects an Upper Paleolithic dating—all stems are CVC, and as such use simple pairings in a logic similar to that of UP(E)—it is possible to cross-map PL stems against possible UP(E) graphemes, which results in differentiating out 24 distinct graphemes, all structurally inter-related (4 clusters times 6 signs per cluster), each with a distinct semantics, and in addition a tentative reconstruction of the phonological system of UP(E) (Harrod 1994.) Some fifty remaining PL words appear to signify every day social and cultural activities, comprising semantic fields for tool making and food preparation, foraging, childcare, and social goods (family, sexuality, wealth, territorial defense). This reconstruction of the 'maximal' hypothesis of geometric UP(E) will be presented in Part II.

An Afterthought on the Use of Ethnographic Analogy in Deciphering UP(E)

Following Leroi-Gourhan's and Marshack's leads, the decipherment proposed in this study primarily uses intrinsic shape analysis and contextual imagery. I have not drawn upon ethnographic analogies as clues to decipherment with a few secondary exceptions. (1) In decoding the 'branch' signs I relied on intrinsic and contextual clues, especially the 'Rosetta stone' of the Lorthet engraving. (2) In decoding the 'flow' signs I used intrinsic and contextual clues, again the Lorthet engraving plus Marshack's decoding of chevron, running angles, and meander and also drawing only on Gimbutas' European Neolithic decodings as an example of survivals of the UP(E) thematics. That is, I followed a general rule of reconstruction, that, if used at all, analogies be taken from the same geographic area where lineal 'survival' is a more likely possibility. (3) In decoding the 'circle' ('container') signs I primarily relied on intrinsic and contextual clues, but also utilized Gimbutas' poetics of 'uterine-vulva-seed' symbolism, justifying this as both independently applicable and as a survival.

(4) Finally, in deciphering the 'stroke, bi-line, X, dart' sign cluster my use of analogy was more complicated. First, I relied on intrinsic and contextual clues, drawing on Marshack's analyses and his 'killing, ceremonial' translation for strokes, bi-line, darts, X and Y signs. I then used Gimbutas' deciphering of the 'bi-line' as 'doubling, pregnancy, abundance, power of two', justifying this as both independently applicable and as a survival from the same geographic area. I noted that Anati interpreted the X-sign as 'abundance' with respect to a Chinese pictogram, but this analogy is not necessary for my decipherment. It only points to a wider use of this or an independently similar geometric protolanguage. On the other hand I have used a more distant analogy from the Ojibway, to enrich Marshack's intrinsic and contextual decoding of the stroke mark as it appears across animal bodies and 'breath-like' marks from animal mouths.

What's the justification for this Ojibway analogy, the one non-European Neolithic analogy that I have used? Is this as far-fetched as those oft criticized analogies to Australian Aboriginal art and religion, or Siberian or African shamanism? Initially, I thought it just might be so, though the imagery was virtually identical. I used it because the Ojibway informant's interpretation seemed to match our intrinsic interpretation, while expanding it with a deeper and more meaningful spiritual resonance. In short, it 'clicked'. Then, some years later, geneticists made a highly relevant discovery about the Ojibway Anishinabe people.

The Anishinabe groups speak dialects of Algonquian languages. Their legends and archaeology indicate that they came from somewhere in the Canadian Atlantic Maritimes, migrating down the St. Lawrence River. Genetic studies of Native American mtDNA variation have found four haplogroups A, B, C, and D, which appear to correspond to two or more waves of migration through Beringia. One recent genetic study (Brown *et al* 1998) revealed the presence of haplogroup X mtDNA, found at low frequencies among modern Europeans, among Native Americans, restricted to northern Amerindian groups, including the Ojibwa, Nuu-Chah-Nulth, Sioux and Yakima. Of these groups it is most frequent for the Ojibwa, at around 25% of the population. This study estimates the “coalescence time” for X among European/West Asians at 30-40,000 years ago [that is, about the time of the Near Eastern-European Aurignacian culture] and the arrival time for X in North America around 12,000-36,000 years ago and concludes, “to date, haplogroup X has not been unambiguously identified in Siberians or other Asians, raising the possibility that some Native American founders were of Caucasian ancestry.” Scozzari *et al* (1997) examined multiple Ojibway polymorphisms of ancient European origin, with frequencies ranging from 3% to 64%, confirming the existence of “a fifth Native American founding haplogroup, which is currently limited to the Algonkian-speaking populations”. These genetic studies strengthen the findings of previous serological studies that suggested the anomalous gene pool of the Ojibway, Naskapi and related Algonquians (Szathmary *et al* 1974; Szathmary and Reed 1972).

In the light of these new genetic studies, the use of ethnographic analogies from Ojibway pictograms and their informant interpretations is not so far-fetched. Here we have a living pictogram tradition with informant interpretations that appears to be, to a quantifiable degree, a direct descendent of the European Upper Paleolithic. Indeed, I would now argue, the Ojibway pictogram tradition represents the best possible analogy for deciphering European Upper Paleolithic geometric markings. Further, Algonquian tribes ranging from the Cree through the Anishinabe to the Naskapi and Wabanaki provide us with rich living and ethnographic sources for decoding and interpreting many other aspects of European Upper Paleolithic symbolic art.

Appendix: Back Up Charts

A.Leroi-Gourhan's chart of paired signs (1967:Chart XXXIV, p. 514):

A						
B						
C						
D						
E						
F						
G						
H						

B. Leroi-Gourhan's chart of female signs (1967:Chart XXXII, p. 513):

	TYPE	NORMAL	SIMPLIFIED	DERIVED
A	1			
	2			
	3			
B	1			
	2			
	3			
C				
D	1			
	2			
E				

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