4:26 Old World Language in the Americas 1991-1992

Old World Language in the Americas

Mary LeCron Foster

Department of Anthropology, University of California, Berkeley.

Long term comparative research on global linguistic relationships has demonstrated that the world's languages stem from a single, monogenetic source (e.g. Foster 1977, 1990). This position is supported by a global comparative analysis of modern and historically attested languages (Foster) that has generated a great deal of evidence. Since biological and archaeological anthropologists have similarly hypothesized that humankind itself had a single origin in Africa, it is probable that language and tool-making developed in tandem as cultural corollaries to a biological evolutionary imperative.

I have hypothesized elsewhere (Foster 1991) that language, like tool-making and use, emerged slowly throughout the Middle Pleistocene, and that the same emergent cognitive capacities predetermined and shaped both. I have also argued (Foster, 1990a) that the expanding hominid capacity for analogical thinking was the driving factor in the initiating and perfecting of both skills, resulting in the complex systematization that underlies culture.

The primordial linguistic model is not valid only as an explanation of how language came into being in the Paleolithic; it also provides a base-line for increased understanding of prehis-

toric language change--or how language became languages during subsequent eras--especially during the Neolithic, and on into the Bronze Age.

What I am proposing in this paper is that at least some New World linguistic stocks and families derive from Old World languages, and that they must have differed by sea during the Bronze Age rather than earlier across the Bering land bridge as is commonly supposed. I have accumulated a considerable body of supportive evidence for this position, some of which I will discuss here.

Primordial Language as a Comparative Base Line

Linguistic investigation during the late nineteenth and early twentieth century demonstrated that where languages share common descent the regularity of sound changes (as of *p to /f/ in English[1]) makes possible the recovery of an earlier stage of the parent language. To reconstruct such a stage it must be apparent that two or more languages have a certain degree of similarities that could not be due to chance. The pioneering and most thoroughly documented comparative reconstruction is that of Proto-Indo-European (PIE).

According to the major dictum of the linguistic comparative method, sounds do not change randomly but in a regular fashion. Thus, if an original *p changes to [f], as it has in English and other

1. An asterisk before a linguistic form indicates that it has been reconstructed as an earlier manifestation from which modern forms are derived.

Germanic languages as they diverged together from their common Indo-European ancestor, it can be demonstrated to always change to [f] rather than to *b or *h, (or any other consonant) unless some explainable interference ocurred. Thus, the comparative method depends upon the discovery of regular processes of sound change that operate consistently within in a language, and which may become ancestral to a subsequent group of languages. For example, the regular change of *p to *f in ~~English~~ is a Germanic isogloss, one feature of a node in an evolutionary tree model, ~~that~~ shows Germanic languages, ~~including English,~~ to ~~have a common point~~ share a point of divergence from the ancestral stock. Romance languages, such as Spanish and French, have, on the other hand, retained the ancestral PIE *p, but share other reconstructible isoglosses. Another ~~rock provided by~~ tenet the comparative method is that changes are patterned across similar groups of phonemes. Thus, the voiceless PIE stops, *p, *t, and *k have all become spirantized in Germanic while retaining the same (or very similar) points of articulation. In English ~~Thus~~, they have regularized themselves as ~~English~~ as f, th, and h respectively. Comparative linguists ~~must look for~~ rely on such patterned as well as individual sound regularity.

~~With~~ Relying on the comparative method as the only solid ground upon which to build a model of language evolution, I have conducted a detailed, global examination of the world's languages ~~in a search for common ground upon which to base a model of language evolution. The result is a phono-semantic system that~~ finding commonalities of phono-semantic forms for which regularities of sound change can be specified. This search I have called Primordial Language (PL). This is the resultant system construed as the result of a gradual, prehistoric buildup of ~~non-complex, or~~ primary, meaningful oral articulations ~~with meanings~~ called "phonemes"

The semantic content of each of these articulations

These articulations were regularized because each represented a semantic content was based on observed similarities between a type of spatial-relational actions, and an oral articulatory movements. These elemental linguistic forms did not name objects but spatial movements and relationships generalizable to many situations. Although the oral configuration they provided for production of sound, each particular sound was modulated by a particular shaping of the oral cavity. Thus, the analogical process that lay behind production of a meaningful sound was not the sound itself but the similarity of its shaping to other, observable, spatial relationships. At its inception, shaping rather than sound motivated each phonemic meaning. However, the fact that oral shaping allowed for production of contrastive sound was a primary factor in its evolutionary advantage.

I have postulated an initial inventory of these minimal units of sound and meaning, called 'phememes' that probably held until the early Upper Paleolithic, after which increasingly rapid articulation produced phememe concatenations that became secondary sound units in some languages. This began to obscure and the mimetic nature of the units increasingly ceased to be readily apparent as phememes gradually became meaningless phonemes. These secondary units lost the analogical reality of their initial components, becoming meaningless phonemes rather than meaningful phememes. Thus, phememe sequences had become consolidated into words composed of phoneme sequences as meaning was transferred from meaningful sounds to meaningful sound groupings.

The initial inventory provided a consonantal matrix in which each consonant articulation mimicked a particular spatial relationship or movement, of a generic, or abstract nature. For example, the meaning of the lip-projecting plus air expulsion of the mouth movement required for the sound [p] was abstracted as 'protrusion from', while the 'surrounding' or 'circular', con-

figuration produced by the lip-rounding necessary to production of the sound [w] (vocalically [u]) came to represent any similar circularity, including bulk. As a result, the union of the two, *pw, (vocalically [pu]) has the virtually universal meaning of 'blowing' and/or 'swelling'. ~~Thus, in a global random~~ With random selection of languages, we find p^hu- with the meanings of 'blowing' and/or 'swelling' in Tarascan of Mexico, p^hu- or pu- in various words involving breathing or the lungs as well as for budding and swelling in Nyanja of Africa, pu as 'blow, bubble up, boil' and pua as 'bud, flower' in Polynesian Maori, ~~and~~ corresponding to the reconstructed stems *pu- and *phu- in languages with meanings of 'blossom' or PIE, ~~also as~~ 'blow', 'bud', 'swell'. In Sumerian this root is bu- blow'. In Japanese the root is fu-. Sumerian and Japanese have undergone these regular sound shifts as evolutionary isoglosses.

The original, reconstructed, PL *p[2] ~~has been inherited as /p/~~ underwent no sound change in such Indoeuropean languages as Latin, Greek and Sanskrit, ~~but~~ while changes to /f/ in the Germanic languages, ~~such as English~~. In the Afroasiatic languages *p is also realized as /p/, but in Sumerian as /b/. It is likely that at its primordial inception voicing was not distinctive: the phememe could be articulated indiscriminately as [p] or [b]. In ~~cases where voicing became distinctive, differentiating /p/ from /b/, in many languages, as in PIE, *p was differentiated from *b in roots such as that for 'blow, swell'; it became an element in a node. This node is seen to precede the Bronze age because In Sumerian PL *p became /b/, while in Egyptian, as in PIE, it was differentiated as /p/. In Japanese, the /f/ seems to share the Germanic node, but except for positioning before /u/, as in 'blow', the regular reflex of *p is complete loss of the~~

2. ~~An~~ asterisk before a form indicates that is a reconstructed ~~rather than a historically attested form~~.

consonant. More data than single examples are necessary before an evolutionary node can be determined.

The 'forth' or 'forward' thrust of primordial *p, observable in roots for 'blow' can be traced in all languages, if In English, a Germanic language, we find a semantic element of forward motion in such English words as 'forward', 'forth', 'fly', 'flow', etc. The circular semantics of *w (changed to /v/ in many languages), is found in such English words as 'wind', 'weave', 'wool', or 'wring' with a now silent /w/.

From such simple mimetic beginnings, a subsequent stage in the development toward historical language was the concatentation of phememes in order to provide greater semantic specificity, such as that needed for naming, for example. Most modern languages have a majority of two-consonant roots. Although Semitic languages have a three-consonant canon, examination of Arabic shows a recurrent meaning in the initial two-consonant segment.

Other two-consonant segments with same or similar verbal meanings, like *bu- recur globally across established family or stock boundaries. Some examples are *mw- (or with *w realized vocalically as [u]) with meanings of mouth, mouth use, and bodily moisture, *mn- with meanings of stability or staying of action, *wr- with meanings of circular movement or twisting. Singly, as a prototypical phememe, *m had the meaning of 'betweenness', deriving from the bilabiality of the mouth. *w had the meaning of 'surrounding' or 'rounding'. Together, they describe mouth totality, including containment of moisture. *r indicated 'mobility', deriving from the mobility of the tongue within the mouth. In combination, then, *wr had the meaning of circularity

of motion'. *n, 'innerness', or 'that which is within', in conjunction with an initial *m, has a near universal meaning of 'stasis', or 'cessation of action'.

The root *mn in PIE has meanings of both mental activity and stasis. Sharing of semantic extensions of this kind is an indication of a shared past, represented by a branching node in a family tree model. Single examples of semantic extension can be due to chance convergence; multiplicity of examples accompanied by sound regularity must be interpreted as a genetic marker.

Shorter

As an example, ~~starting with~~ *mn is near-universal with the meaning of 'stasis'. Its distribution with the meaning of such mental activities as 'knowing', or 'learning', is more rare and needs examination as a node marker. It is, for example, found in Japanese as manabu 'to learn', and, probably with consonant assimilation in nen 'thought', and in manshin 'pride'; in Aztec as nemachti:l-li 'study, learning'; in Austronesian as *manawa with meanings such as 'feelings, spirit, mind, intelligence'. Here we can suspect an early node to be tested against other possible phono-semantic resemblances, but, more definitively, against shared sound correspondences.

Time and usage have brought about many gradual shifts in pronunciation ~~as well as~~ and meaning. As phonetic divergence becomes more extreme, phonemic realignments may occur. These ~~almost invariably~~ usually preserve phonological features of the parent phoneme, as English has preserved the labiality of the original phoneme *p while shifting the manner of articulation from total to partial stoppage in the change from [p] to [f]. The comparative method was devised to establish regularity of sound change in languages with

both

some apparent phono-semantic similarity. If virtually universal resemblances, such as *mw with mouth or body fluid meanings, are eliminated, but a variety of further sound-meaning similarities are found, a shared history can be postulated if phonological change can also be found to be consistent.

Language, with its human bearers, had a fairly rapid spread of experience; classification because of likeness is clearly apparent in the Pk phonemic inventory of the novel to the known. Linguistic investigation of language change shows that it is not random, but rule-governed. History shows us that particular languages dominate, and often obliterate, earlier languages when their speakers are subjected to outside infiltration, rule, or even demonstrations of new cultural values. Both English and Spanish in the New World are cases in point.

As time went on, and words were further lengthened through compounding, the original sequences tended to be preserved as either word roots or affixes. These, in turn, were often compounded more loosely to form secondary stems, to which forms with pronominal, spatial, temporal, and modal meanings were attached as an outer, syntactically motivated, affixal layer. The segmentation that is possible through linguistic descriptive analysis provides the meaningful forms that are the primes of primordial analysis. While words tend to be lost or replaced over time, these primes, as roots or affixes, tend to be preserved because they are components of more than one word in the language.

The successive accretions probably were in process of solidification during the Upper Paleolithic, and became consolidated during the Neolithic, when increasing separations between groups encouraged change and stylistic variations. By the Bronze Age the global variation was extensive.

The process by which languages as we know them were formed must have been very slow at its inception during the Lower Paleolithic, perhaps during the Acheulean, if not earlier (e.g. Foster 1978, 1990, in press).

Heretofore, linguists doing comparative research have assumed that change over time is so severe that resemblances between related languages are not discoverable if separation occured more than a few millenia before the time that the languages were spoken. Therefore, comparative studies have advanced slowly, with only rare attempts to establish more than one or two stages of separation from a common ancestor.

The discovery of universal phono-semantic, two-consonant concatenations provides a firm basis for the investigation of more remote connections. The universality itself suggests monogenesis, which becomes the rationale for further attempts at reconstruction. The comparative reconstructive methodology of establishment of regularities of sound change remains the basis of reconstructive validity. Each consonant in a universal, or near-universal, segment can be established as the regular reflexion of a particular proto-consonant and can be assumed as such when found in combination with some other consonant. As my analysis progressed, and regularities were registered, I attempted to establish sound regularities corresponding to a hypothetical prototype. I simplified the prototype wherever grounds for assumption of phoneme melding could be established, and readjusting it if a prototypical fit coult be established. If a newly introduced language did not fit the model the model was readjusted. Accordingly, I subtracted or added phememes until newly introduced

languages ceased to pose reconstructive problems. As the reconstruction progressed, shared innovations became increasingly apparent, suggesting shared innovations at differing time depths. This necessitated research on the degree of interrelationship and the time-correlated shared changes.

This is an on-going project that will probably never be completely resolved. It necessitates a complete reorganization of a global family tree model to show nodes at which shared innovation took place. At this stage in the investigation, assessment of borrowing, hence language contact rather than descent, becomes both increasingly relevant and increasingly capable of solution.

Properly used, the comparative method of linguistic reconstruction is a solid rock in what would otherwise be a sea of shifting sands. Some resemblances can always be found between languages. The comparative method can demonstrate whether or not they are due to chance or to shared beginnings. Some resemblances are so widespread that they must be considered universal. Universals point to monogenesis--a single origin for all of the world's languages. If we were to rely alone on such fairly obvious manifestations as [pu] with meanings of 'blow', monogenesis could not be demonstrated. My long-term research project has enabled me to assure myself and some others that monogenesis was, indeed the case and to isolate some (perhaps most) of the features of that earliest language, as briefly illustrated above. It is the recurrence of meanings across the lexicon, in multiple combinations and with accountability to regular sound changes that makes the case compelling. It becomes even more so as reconstruction is refined and more kinds of change are demonstrated. With

recognition of bundles of shared change we can begin to posit the isoglosses that indicate points of shared divergence in a family tree model.

The reliability of the linguistic comparative method in establishing remote language relationships cannot be overstated. It is the only way that suspected language relationships can be confirmed. The existence of Bronze Age writing systems, such as that of Egyptian, greatly assists comparative efforts by providing recorded linguistic time depths of over 5000 years. This has been of crucial value for this analysis.

Bronze Age

To allow greater temporal proximity to early linguistic developments we are fortunate to have written records for some Bronze Age languages--an extraordinary resource that cannot be overestimated. Of these best recorded languages, Sumerian had 15 consonantal contrasts, Hittite seems to have had 16, and Egyptian 26. All had voiced/voiceless stop contrasts., which I have analyzed as secondary concatenations. Otherwise, the Sumerian and Hittite inventories were quite similar to that postulated for PL. The Afroasiatic languages (Egyptian and Semitic) have preserved other contrasts, but have added others because of phoneme coalescence.

Of the few Bronze Age languages which have left decipherable (to date) written records, Egyptian is far the most conservative in retaining phonemes that have disappeared from the others. Like the Semitic languages, Egyptian has preserved a panoply of laryngeal consonants. Unlike the Semitic languages, Egyptian has preserved many early consonant-vowel roots. Semitic languages tend toward three consonant roots in which the bi-consonantal

beginnings may be obscured..

If Egyptian is compared to Proto-Indo-European (PIE), it is possible to trace the development of complex consonants as well as elaborated vocalism which has long puzzled Indo-Europeanists. The most striking feature of Egyptian is its early fusion of consonants with a following semivowel, creating novel secondary phonemes. In PIE, in most cases, the intrusive semivowels tended to become amalgamated with the following vowel nucleus, *a, resulting in a fronting and raising to [e] if the semivowel were [y], and in a backing and lowering to [o] if the semivowel were [u]. In two cases, fusion with the preceding consonant occured: with [kw] producing a new phoneme, /k^{w}/, and [ky] producing a fronted velar /ʀ/.

If we take what we know of PL as a baseline, and work from the top, or earlier, structures down toward those of historic times, we can start to establish isoglosses--shared changes--that show the nodes of the global language family tree.

From those shared beginnings, languages (and the societies in which they were spoken) diverged geographically and phonetically from the common ancestral prototype, and from one another. The comparative method can help us to find points of divergence and the languages that share isoglosses that point to the period of commonality.

The discovery of commonality of sound and meaning between quite a number of word stems and affixes of all of the world's languages opens the door to investigation of unexpected common ground between languages that are geographically isolated from one another, as, say, the English of England is from the English of

Global Comparison

America, South Africa, and Australia. We know how those versions of English got there because of historical records. Lack ofrecords, but access to the linguistic comparative method makes possible the recovery of prehistoric routes of language dispersion. Global comparison Knowledge that all of the world's languages are genetically related opens the possibility of discovering early avenues of language dispersion, recoverable because of the existence of shared patterns of change from the ancestral beginnings. It is these paths of divergence that my research has been focussed on in recent years, and especially those paths that led to language in the New World.

Global ~~Diffusion Comparison~~

By using the phemenic inventory as a starting point for global comparison it is possible to discover comparatively isoglosses ~~The monogenetic model of language origin can be used to work forward from the beginnings over time to discover the shared~~ series of isoglosses that indicate unrecognized prehistoric points of language separation. ~~points of innovation that mark diffusional evolutionary nodes.~~ As was pointed out in the last section, it is possible to work forward from known universals to phememic, and later phonemic, concatenations that mark shared change. Sound-meaning sharing that is found between the known Bronze Age languages, Sumerian, Egyptian, Assyrian and Hittite must point back to the Neolithic or before, unless it can be traced to borrowing. As indicated above, this sharing must be looked for in lexical roots. Whole word similarity would probably indicate borrowing.

Okay put later

Received wisdom has it that all New World peoples, with the languages that they spoke, migrated from Asia across a land bridge connecting the Old and New Worlds across what is now the Bering

Straits, passable until about 10,000 years ago, when no land passage was possible. According to this theory, all American Indian languages began as Asian languages. Also, according to this theory, their genetic relations should be found in Asia. Very little linguistic investigation has gone into this possibility. To date no other inter-continental linguistic connections than the Eskimo have been demonstrated. Since American Indian cultures are known to have originated in the Old rather than the New World, and their adherents must have arrived on these shores with language as well as other cultural artifacts, it seems curious that inter-oceanic linguistic relationships have never been satisfactorily demonstrated despite the fact that the means have been available for the past century and a half. Fixation on the Bering Straits barrier, coupled with the conviction that the great time spans involved would erase similarities, has impeded the search for, or recognition of, resemblances.

With knowledge of the primordial base as a starting point, many points of probable diffusion are recognizable as shared innovations. Using Bronze Age languages as a base, including reconstructed PIE, the comparative method can demonstrate diffusion of at least some key Bronze Age languages, both within the Old World and to the New World ~~While I will focus here on particular points of diffusion between the Old and New Worlds, I will also touch on other globally related areas of diffusion.~~ On the basis of this evidence I will argue that diffusion of peoples and their languages must have taken place by sea at least as early as the Bronze Age. There is now ample evidence that long Pacific voyages were possible even as early as 40,000 years ago, when human occupation of New Guinea and the Bismarck

Archipelago occured (Kirch 1991). These distances are confirmed by the exchanges of goods that took place. Language is also an exchange commodity, so with knowledge of long distance exchanges it becomes impossible to rule out the possibility of transoceanic language diffusion. The linguistic evidence for global contacts is compelling.

The linguistic comparative method makes it possible to discover the patterned regularities that are necessary to making reconstructions that can convincingly demonstrate prehistoric relationships between Old and New World language families. One necessary prerequisite is good dictionaries. The languages of literacy are well-documented. Many linguists have now worked in the New World, devising writing systems for native languages and recording vocabularies and grammatical structures. In the past, the closest relatives of most of the world's languages have been determined by simple inspection and the comparative method was then applied to show shared familial structure. Less has been done in trying to relate famaily to family. It becomes more difficult the more attempts are made to demonstrate common ground.

American linguists are a conservative lot, most of them believing that the only way to proceed comparatively is back from the present by incremental ~~slow~~ steps. I have deviated from standard comparative procedure only in moving from the earliest stage forward, rather than from the latest stages back. Otherwise, the method is the same. It relies completely on ~~the comparative method.~~ regularity and patterning of sound change-

There is one problem with this temporally recessed method. Since the assumption is made on the basis of universal occurence of basic roots that all languages are genetically related, the problem is not in find-

ing relationships, it is in finding the closest relationships between languages that have hitherto been considered unrelated. Thus, it means nothing if I claim that English and Chinese are related. Despite the truth of the statement from a monogenetic standpoint, asserting it is trivial. However, if I say that ancient Egyptian is related to languages of high cultures of Central and South America, as I am about to assert, it is far from trivial because the relationship is such a close one that it can be demonstrated in complete detail by standard use of the comparative method.

Ancient Egyptian is a member of a family called Afroasiatic, formerly referred to as Hamitic-Semitic. Semitic includes such languages of the Middle East as Hebrew and Arabic. Hamitic is a more newly labeled family. Besides Egyptian its most sizable member is Hausa of West Africa. Egyptian is known from its hieroglyphic script. Its only recognized descendent is Coptic, a written language known from religious texts but now extinct.

The Central American languages that I have found to be genetically closely related to Egyptian are the Mixe-Zoquean languages of the Isthmus of Tehantepec in Mexico, and the Mayan languages distributed farther to the south, principally in Yucatan and Guatemala. Mixe-Zoquean is now commonly supposed to be the modern descendent of the language of the ancient Olmec culture (Campbell and Kaufman 1976, Stross 1989). It has long been surmised that there is a genetic relationship between Mayan and Mixe-Zoque but it has resisted reconstruction. Knowledge of Egyptian greatly facilitates this reconstruction.

Probably also to be demonstrated as Egyptoid are the Zapotec and Mixtec languages of southern Mexico. Both are descended from similarly complex Mexican cultures only slightly less ancient than the Olmec. Mayan culture, with many Olmec-derived traits, appeared perhaps half a millenium later.

In the Andes, the first high culture, Chavin, nearly as early as the Olmec, also exhibited Olmecoid characteristics. Other high cultures followed, culminating in the Inca empire. While the language of Chavin has left no written record nor known modern descendent, Quechuan, the language of the ancient Inca of Peru, is closely related to the Egyptoid languages farther north. However, Quechua also contains an admixture of Semitic vocabulary which seems to be Arabic. This is very like the derivation of English from a Germanic source, but with a later, borrowed overlay from French and Latin. Archaeologists have long known that there was Pre-Columbian traffic between Mesoamerica and the Andes, which probably dates back to the Chavin horizon. The Andean precursor of Quechuan probably dates from this period, with a Semitic overlay from later, probably Arabic, contacts.

Witkowski and Brown (1978) have proposed a linguistic phylum called Mesoamerican, which includes Mayan, Zoquean, Huave, Totonacan, Lencan, Jicaque, and the Otomanguean languages, including Zapotec and Mixtec. While the relationships of Zoquean, Mayan and Quechuan to one another and to Egyptian are documented, those of Zapotec and Mixtec to this group are as yet only partially analyzed. I have not yet determined the degree to which all of these exhibit regular sound correspondences to Egyptian and to one another.

Whorf (1948) had earlier suggested that Mayan and Zoquean were genetically related within a phylum called Macro-Penutian, also to include Uto-Aztecan and the Penutian languages of the Pacific Northwest. However, my comparative analyses show both Uto-Aztecan and California Penutian to share a closer genetic relationships with Indo-European, but at different levels, either deriving separately from Proto-Indo-European, or from pre-PIE stages of development. Interestingly, the American linguist, Morris Swadesh (Swadesh and Sancho 1966: 24-26) correctly noted a resemblance between Aztec and Latin, but unfortunately failed to pursue this comparatively, judging it too distant to be amenable to comparative analysis.

Certain other Old World languages, such as Dravidian of India and Austronesian of the South Pacific, share the Afro-Asiatic connection. This needs further examination, but seems to be Egyptoid rather than Semitic. Chinese also shares some of the same characteristics. However, the relative times of branching of these from the common prototype remain to be ascertained. Since, ultimately, all of the world's languages developed from a common prototype, it is always difficult to sort out the exact degree of interrelationships and to establish a family tree model with all of the nodes properly positioned.

From the standpoint of comparative reconstruction Egyptian has one drawback: its vowels were not written in the ancient hieroglyphic script. However, historical knowledge of its one known descendent, Coptic, provides suggestions of Egyptian vocalism, and vowel agreement between the American Egyptoid languages and Coptic (where available) is close. If Dravidian and

Austronesian are included in the comparison, vocalic agreement is even more apparent. Regularity of consonantal reflexes is easily established. Consonantal metathesis is frequent in Mayan and Mixe-Zoquean, following definable rules. Some other consonantal reconstructive problems can be resolved by recourse to Semitic equivalences, for Egyptian and Semitic are not genetically distant. Hausa proves not particularly relevant, for, interestingly enough, Egyptian forms are far closer to their American counterparts than to this established Hamitic relative.

In approaching the problem of the provenience of New World languages it is possible to discover such shared innovations. For example, the PIE root *mn, mentioned above as representing mental activity, as well as many other PIE roots, is found in Uto-Aztecan. The presence or absence in particular languages of such phono-semantic concatenations reflects the continuity or separations of speakers over time. The presence of three-consonant roots or words of the same composition and similar meanings indicates a later stage of separation. The Semitic shift to a three-consonant root canon is such an innovation. Some of this is found in Quechua, indicating extensive borrowing from a Semitic language, that seems to have been Arabic.

It is beyond the scope of this paper to provide a detailed discussion of the reconstructions. Only a brief example of the profusion of cognate sets that exist between Egyptian (Eg)and the Mixe-Zoquean languages of southern Mexico, (hypothesized to derive from the language spoken by the ancient Olmec peoples) is possible. I use a Zoquean language, Sierra Popoluca (ZSP) as ex-

emplary of Zoquean)[3]: Eg[4] hh 'breath, to breathe into, warm wind', ZSP hehket- 'to breathe deeply'; Eg qn, qnw 'seat, chair of state, throne', ZSP ko:ñ- 'to sit'; Eg ?q, ?q? 'to fail, come to an end, die', ZSP ka?- 'to die', Eg hq 'to diminish', ZSP hɨk- 'to ebb away'; Eg tk 'to enter', ZSP tɨkɨy- 'to enter'; Eg m^{h} 'to fill, be full', ZSP *mɨh 'large'; Eg sty-t 'grass, verdure', ZSP so:t^{y}i 'grass'; Eg b? 'to plough, dig, hew stone, break through, force a way', ZSP po? 'to split, give birth'.

A similar multiplicity of equivalent forms also demonstrates a genetic relationship between PIE and Uto-Aztecan. Some examples (using Aztec (Az) as exemplary of UA) are: PIE *pel-, *pol- 'in/of liquidity', Az polactia: 'to submerge something in water', po:loa 'to mix a substance with water'; PIE *wel 'to be strong, able', Az wel 'well, able,possible', weliyo? 'someone powerful, vigorous'; PIE *esr-, *e:sen- 'blood', Az es- 'blood'; PIE *ned- 'to be/come close together', Az netech 'close together, adjacent', netloc 'close to'; PIE de:-, d - 'to bind', Az tetecui:noa: 'to become enmeshed, entangled', tetelic someone grabby', tetloc 'by, close to, next to', tetlan 'near someone'.

Iconography, Words, and Writing

---

3. Examples are especially selected only to assure phonemic equivalences that will not be obscure. In both languages, phonemes and graphic symbols unfamiliar from English are common. The Mixe-Zoquean languages also often rearrange (metathesize) consonant sequences in accordance with specifiable rules. I have tried to eliminate possible confusion in these selections and avoid the need for complex explanation of phonemic rules.
4. Vowels are not written in Egyptian hieroglyphic script.

Iconographic similarity between Old and New World cultures does not in itself serve as proof of the transoceanic relationships proposed, but provides correlative evidence. Proof itself lies in the accuracy of the linguistic analysis, which depends upon sound change regularities and structural identities.

A brief examination of Olmec iconography reveals many similarities with Egyptian. Egyptian costuming, and especially headdresses had great iconographic significance. Male and female clothing and hair styles were similar in the two cultures. Each depicted personage, whether god or ruler, was identifiable because of his characteristic head iconography. Headdresses of Egyptian royalty feature the uraeus, the forepart of a cobra projecting over the monarch's forehead. A similar forehead treatment is found in some Olmec depictions, as is also a sort of double crown, reminiscent of the double crown of Egyptian royalty which celebrates the unification of Upper and Lower Egypt.

Even before the New Empire, Egypt sent expeditions in search of such resources as unusual stones and incense plants. Green and blue stones (serpentine and lapis lazuli in Egypt, and jade in China and Mesoamerica) were accorded special--perhaps sacred--value. Egyptian daily and mortuary religious rites required the use of incense imported from the Arabian and Somali coasts. In China incense was burned to ancestors and household gods. In Mesoamerica, copal incense is still extensively used in worship. These resources must have been sought out by the Egyptians and their sacred uses introduced in the lands in which they were found.

I have wondered if the Egyptians, having successfully crossed the ocean to the west did not still regard that land as the underworld, and in some sense the mirror-image of the world that they had left. This would account for the fact that there was quite strict adherence to specifiable rules of phonological metathesis--transposition of phonemes--from the Egyptian phoneme ordering in the Mixe-Zoque and Mayan languages. The result strikes one almost as the sort of pig-Latin that children quite easily invent. It as if we would decide to say koob instead of book, muck instead of come, or in two syllable words, sorail instead of sailor, or atfer instead of after. Language change generally involves a certain amount of metathesis, but lesser and more random than is the case for these Mesoamerican languages.

A recent article by anthropologist Brian Stross demonstrates an association between the number three and the bloodletting iconography of the Mayas and their Olmec predecessors reflected in homophony of words with disparate meanings and rebus writing discoverable in Mayan hieroglyphs. Mayan ritualized self-blood-letting was performed to assure agricultural fertility. This was carried out with a pointed dagger decorated with three feather plumes appended to a three-pronged element on the handle, which also is surrounded by three horizontal bands, and three circular knots on headdresses in personalized versions. Three-knotted ribbons also figure as a glyph in the Mayan script referring to blood-letting. Another glyph depicts three flint knives held in a row in an open hand with thumb extended. Similar groups of three are found on pottery and stelae depicting blood-letting scenes. Stross traces a pattern of three bars,

circlets, or knots back historically to several Olmec examples, created several hundred years earlier. He also has discovered that in Mixe and Zoque languages, presumably Olmec in origin, the number three reconstructs as *tuk, or *tuku. The Mayan Chontal word meaning 'to bleed someone' is tuk. The Mayan word, glossed variously as 'to prick, break, puncture' and the like, reconstructs as *toq, or *tooq, while cognate words meaning variously 'flint,' 'stab' or 'to let blood' reconstruct as *toq'.

In Mixe-Zoque, in addition to the words for 'three,' *tuk- also translates as 'to cut,' usually 'to cut fruit,' which relates this homophonic complex to the harvest, hence fertility.

Here we leave Stross and go to Egyptian data. In Egyptian, tq (vowels were not written) means 'to cut, slay, strike,' and tqs means 'to pierce, penetrate, to cut, to stab'. This descended to post-Egyptian Coptic as to:kc. Aso in Egyptian tk? means 'grain, fruit. In one Mixe dialect, the verb stem tuk means 'to pick flowers, to harvest beans,' which strengthens the harvest analogy. Similarly, in Egyptian, dq means 'fruit', and tq means 'seeds,' Copt. to:$^{v}_{j}$e. Both Mayan and Mixe-Zoque reflect Egyptian *d as /t/. MZ, and most Mayan languages do not distinguish between *q and *k, reflecting both as /k/, while in MZ *q, *k, and *g all result in /g/. Lack of these distinctions strengthens the case for homophony.

By assuming that Olmecan is reflected in modern Mixe-Zoquean, Stross (1989a, 1989b), effectively demonstrates a rebus approach in Olmec iconography. This proves to be strikingly similar to that of Egyptian, based on a homophonic concurrence of words with differing meaning, much as if we were to illustrate the verb "be'

with a sketch of the insect 'bee'. Egyptian, Chinese, and Mesoamerican writing systems all used such a rebus approach, based on homophonic concurrence of words with differing meanings, as if we were to sketch the insect 'bee' to represent the verb 'be'. Because of resultant ambiguity, classifiers were often included to clarify meaning domains. Like Egyptian, but unlike Chinese, the Mayan system combines this with phonemic glyphs. Some Chinese words for which the original glyph is known, are virtually identical with the Egyptian equivalents. T

The earliest Chinese hieroglyphs, dating from the Shang dynasty, are remarkably similar as to phonological representation, meaning, and graphic design. Thus, we find very similar forms that represent both visually and orally the words for 'man,' 'sun,' 'moon,' and 'rain'. 'Man', represented by a stylized man glyph, is vocally ren in Chinese, and rm in Egyptian. In both, The glyph for 'sun' is a circle with a central mark. Vocally this is rih in Chinese, and re' in Egyptian, but pronounced re: in Coptic. Similarly, 'moon' is represented by virtually identical, vertically placed, half-moon glyphs in both scripts. In Chinese, 'moon' is yueh. Egyptian $i^{\cdot h}$, 'moon' was pronounced $yoi^{\cdot h}$ in Coptic.

Eye treatment in dipiction of Olmec deities shows similarity to Egyptian figuring of the eye of Horus.

Although Olmec sculptures seem to resemble scenes rather than scripts, decorative shapes very often resemble Egyptian glyphs and combinations of these reveal messages that can to some extent be deciphered. The ancient Maya combined glyphs, with or without surrounding cartouches, with sculptures, so the shapes may well be

Olmec glyphs. These sculptures reveal enough similarity to Egyptian hieroglyphics to suggest that writing also had a place in Olmec culture, perhaps occuring largely on perishable materials.

Stross (1989b) describes a rebus association between the number three and the bloodletting iconography of the Maya and their Olmec predecessors. Ritualized self-blood-letting to assure agricultural fertility is shown as performed with a dagger decorated with three feather plumes appended to a three-pronged element on the handle. The handle is also surrounded by three horizontal bands. Personalized versions show three circular knots on headdresses. Three-knotted ribbons also figure as a glyph referring to blood-letting. Another glyph depicts three flint knives held in a row in an open hand with thumb extended. Similar groups of three are found on pottery and stelae depicting blood-letting scenes. Stross traces the Maya pattern of three bars, circlets, or knots back to Olmec examples. He also has discovered that in the , presumably Olmec, Zoquean languages, the number three reconstructs as *tuk, or *tuku. *tuk also translates as 'cut,' usually 'cut fruit,' which relates this homophonic complex to the harvest, hence fertility. The Chontal Mayan word meaning 'to bleed someone' is tuk. A reconstructed Mayan word, glossed variously as 'to prick, break, puncture' and the like, reconstructs as *toq, or *tooq, while words meaning variously 'flint,' 'stab' or 'to let blood' reconstruct as *toq'.

Egyptian equivalences for this rebus are easily found. tq means 'cut, slay, strike,' and tqs means 'to pierce, penetrate, to cut, to stab'. The vowel nucleus is represented in post-Egyptian Coptic as to:kc. Also, in Egyptian tk? means 'grain, fruit.' In

one Mixe dialect, the verb stem tuk means 'to pick flowers, to harvest beans,' which strengthens the harvest analogy. Rebus homophony is probably nowhere necessarily exact. Egyptian rebus homophony required only the agreement of consonants, with weak consonants often disregarded (Fischer 1989: 63). Zoquean and many Mayan languages have conflated *q and *k, so that a contrast no longer exists.

A story that I took down in text many years ago from a Sierra Popoluca (Zoque) informant long puzzled me because of its Osiris-like theme: a god of vegetation and fertility who annually dies and is reborn. In the Popoluca tale, the hero, called Homshuk, is born from an egg found by an old woman who saw its reflection in the water below from its place on a rock above a river. She brought it home but hidit from her husband, until a baby hatches from it, then matured in seven days to become a naughty and precocious child. He thoroughly disrupts the life of his adoptive grandparents because he persists in killing their birds and fish, and finally, with the assistance of a throat-cutting, blood-letting bat, he slaughters the grandfather, then, through his own ingenuity immobilizes the grandmother. He then crosses the ocean on the back of an accomodating tortoise, and through his cleverness, coupled with help from still other animals, he conquers the powerful Hurricane, lord of the winds, who rules the land on the far side of the water. At the end of the story it is revealed that he is himself the maize, which withers and dies, only to sprout anew each year. The message is clear that it is he alone who controls nature and is responsible for death and rebirth.

Not long ago, an Olmec male statue was discovered in Mixe-Zoque country. Like Homshuk, the image sprouts maize leaves and ears from all of his joints.

Birth from an egg is a common Old World folk theme. Also, other Bronze Age peoples than the Egyptians worshipped fertility deities who died and were resurrected like Osiris. For the Egyptians, the afterworld lay across the sea to the west, where the sun sets, on the far side of the Atlantic ocean. The spirit of the deceased was carried there by the sacred boat of Re, the sun god, to this afterworld, which was both west and below. Osiris, as a consequence of his death and resusitation, became king of the underworld and god of the dead. The Popoluca word for 'wind,' sawa comes from the Egyptian root sw-. The Popoluca name for the lord of the wind, Masawa, includes an introductory morpheme ma-, which perhaps derives from Egyptian m^{h}- 'north'. The Norte, 'north wind' in southern Mexico is destructive, like Masawa, and needs to be controlled, a deed accomplished by Homshuk.

The etymology of the name, Homshuk, is complicated by both the problem of possible metathesis and that of probable root compounding. The closest possibility seems to be derivation from Egyptian ^{h}msy 'phallus', because of metaphoric correlations between the phallic shape of an ear of corn and the fertility theme in the Homshuk story. The phonemic shape, ^{h}m, also recurs in a variety of Egyptian words with meanings reflected in the Homshuk story: ^{h}m? 'to fish, to hunt', ^{h}m? (Coptic hmow) 'sea salt' (reflecting the sea crossing), ^{h}m?-t 'salt land, the shore of a salt lagoon' (where Homshuk sat drumming before his sea crosss-

ing), $h_{\dot{}}$msy 'to sit, to dwell' (Copt. hmoots), hm 'majesty, priest, servant, skill in a trade or profession', Hm?g 'a title of Osiris'.

The possibility of a correlation of the Olmec ritual blood-letting with the action of the bat in the Homshuk story suggests that the Egyptian word for bat, d?gi, may also be relevant to the set of word with meanings of 'stab, prick', and 'three' mentioned above. The Mixe-Zoquean word, *tɨsi, is clearly not cognate with the Egyptian, but does seem to be a nominalized and metathesized cognate of Egyptian st, 'to cut, bite, break'.

While hieroglyphic writing does not feature prominently in the earliest Mesoamerican stone sculpture, comparison of Egyptian hieroglyphic symbols with markings on Olmec sculptures reveals similarities that suggest that writing did, indeed, have a place in Olmec culture. It perhaps occured largely on perishable material, as it did, for example, on bone in China. No bone with Olmec associations has survived the damp tropical climate of the Olmec area. In any case, it seems fairly certain that writing and calendrical glyphs of the Zapotec Monte Alban horizon, as well as those of the Mixtec and Maya, derived from the earlier Olmec culture (Caso 1965:931-932, Bernal 1965:799).

Lexical cognates seem to indicate that writing on some form of paper, probably bark, did exist in Olmec times. These are: Eg h?yw 'writing, deed, document', h?, and h?y 'papyrus', Zoquean *hay, Mixean ha?y 'to write', Mayan *hu?- + (variously) -m/n/x/w 'paper'; Eg sb? 'to teach, learn', sb?-t 'teaching, education, lore of books', Mayan tz'ib 'to paint, write', tz'ibab 'secretaries, scribes' (Tzotzil), and eg hn 'a scribe's writing

box', Mayan hun 'letter, book, paper' (Tzeltal).

Calendrical Correlations

Languages of both Old and New World cultures show genetic relationships with ancient Egyptian. In the Old World, these are Dravidian of southern India, Chinese, and Austronesian. In the New World they are the Mixe-Zoquean and Mayan languages of MesoAmerica, and Quechuan of South America. Other languages are probably also implicated, but this is less certain.

Some striking coincidences of early dates provide historical evidence that is supportive of Egyptian overseas contacts. The Olmec culture, probably ancestral to Mixe-Zoquean appeared abruptly in Mexico around 1500 BC. At a similar date so also did the Chavin civilization in the Andes, with cultural similarity to the Olmec. The Chinese language was first recorded on oracle bones associated with the Shang culture, which also appeared at around 1500 B.C. At this time in Egypt the Hyksos conquerers were expelled and the New Empire began with extensive voyages by both land and sea for exploration, conquest, trade, and exploitation of new resources. Ships capable of carrying heavy loads of cargo and men had been available for at least 1000 years, so oceanic voyages were clearly possible.

It has been speculated that Dravidian of southern India may have been the language of the as yet undeciphered texts associated with this civilization. In 2613 BC In Egypt, the Old Kingdom began with the 4th Dynasty. The Old Kindom was a classic period of Egypt's greatness, during which the great pyramids were built

as monuments to successive kings, military expeditions were undertaken, and 40 well-laden vessels were said to have brought loads of timber from Lebanon, so a crossing to the Indus Valley was feasible.

There has long been speculation of Chinese artistic influence in ancient Mesoamerica. While Heine-Geldern (1966) dates this only to about 700 B.C., Shao (1983) relates it to the earlier Olmec horizon. Linguistic evidence should ultimately reveal if the shared Egyptian elements found in the New World point to a single or multiple contacts. A mixture of races in Egypt, long a crossroads between Africa and Asia, easily accounts for the existence of African models for the Olmec giant head sculptures, as well as for the singularly contrastive, thin-lipped, bearded figures.

While there are differences in calendrical groupings in the various cultures under discussion, they agree in registering 360 days grouped into months, followed by a final extra five days.

A very striking calendrical correlation between Egypt and the New World is that the Mayan calendrical day count projects the beginning of Mayan time backward to a starting date that is equivalent to the Julian calendar date of September 7, 3114 B.C. (Lounsbury 1989:205). 3100 B.C. dates the beginning of the first Egyptian dynasty, commemorated as the time of the unification of Upper and Lower Egypt, and the beginning of recorded Egyptian history.

Global Movement in the Bronze Age

Because some connections between Old and New World languages are so close as to throw doubt on an exclusive scenario of ancient Bering Straits crossings, migration theories will need revision. This seems particularly true of the Afro-Asiatic ties to the New World, while an explanation of Uto-Aztecan-Indo-European affiliation as a result of migrations via the Bering route may still obtain.

In view of the cultural capabilities of the Egyptians, it is perhaps not surprising that Egyptian ships reached the New World. The sea voyage to Punt--an undetermined destination, but assumed to be somewhere on the coast of Africa--is the longest recorded. Since Egyptian ships were entirely of vegetable materials no vestiges of them in the New World were likely to survive.

The Mayan origin myth, the Popol Vuh (Edmunson 1971), tells of a group of four great sages who arrived on the sea coast and found nothing, so they created everything themselves. I have correlated their Quiche Mayan names with Egyptian, supplying hypothetical vowels, omitted in the Egyptian script, for greater clarity. These names were: 1. q'uq' kumatz. Q'uq',meaning Quetzal,' and 'precious,' accords with a syllabic reduplication of Egyptian *qw?, meaning 'exalted one, a god.' Kumatz, with meanings of 'snake' and 'sinuous thing' probably accords with Egyptian *gmsh 'hair, lock, tress' 2. The root *tep-, of Tepev,'ruler', accords with Egyptian *tp 'head, chief'. 3. Tzakol, 'creator, maker' accords with Egyptian *tzk 'to bring into being'. 4. Bitol, 'shaper,' accords with Egyptian *bty 'mould'.

Conclusions

A wider Egyptian influence in the New World than that proposed here is very probable, with languages either splitting off from an Olmec prototype, or perhaps introduced through successive oceanic crossings.

The comparative linguistic data on which this paper is based are too complex and specialized to be appropriate for a short discussion, and must be left to specialists to evaluate. The ultimate acceptibility of my transoceanic argument rests largely on a careful review of my linguistic analysis. In addition, a thorough iconographic comparison, coupled with linguistic equivalences represented in glyphs, will uncover a great deal of cultural evidence which should prove as relevant to cultural geographers as to linguists and archaeologists.

Partial revision Computer code: LOSREV. 93

Old World Language in the Americas

Mary LeCron Foster

Department of Anthropology, University of California, Berkeley.

Long term comparative research on global linguistic relationships demonstrates that the world's languages stem from a single, monogenetic source ~~(e.g. Foster 1977, 1990)~~. This position is supported by a global comparative analysis of modern and historically attested languages (e.g. Foster 1977, 1990). Since biological and archaeological anthropologists have similarly hypothesized that humankind itself had a single origin in Africa, it is probable that language and tool-making developed in tandem as cultural corollaries to a biological evolutionary imperative.

I have hypothesized elsewhere (Foster 1991) that language, like tool-making and use, emerged slowly throughout the Middle Pleistocene, and that the same emergent cognitive capacities predetermined and shaped both domains. I have also argued (Foster, 1990) that the expanding hominid capacity for analogical thinking was the driving factor in ~~the~~ initiating and perfecting ~~of~~ both skills, developing ~~resulting in~~ the complex systematization that underlies all or culture.

The primordial linguistic model is not valid only as an explanation of how language came into being in the Paleolithic; it also provides a base-line for increased understanding of prehis-

toric language change--or how language became languages during subsequent eras--especially during the Neolithic and Bronze Age.

What I am proposing in this paper is that at least some New World linguistic stocks and families derive from Old World languages, and that there must have been contact between the hemispheres by sea during the Bronze Age rather than solely earlier by means of the Bering land bridge as is commonly supposed. I have accumulated a considerable body of supportive evidence for this position, much of which must await later, more technically elabaorated, treatment than it is possible to provide in this paper.

Primordial Language as a Comparative Base Line

Linguistic investigation during the late nineteenth and early twentieth century demonstrated that where two or more language share a common line of descent the regularity of divergent sound changes makes possible the recovery of the parent language. The pioneering and most thoroughly comparative reconstruction to date is that of Proto-Indo-European (PIE).

The major tenet of the linguistic comparative method, is that sounds do not change randomly but in a regular fashion. Thus, if an original *p[1] changes to [f], as it has in English and other Germanic languages as they diverged together from their common Indo-European ancestor, it can be well demonstrated to always change to [f] rather than to [b] or [h] (or any other consonant) unless some ex-

1. A preposed asterisk marks a reconstructed phoneme.

plainable interference ocurred. Thus, the comparative method depends upon the discovery of regular processes of sound change that operate consistently within ~~in~~ a language, ~~and which may become ancestral to a subsequent group of languages.~~ For example, the regular Germanic change of *p to *f is an isogloss: a feature sharing a node in an evolutionary tree model--a point of divergence from the ancestral stock. ~~Romance languages, such as Spanish and French, have, on the other hand, retained the ancestral PIE *p, but share other contrastive isoglosses.~~

Another tenet of the comparative method is that changes are patterned across similar groups of phonemes. Thus, the voiceless PIE stops, *p, *t, and *k have all become spirantized in Germanic while retaining the same (or very similar) points of articulation, becoming ~~spirantally~~ patterned in English as f, ~~th~~ and /h/ respectively. To establish genetic relationships, comparative linguists must look for ~~pattern~~ as well as individual sound regularity.

Time and usage have brought about many gradual shifts in pronunciation as well as meaning. As phonetic divergence becomes more extreme, phonemic realignments may occur. These most frequently preserve phonological features of the parent phoneme, ~~or even the ancestral phoneme,~~ as English has preserved the labiality of *p while shifting the manner of articulation from total to partial ~~stoppage~~ in the shift from the stop [p] to the spirant [f].

Time and usage also bring about semantic modifications. Often the motivation for these can be discovered. In other cases it has become obscured. But like phonological modifications, in general some feature of the original meaning will be retained, ~~as~~,

~~for example in sets with divergent meanings such as the semantic progression of 'blow--breathe--swell--bud--grow'~~.

Relying on the comparative method as the only solid ground upon which to build a model of language evolution, I have conducted a detailed, global examination of the world's major, and many minor, language families, searching for commonalities of phono-semantic forms with specifiable sound-change regularities. ~~evolution.~~ Through trial and error I have ~~gradually~~ uncovered an ancestral phono-semantic system that I have called Primordial Language (PL). This consists of an elementary, patterned complex, of primary, oral articulations to which the phonemic systems of historic and modern languages are genetically related through systematic sound changes. Unlike the phonemes of language as we know it, these articulations are endowed with semantic content. I have called these linguistic primes phememes: minimal elements of sound and meaning. In every language secondary phonemes have resulted from combinations of these additional units.

The semantic content of each phememe derived from a perceived similarity between a specifiable spatial-relational configuration and a particular oral articulatory movement. Phememes ~~did not name~~ that could be used mimetically to represent or represented nor objects themselves but spatial movements and relationships capable of generalization to many situations. In this sense meanings were abstract rather than concrete.

Shape rather than sound motivated the semantics of each phememic articulation. However, the fact that each shaping could carry contrastive sound as air passed through the oral tract provided a crucial evolutionary advantage as a communicational device.

The initial phememic inventory perhaps endured relatively unchanged until the early Upper Paleolithic, after which increas-

ingly rapid articulation produced phememe concatenations that became secondary sound units in some languages and provided semantic units of greater specificity such as a potential for naming.

These units became the semantic building blocks that are still discernible as roots and affixes in many languages. Their degree of retention over time is due to the fact that they ~~are~~ rarely constitute whole words, but instead ~~are~~ recurrent as parts of words. Where single words are frequently lost over time, recurrent segments are retained because of such multiple manifestations. The mimetic nature of the units increasingly ceased to be readily apparent as rapidity of speech + concatenation of forms caused meaningful phememes became meaningless phonemes. ~~These secondary units lost the analogical reality of their initial components, becoming meaningless phonemes rather than meaningful phememes.~~ Thus, phememe sequences had become consolidated into words composed of phoneme sequences as meaning was transferred from meaningful sounds to meaningful sound groupings, ensuring a high degree of recoverability.

As concatenations of phememes became regularized as words, further processes of concatenation added semantic refinements. Two-phememe words often remained standardized as roots to which further affixes could be attached. In other cases, further affixation or compounding became standardized to such an extent that the lengthened complex itself became a root. This can be exemplified by a series of English words containing the original PIE root *pl with meanings of 'loose motion', often watery. In English this metamorphosed to /fl/, and is found initially in such root words as 'float, fly, flee, flutter, flash, fling, flail', or with intervening vowels in 'fill, full, fall, fell'.

The primordial semantics of this consonantal concatenation can be further explored. The meaning of the lip-projecting plus air expulsion of the mouth movement required for the phememe *p recurs across languages as 'protrusion/extension from', while the various manifestations of the phememe *l preserved as /l/ in English, but according to other isomorphic shifts often metamorphosed, perhaps to /y/or /r/ had the primordial meaning of 'looseness' or 'flexibility', in analogy to the tongue movement involved in its production.

Another virtually universally discoverable root linkage, *p plus the phememe *w, occurs in words containing the meaning of 'blowing, burgeoning' or 'swelling'. The phememic meaning of *w was 'surrounding, circular, turning' or 'bulk', resulting from the the lip-rounding necessary to production of the consonant [w], or its vocalic counterpart [u]. The circular semantics of *w (changed to /v/ in many languages), is found in such English words as 'wind', 'weave', 'wool', or 'wring', with a now silent /w/. The universality of *pw may be exemplified in a random selection of languages: p^hu-, with the meanings of 'blowing' and/or 'swelling' in Tarascan of Mexico, p^hu- or pu- in various words involving breathing or the lungs as well as for budding and swelling in Nyanja of Africa, pu as 'blow, bubble up, boil' as well as pua as 'bud, flower' in Polynesian Maori, and the reconstructed stems *pu- and *phu- in PIE, also as 'blow', 'bud', 'swell'. In Sumerian this root is bu-, meaning 'blow'. In Japanese the root is fu-. The consonantal shifts from primordial [p] in these languages are the result of regular sound changes.

Single consonant morphemes are absent or rare as roots in most languages. They exist more commonly as affixes. However, because they are very frequently retained subradically, as is *pl in the English words with initial fl- listed above, even as root partials they may provide the fundamental forms for long-range comparative research. If a number of such groupings do occur as roots in a series of languages those languages are probably fairly closely related, and certainly so if shared phonological isoglosses are also found.

Language, with its human bearers, had a fairly rapid spread. Linguistic investigation of language change shows that it is not random, but rule-governed. History shows us that particular languages dominate, and often obliterate, earlier languages when their speakers are subjected to outside infiltration, rule, or even demonstrations of new cultural values. Both English and Spanish in the New World are cases in point.

The successive accretions probably were in process of solidification during the Upper Paleolithic, and became consolidated during the Neolithic, when increasing separations between groups encouraged change and stylistic variations. By the Bronze Age the global variation was extensive.

The process by which languages as we know them were formed must have been very slow at its inception during the Lower Paleolithic, perhaps during the Acheulean, if not earlier (e.g. Foster 1978, 1990, in press).

Heretofore, linguists doing comparative research have assumed that change over time is so severe that resemblances between re-

Old World Language in the Americas

Mary LeCron Foster

Department of Anthropology, University of California, Berkeley.

Paper prepared for the annual Meeting of the Language Origins Society, Cambridge University, Cambridge, England, September 1992.

At earlier meetings of the Language Origins Society, I have focussed on language origin. This time I am going to talk about origins. The single origin model that I have been refining down (eg. Foster
the years is not just valid as an explanation of how language came into being in the Palaeolithic, but it also provides a base-line for language change--or how language became languages during subsequent eras--especially during the Neolithic, and on into the Bronze Age.

What I have called Primordial Language (PL) is a buildup of non-complex, or primary, oral articulations with consistent semantic content. I have speculated that this was the inventory of phememes (minimal units of sound and meaning) that probably held until the early Upper Paleolithic, after which phememe concatenations created secondary phonemes in some languages. Phememe sequences had become consolidated into words, which then often remained as word roots, which, in turn, were often compounded more loosely with other roots to form secondary stems, to which forms with pronominal, spatial, temporal, and modal meanings were attached as an outer, syntactically motivated, layer. These later accretions probably were in process of formation during the Upper

Paleolithic, and became consolidated during the Neolithic, when separations between groups encouraged change and stylistic variations. By the Bronze Age the global variation was extensive.

Unlike for earlier language, we have written records for some Bronze Age languages--an extraordinary resource that cannot be overestimated. Of these best recorded languages, Sumerian had 15 consonantal contrasts, Hittite seems to have had 16, and Egyptian 26. All had voiced/voiceless stop contrasts., which I have analyzed as secondary concatenations. Otherwise, the Sumerian and Hittite inventories were quite similar to that postulated for PL.

Worldwide exploration of language resemblances by means of the comparative method--the linguistically well-established method of certifying historical genetic relationships--has made it possible to delineate some language families and stocks, and to hypothesize some further groupings. In the effort to lump more and more languages together, some researchers, most notably Greenberg, have bypassed the comparative method and suggested groupings born out by nothing more than some perceived resemblances between certain languages. On this basis, Greenberg has postulated a macro-grouping of American Indian languages.

This hypothesis cannot be sustained. Resemblances between all of these languages are observable, simply because all languages stem from PL. It is not true, as Greenberg and others have assumed, that the comparative method is useless at greater time depths. If we take what we know of PL as a baseline, and work from the top, or earlier, structures down toward those of historic times, we can start to establish isoglosses--shared changes--that show the nodes of the global language family tree.

Languages of the first high cultures in the Americas prove to have a close genetic relationship to languages spoken by members of one of the earliest high cultures in the Old World. Specifically, the Mixe-Zoque languages of southern Mexico, hypothesized to derive from the language spoken by the Olmec peoples, and ~~as well~~ as the Mayan languages of Mexico and Central America, are demonstrably closely related to, and probably descended from, ancient Egyptian. Quechua, the language of the ancient Incas of South America, exhibits a similar relationship to Egyptian but with what seems to be a later Arabic overlay. This is very like the derivation of English from a Germanic source, but with a later, borrowed overlay from French and Latin.

Egyptian hieroglyphs registered consonants, but not vowels. The only hitherto known Egyptian daughter language, Coptic, sheds some light on earlier vocalism, while vowel agreement between the American Egyptoid languages and Coptic (where available) is close. Consonant reflexes are regular. Consonantal metathesis is frequent, but follows definable rules.

In a separate development, another major language family of North America, Uto-Aztecan, proves to derive either from Proto-Indo-European, or from a pre-PIE stage. Interestingly, the American linguist, Morris Swadesh (19), was aware of striking similarities between Latin and Aztec, but failed to explore this by means of the comparative method. On a still earlier level, the Afro-Asiatic languages, including Egyptian and Arabic, are themselves related to Proto-Indo-European. Certain other Old World languages, such as Dravidian of India and Austronesian of the South Pacific, share the Afro-Asiatic connection. This needs fur-

ther examination, but seems to be Egyptoid rather than Semitic. shows striking afroasiatic resemblances, not yet explored in detail
Chinese also ~~derives from the same source~~. However, the relative times of branching of these from the common prototype remains to be ascertained. Since ultimately, all of the world's languages developed from a common prototype, it is always difficult to sort out the exact degree of interrelationships and to establish a family tree model with a high degree of solidity.

Linguistic reconstruction across hitherto postulated genetic boundaries demonstrates that Afro-Asiatic languages, and in particular ancient Egyptian, are genetically close, and possibly ancestral, to a group of geographically distant languages in both the Old and New Worlds. In the Old World these include Dravidian of southern India, Chinese, Malayo-Polynesian; and in the New World, Quechua of the South American Andes, and such Mesoamerican languages as Zoquean, Mayan, Zapotec, and Mixtec.

In Mexico, Zoquean (with Mixe and Zoque subgroups) is now believed to be the modern descendent of the language of the ancient Olmec culture (Campbell and Kaufman 1976, Stross 1989). The Zapotec and Mixtec languages are descended from similarly complex Mexican cultures only slightly less ancient than the Olmec. Mayan culture, with many Olmec-derived traits, appeared perhaps half a millenium later. In the Andes, the first high culture, Chavin, nearly as early as the Olmec, also exhibited Olmecoid characteristics. Other high cultures followed, culminating in the Inca empire, linguistically Quechuan. While closely related to the Egyptoid languages further north, Quechua also contains an admixture of Semitic vocabulary which seems to be Arabic. Archaeologists have long known that there was Pre-Columbian traf-

fic between Mesoamerica and the Andes, which probably dates back to the Chavin horizon.

Witkowski and Brown (1978) proposed a linguistic phylum called Mesoamerican, which included Mayan, Zoquean, Huave, Totonacan, Lencan, Jicaque, and the Otomanguean languages, including Zapotec and Mixtec. I have not yet determined the degree to which all of these exhibit regular sound correspondences to Egyptian and to one another. Whorf (1948) suggested that Mayan and Zoquean were genetically related within a phylum called Macro-Penutian, also to include Uto-Aztecan and the Penutian languages of the Pacific Northwest. However, my comparative analyses show Uto-Aztecan and California Penutian to share a closer genetic relationships with Indo-European. While I find Indo-European to be distantly related to Afroasiatic, the Penutian and Uto-Aztecan relationship to Egyptian is considerably more remote than that of the linguistic group discussed here. Interestingly, Swadesh (Swadesh and Sancho 1966: 24-26) correctly noted a resemblance between Aztec and Latin, but unfortunately failed to pursue this comparatively.

The reliability of the linguistic comparative method in establishing remote language relationships cannot be overstated. It is the only way that suspected language relationships can be confirmed. The existence of Bronze Age writing systems, such as that of Egyptian, greatly assists comparative efforts by providing recorded linguistic time depths of over 5000 years. This has been of crucial value for this analysis.

Coincidences of early dates correlate strikingly with Egyptian history. In the Old World, it has been speculated that

Dravidian of southern India may have been the language of the Indus valley culture, dated from about 2500 B.C. In Egypt, the Old Kingdom began with the 4th Dynasty in 2613 B.C. The Old Kindom was a classic period of Egypt's greatness, during which the the great pyramids were built as monuments to successive kings, military expeditions were undertaken, and 40 well-laden vessels were said to have brought loads of timber from Lebanon, so a crossing to the Indus Valley was feasible.

The Chinese language was first recorded on oracle bones associated with the Shang culture, which appeared at around 1500 B.C. The Olmec culture appeared equally abruptly in Mexico at about the same date, as did the first Andean high culture, Chavin. In Egypt, this period initiated an intense period of conquest and organized rule abroad. The invading Hyksos conquerers were expelled and the New Empire began with the 18th Dynasty. Voyages by both land and sea for exploration, resource exploitation, conquest, and trade were common. Ships capable of carrying heavy loads of cargo and men had been available for at least 1000 years, so oceanic voyages were clearly possible.

There has long been speculation of Chinese artistic influence in ancient Mesoamerica. While Heine-Geldern (1966) dates this only to about 700 B.C., Shao (1983) relates it to the earlier Olmec horizon. Linguistic evidence should ultimately reveal if the shared Egyptian elements found in the New World point to a single or multiple contacts. A mixture of races in Egypt, long a crossroads between Africa and Asia, easily accounts for the existence of African models for the Olmec giant head sculptures, as well as for the singularly contrastive, thin-lipped, bearded

figures.

In view of the cultural capabilities of the Egyptians, it is perhaps not surprising that Egyptian ships reached the New World, although the sea voyage to Punt--an undetermined destination--is the longest recorded. Since Egyptian ships were entirely of vegetable materials no vestiges of them were likely to survive. The Mayan origin myth, the Popol Vuh (Edmunson 1971), tells of a group of four great sages who arrived on the sea coast and found nothing, so they created everything themselves. I have correlated their Quiche Mayan names with Egyptian, supplying hypothetical vowels, omitted in the Egyptian script, for greater clarity. These names were: 1. q'uq' kumatz. Q'uq',meaning Quetzal,' and 'precious,' accords with a syllabic reduplication of Egyptian *qu?, meaning 'exalted one, a god.' Kumatz, with meanings of 'snake' and 'sinuous thing' probably accords with Egyptian *gumash 'hair, lock, tress' 2. The root *tep-, of Tepev,'ruler', accords with Egyptian *tep 'head, chief'. 3. Tzakol, 'creator, maker' accords with Egyptian *tzak 'to bring into being'. 4. Bitol, 'shaper,' accords with Egyptian *boty 'mould'.

Examination of Olmec iconography reveals many similarities with Egyptian. Egyptian costuming, and especially headdresses had great iconographic significance. Male and female clothing and hair styles were similar in the two cultures. Each depicted personage, whether god or ruler, was identifiable because of his characteristic head iconography. Headdresses of Egyptian royalty feature the <u>uraeus</u>, the forepart of a cobra projecting over the monarch's forehead. A similar forehead treatment is found in some Olmec depictions, as is a sort of double crown, reminiscent of the

double crown of Egyptian royalty which celebrates the unification of Upper and Lower Egypt.

Egyptian, Chinese, and Mesoamerican writing systems all used a rebus approach, based on homophonic concurrence of words with differing meanings, as if we were to sketch the insect 'bee' to represent the verb 'be'. Because of resultant ambiguity, classifiers were often included to clarify meaning domains. Like Egyptian, but unlike Chinese, the Mayan system combines this with phonemic glyphs. Stross (1989a, 1989b), assuming that the Mixe-Zoque languages are descendents of Olmecan, effectively demonstrates the Olmec origin of rebus forms in the New World.

Some Chinese words for which the original glyph is known, are virtually identical with the Egyptian equivalents. The earliest Chinese hieroglyphs, dating from the Shang dynasty, are remarkably similar as to phonological representation, meaning, and graphic design. Thus, we find very similar forms that represent both visually and orally the words for 'man,' 'sun,' 'moon,' and 'rain'. 'Man', represented by a stylized man glyph, is vocally ren in Chinese, and rm in Egyptian. In both, The glyph for 'sun' is a circle with a central mark. Vocally this is rih in Chinese, and re' in Egyptian, but pronounced rei in Coptic. Similarly, 'moon' is represented by virtually identical, vertically placed, half-moon glyphs in both scripts. In Chinese, 'moon' is yueh. Egyptian $i^{\cdot h}$, 'moon' was pronounced yoi^{h} in Coptic.

Although Olmec sculptures seem to resemble scenes rather than scripts, decorative shapes very often resemble Egyptian glyphs and combinations of these reveal messages that can to some extent be deciphered. The ancient Maya combined glyphs, with or without

surrounding cartouches, with sculptures, so the shapes may well be Olmec glyphs. Stross (1989b) describes a rebus association between the number three and the bloodletting iconography of the Maya and their Olmec predecessors. Ritualized self-blood-letting to assure agricultural fertility is shown as performed with a dagger decorated with three feather plumes appended to a three-pronged element on the handle. The handle is also surrounded by three horizontal bands. Personalized versions show three circular knots on headdresses. Three-knotted ribbons also figure as a glyph referring to blood-letting. Another glyph depicts three flint knives held in a row in an open hand with thumb extended. Similar groups of three are found on pottery and stelae depicting blood-letting scenes. Stross traces the Maya pattern of three bars, circlets, or knots back to Olmec examples. He also has discovered that in the , presumably Olmec, Zoquean languages, the number three reconstructs as *tuk, or *tuku. *tuk also translates as 'cut,' usually 'cut fruit,' which relates this homophonic complex to the harvest, hence fertility. The Chontal Mayan word meaning 'to bleed someone' is tuk. A reconstructed Mayan word, glossed variously as 'to prick, break, puncture' and the like, reconstructs as *toq, or *tooq, while words meaning variously 'flint,' 'stab' or 'to let blood' reconstruct as *toq'.

Egyptian equivalences for this rebus are easily found. tq means 'cut, slay, strike,' and tqs means 'to pierce, penetrate, to cut, to stab'. The vowel nucleus is represented in post-Egyptian Coptic as to:kc. Also, in Egyptian tk? means 'grain, fruit.' In one Mixe dialect, the verb stem tuk means 'to pick flowers, to harvest beans,' which strengthens the harvest analogy. Rebus

homophony is probably nowhere necessarily exact. Egyptian rebus homophony required only the agreement of consonants, with weak consonants often disregarded (Fischer 1989: 63). Zoquean and many Mayan languages have conflated *q and *k, so that a contrast no longer exists.

While hieroglyphic writing does not feature prominently in the earliest Mesoamerican stone sculpture, comparison of Egyptian hieroglyphic symbols with markings on Olmec sculptures reveals similarities that suggest that writing did, indeed, have a place in Olmec culture, it perhaps occured largely on perishable material, as it did, for example, on bone in China. No bone with Olmec associations has survived the damp tropical climate of the Olmec area. In any case, it seems fairly certain that writing and calendrical glyphs of the Zapotec Monte Alban horizon, as well as those of the Mixtec and Maya, derived from the earlier Olmec culture (Caso 1965:931-932, Bernal 1965:799). While there are differences in calendrical groupings in the various cultures under discussion, they agree in registering 360 days grouped into months, followed by a final extra five days.

A striking calendrical correlation between Egypt and the New World is that the Mayan calendrical day count projects the beginning of Mayan time backward to a starting date that is equivalent to the Julian calendar date of September 7, 3114 B.C. (Lounsbury 1989:205). 3100 B.C. dates the beginning of the first Egyptian dynasty, commemorated as the time of the unification of Upper and Lower Egypt, and the beginning of recorded Egyptian history!

Even before the New Empire, Egypt sent expeditions in search of such resources as unusual stones and incense plants. Green and

blue stones (serpentine and lapis lazuli in Egypt, and jade in China and Mesoamerica) were accorded special--perhaps sacred--value. Egyptian daily and mortuary religious rites required the use of incense imported from the Arabian and Somali coasts. In China incense was burned to ancestors and household gods. In Mesoamerica, copal incense is still extensively used in worship. These resources must have been sought out by the Egyptians and their sacred uses introduced in the lands in which they were found.

The comparative linguistic data on which this paper is based are too complex and specialized to be appropriate for a short discussion, and must be left to specialists to evaluate. The ultimate acceptibility of my transoceanic argument rests largely on a careful review of my linguistic analysis. In addition, a thorough iconographic comparison, coupled with linguistic equivalences represented in glyphs, will uncover a great deal of cultural evidence which should prove as relevant to cultural geographers as to linguists and archaeologists.

On the earliest prehistoric level, all of these language groupings derive from a single Paleolithic language stratum, which perhaps arose during the Acheulean, if not earlier (e.g. Foster 1978..., in press)#. The earliest source was a consonantal matrix in which each consonant articulation mimicked a particular spatial relationship or movement of a generic, or abstract nature, such as the sound [p] as 'protrusion from'__ deriving from projection of the lips in production of the sound [p]--and 'surrounding' or 'circular', produced by the lip-rounding necessary to production of the sound [w]. The original, reconstructed, *p has been in-

herited as /p/ in such languages as Latin, Greek and Sanskrit, but changed to /f/ in the Germanic languages, such as English. Thus, we find a semantic element of forward motion in such English words as 'forward', 'forth', 'fly', 'flow', etc. The circular semantics of *w (changed to /v/ in many languages), is found in such English words as 'wind', 'weave', 'wool', or 'wring' with a now silent /w/. The original oral meaning-bearers have been termed 'phememes'.

From such simple mimetic beginnings, a subsequent stage in the development toward historical language was the concatentation of phememes in order to provide greater semantic specificity, such as that needed for naming, for example. Most modern languages have a majority of two-consonant roots. Although Semitic languages have a three-consonant canon, examination of Arabic shows a recurrent meaning in the initial two-consonant segment. For example.....Certain two-consonant segments with same or similar verbal meanings recur globally across established family or stock boundaries. Some examples are *mw- (or with *w realized vocalically as [u]) with meanings of mouth, mouth use, and bodily moisture, *mn- with meanings of stability or staying of action, *wr- with meanings of circular movement or twisting. Singly, as a prototypical phememe, *m had the meaning of 'betweenness', deriving from the bilabiality of the mouth, while *w had the meaning of 'surrounding' or 'rounding'. Together they describe mouth totality, including containment of moisture. *r indicated 'mobility', deriving from the mobility of the tongue within the mouth. In combination, then, *wr had the meaning of circularity of motion'. *n, 'innerness', or 'that which is within', in con-

junction with an initial *m, has a near universal meaning of 'stasis', or 'cessation of action'. The root *mn, in PIE as in some other language groups, can also mean some kind of mental activity, as 'thinking, knowing', or 'remembering', the most vivid kind of innerness. Sharing of semantic extensions of this kind is an indication of a shared past, represented by a branching node in a family tree model, and this example is found in Uto-Aztecan

The presence or absence in particular languages of such phono-semantic concatenations reflects the continuity or separations of speakers over time. The presence of three-consonant roots or words of the same composition and similar meanings indicates a later stage of separation. The Semitic shift to a three-consonant root canon is such an innovation. Some of this is found in Quechua, indicating extensive borrowing from a Semitic language, that seems to have been Arabic.

Time and usage have brought about many gradual shifts in pronunciation as well as meaning. As phonetic divergence becomes more extreme, phonemic realignments may occur. These almost invariably preserve phonological features of the parent phoneme, as English has preserved the labiality of the original phoneme *p while shifting the manner of articulation from total to partial stoppage in the change from [p] to [f]. The comparative method was devised to establish regularity of sound change in languages with some apparent phono-semantic similarity. If virtually universal resemblances, such as *mw with mouth or body fluid meanings, are eliminated but a variety of further sound-meaning similarities are found, a shared history can be postulated <u>if</u> phonological change can also be found to be consistent.

Heretofore, linguists doing comparative research have assumed that change over time is so severe that resemblances between related languages are not discoverable if separation occured more than a few millenia before the time that the languages were spoken. Therefore, comparative studies have advanced slowly, with only rare attempts to establish more than one or two stages of separation from a common ancestor.

The discovery of universal phono-semantic, two-consonant concatenations provides a firm basis for the investigation of more remote connections. The universality itself suggests monogenesis, which becomes the rationale for further attempts at reconstruction. The comparative reconstructive methodology of establishment of regularities of sound change remains the basis of reconstructive validity. Each consonant in a universal, or near-universal, segment can be established as the regular reflexion of a particular proto-consonant and can be assumed as such when found in combination with some other consonant. As my analysis progressed, and regularities were registered, I attempted to establish sound regularities corresponding to a hypothetical prototype. I simplified the prototype wherever grounds for assumption of phoneme melding could be established, and readjusting it if a prototypical fit coult be established. If a newly introduced language did not fit the model the model was readjusted. Accordingly, I subtracted or added phememes until newly introduced languages ceased to pose reconstructive problems. As the reconstruction progressed, shared innovations became increasingly apparent, suggesting shared innovations at differing time depths. This necessitated research on the degree of interrelationship and

the time-correlated shared changes.

This is an on-going project that will probably never be completely resolved. It necessitates a complete reorganization of a global family tree model to show nodes at which shared innovation took place. At this stage in the investigation, assessment of borrowing, hence language contact rather than descent, becomes both increasingly relevant and increasingly capable of solution.

Because some connections between Old and New World languages are so close as to throw doubt on an exclusive scenario of ancient Bering Straits crossings, migration theories will need revision. This seems particularly true of the Afro-Asiatic ties to the New World, while an explanation of Uto-Aztecan-Indo-European affiliation as a result of migrations via the Bering route may still obtain.

A wider Egyptian influence in the New World is very probable, with languages both splitting off from an Olmec prototype, or perhaps introduced through successive oceanic crossings. Witkowski and Brown (1978) proposed a linguistic phylum called Mesoamerican, which included Mayan, Zoquean, Huave, Totonac, Lenca, Jicaque, and the Otomanguean language , including Zapotec and Mixtec. So far, I have explored the interrelationship of only Zapotec and Mixtec, and that only to the extent that the fit seems to me quite likely. Whorf (1948) suggested that Mayan and Zoquean were genetically related within a phylum called Macro-Penutian, also including Uto-Aztecan and California Penutian. I believe that such and inclusion involves a mixing of levels and to be given validity would have to include both Indo-European and Afroasiatic, as well as many other established or semi-established stocks..

Some striking coincidences of early dates provides historical evidence that is supportive of Egyptian overseas contacts. The Olmec culture appeared abruptly in Mexico around 1500 BC. At a similar date so did the Chavin civilization in the Andes. At this period Egypt was involved in an intense period of conquest and organized rule abroad. The Hyksos conquerers were expelled and the New Empire began with extensive voyages by both land and sea for exploration, conquest, trade, and exploitation of new resources. Ships capable of carrying heavy loads of cargo and men had been available for at least 1000 years, so oceanic voyages were clearly possible.

The most distant voyage recorded by Egyptian scribes was that to Punt--a destination of undetermined location. Since Egyptian ships were constructed entirely of vegetal materials it is not surprising that no vestiges remain in the New world. The coastal advent of four great sages is recorded in the Mayan origin myth, the Popol Vuh (Edmunson 1971). Their Mayan names can be correlated with Egyptian if missing vowels are hypothesized. The first, Q'uq' kumatz, derives from Mayan q'uq', with meanings 'precious' and 'quetzal bird'. This seems to derive from a reduplication olf Egyptian *qu?, 'exalted one, a god'. In Mayan kumatz means 'snake', or 'sinuous thing'. This probably derives from Egyptian *gumash 'hair, lock, tress'. The root of the name Tepev, in Mayan meaning 'ruler' accords phonemically and semantically with Egyptian *tep, meaning 'chief' or 'head'. The name Tzakol, 'creator, maker', accords with the Egyptian root *tzak 'to bring into being'. And finally, Bitol, 'shaper' accords with Egyptian *boty 'mould'.

Olmec iconocraphy reveals many similarities with Egyptian. Some examples are clothing, hair styles, and especially, headdresses. Each depicted personage, whether god or ruler is provided with a distinctive head treatment. There are Olmec resemblances both to the Egyptian uraeus, with the forepart of a cobra projecting over the monarch's forehead, and to the Egyptian double crown of Egyptian royalty, symbolizing the unification of Upper and Lower Egypt.

Brian Stross (1989a, 1989b), assuming that Olmecan is reflected in modern Mixe-Zoquean, effectively demonstrates a rebus approach in Olmec iconography that is strikingly similar to that of Egyptian, based on a homophonic concurrence of words with differing meaning, much as if we were to illustrate the verb "be' with a sketch of the insect 'bee'.

Although Olmec sculptures are organized as scenes rather than scripts, decorative shapes often resemble Egyptian glyphs, and to some extent their messages can be deciphered. Similarly, the ancient Maya combined glyphs, with or without surrounding cartouches, similar to those of the Egyptians, with sculptures--a technique seemingly acquired from the prior Olmecs. These sculptures reveal enough similarity to Egyptian hieroglyphics to suggest that writing also had a place in Olmec culture, perhaps occuring largely on perishable materials.

Careful iconographic comparisons need to be made, as well as comparison of other cultural forms, such as rituals and myths. A Zoque myth, first recorded by my husband and me in the 1940s, and since found by other investigators in other versions, tells of the #life and death of Homshuk, the maize god, bearing much similarity

to Egyptian tales of Osiris. Eye treatment in dipiction of Olmec deities shows similarity to Egyptian figuring of the eye of Horus.

I provide this illustrative sampling of cultural features not as proof of the transoceanic relationship, but as correlative evidence. Proof itself lies in the accuracy of the linguistic analysis, which is extensive.

Appendix:

Cognate Sets: (For ease of comprehension, I have selected forms in which sound changes are not extreme, making the relationship more obvious than is always the case. The changes are always regular. Some perhaps unfamiliar phonetic symbols are /?/, glottal stop, / /, a mid-central, or schwa, vowel.

Language designations are E, 'Egyptian', A, 'Arabic', MZ 'Mixe-Zoque'(particular MZ languages are letters preceded by M or Z), M 'Mayan',(with separate languages designated as above), Q 'Quechuan', D 'Dravidian', Au 'Austronesian'.)

AWAY fROM,FAR: E $\underset{\cdot}{h}$r 'to be far from', move away from, avoid, depart from', hr 'to go away'; A $\underset{\cdot}{h}$alla 'to undo, disband, disassociate oneself,' etc.; MZ hay- (pref.) 'other, foreign'; MQ hala- 'to differ, vary, divide, change'; Q karu 'far'; D kalay 'to disperse, be scattered, detach, exile, drive away'; AuPCP kalo 'to avoid, evade'.

BE, BEING: E p? 'to be, exist', b? 'soul, to have a soul', b?-t 'quality, chaacteristic'; ZSP -pa?ap deverbative suffix 'that

which is'; MTzo -ba 'self', Q ab 'breath, D va:$^{r}_{n}$ 'to exist, live, flourish.'

BEGIN, BEFORE: E $m^{h}_{.}$ 'before'; MZ moh 'begin'; MQ mah 'to set in motion, begin'; Q muhu 'seed, to sow'; D muk- 'to bud', muka 'child', muka- 'front, beginning, face';Au: PCP mu?a 'front, before'.

BEND, CURVE: E kz, kss 'to bow', ksw 'bowings'; MZ ko^{v}_{s} 'knee', ZC ku?s-= to be 'curved'; MTze ko^{v}_{s}ol 'curve, curved'; DTa ka kusi 'to bend, stoop'; AuPPN koko 'a bend, to bend, a hollow'.

BLOW, WIND: E hb 'south wind'; A habu:b 'wind'; MZ pɬh- 'to blow, wind'; MTzo hub 'to blow', MQ hub 'to give off an odor',MTze huhc'an 'agreeable odor'; D up 'to blow', a:vi 'to sigh, breath, steam', DTo ofy 'breath'.

CEASE, FAIL: E dg 'to fail, give way (legs), dgm 'to be weak, smitten', dgm 'be speechless; A $^{d}_{.}$a: ja'a 'to lie down'; MZZFL tekekna 'leaning, lying'; MQ tiqo- 'to stop,cessation'; Q tuku 'to finish, termination'; D takai 'to stop, check, deter', etc., $ta^{:}_{n}ku$, takku 'to stay', AuPPN takoto to lie down, lay an ambuscade, repose'.

GARDEN, CROP: E k?m 'garden'; MZ kama 'maize garden, maize crop'; MCh 'squash, gourd', k'amel 'abundance of a crop'; Q k^{h}umar/k^{h}umara 'sweet potato'; DTa kampalai 'agricultural tract', kumari 'cultivation in the hills' DKa kumari 'slash-and-burn garden plot'; PCP kumal 'sweet potato'.

JOIN, UNITE: E dmm 'to unite with', dm? 'to bind together'; A $^{d}_{.}$amma 'to join, bring together, collect, unite, increase' etc.; MZ tom- 'near, together', MZZ tum 'one'; M tam/tem 'to join, collect, augment'; DTa tumpai 'assembly, crowd'; AuPNP tamau 'to fasten

together'.

Noun Inflection:

POSSESSION[1]: n 'm.sg.gen.', ny 'belonging to'; MZSP ?aN- 'my', ?iN- 'his'(N assimilative nasal); M N 'my, your' (N assim. nasal); Q -ni 'possessive'; PCP{ ni 'possessive article', -na 'his, her.

POSSESSION[2]: E pn 'what belongs to', p?y underlying 'my, thy, his, her, our, your, their'; Q -pa 'genitive suffix'

LOCATIVE[1]: E 'at, with, to,' etc.; MZSP -mɨ 'at, to, with', MZS -m loc. suf. , Q -man 'to, toward, into, onto, for', etc.

Old World Language in the Americas

Mary LeCron Foster

Department of Anthropology, University of California, Berkeley.
(Paper prepared for the annual Meeting of the Language Origins Society, Cambridge University, Cambridge, England, September 1992.)

At earlier meetings of the Language Origins Society, I have focussed on language origin. This time I am going to talk about language origins. My single origin model is not valid only as an explanation of how language came into being in the Paleolithic. It also provides a baseline for language change--or how language became languages during subsequent eras--especially during the Neolithic, and on into the Bronze Age.

The language stage that I have called Primordial Language (PL) was the culmination of a slow Paleolithic buildup of non-complex, or primary, oral articulations with consistent semantic content (e.g. Foster 1990). I have speculated that this inventory of phememes (minimal units of sound and meaning) probably held until the early Upper Paleolithic, after which phememe concatenations created at least some secondary phonemes while, at the same time, some primary phememes were lost in every language. Phememe sequences had also become consolidated into words. Some of these continued as words, others continued as word roots or affixes. Compounding of roots, or root and affix, formed secondary stems. Finally pronominal, spatial, temporal, and modal meanings were attached as an outer, syntactically motivated, layer. These affixes had begun as words and often remained as such in other languages. These later accretions probably were in process of formation during the Upper Paleolithic, and became consolidated during the Neolithic, when wider separations between groups encouraged change and stylistic variations. Written records in some languages during the Bronze Age indicate that by that time global variation was extensive.

Worldwide exploration of language resemblances by means of the comparative method--the linguistically well-established method of using regularity of sound change to certify genetic relationships--has made it possible to establish some language families and stocks, and to hypothesize some further groupings. In the effort to lump more and more languages together, some researchers, most notably Greenberg, have bypassed the comparative method and suggested groupings supported by nothing other than some perceived resemblances between certain languages. On this uncertain basis Greenberg has postulated a macro-grouping of American Indian languages.

Such hypotheses cannot be sustained. Resemblances between all languages occur for the simple reason that all historical languages stem from PL, and some sounds change while others remain stable. Stable sounds and meanings provide some retrievability from the common PL matrix. It is also not true, as Greenberg and many other linguists have too readily assumed, that the comparative method is useless at very great time depths. With the baseline derived from the structure of PL it is possible to work

from the top, or earlier, structures down toward those of historic times, and thus to discover what changes from the earlier structure had to occur in order for the later structure to emerge. Changes are patterned, producing clusters of isoglosses (shared changes--that differentiate nodes of the family tree.

Determination of some of these isoglosses led me to the discovery that some languages in the Americas were surprisingly closely related to languages in the Old World. Specifically, the Mixe-Zoque languages of southern Mexico, hypothesized to derive from the language spoken by the Olmec peoples (Campbell and Kaufman 1976), and the Mayan languages of Mexico and Central America, are demonstrably closely related to, and probably descended from, ancient Egyptian. Quechua, the language of the ancient Incas of South America, exhibits a similar relationship to Egyptian but with what seems to be a later Arabic overlay. This is very like the derivation of English from a Germanic source, with a later, borrowed, overlay from French and Latin.

Egyptian hieroglyphs registered consonants, but not vowels. The only hitherto known Egyptian daughter language, Coptic, sheds some light on earlier vocalism, while vowel agreement among the American Egyptoid languages, and with Coptic (where Coptic forms are available) is close. Consonant reflexes are regular. Consonantal metathesis is frequent, and follows definable, shared, rules in Mixe-Zoque and Mayan. The so-called Hamitic languages other than Egyptian, such as Hausa, are far more distantly related to that language than are the Egyptoid languages of the New World.

In a separate and unrelated development, another major language family of North America, Uto-Aztecan, proves to derive either from Proto-Indo-European (PIE), or from a pre-PIE stage. Interestingly, the American linguist, Morris Swadesh (Swadesh and Sancho 1966), was aware of striking similarities between Latin and Aztec, but failed to use the comparative method for substantiation.

On a shared earlier level, the Afro-Asiatic languages, including Egyptian and Arabic, are themselves related to PIE. Certain other Old World languages, such as Dravidian of India and Austronesian of the South Pacific, share the Afro-Asiatic connection. This needs further examination, but seems to be Egyptoid rather than Semitic. Chinese also shows surprising Egyptoid parallels.

A great deal of painstaking work is necessary to establish the relative times of branching of these from the common prototype. Since, ultimately, all of the world's languages developed from the PL prototype, all major isoglosses showing successive tree branching should ultimately yield to analysis.

Olmec of Mexico was the first high culture to appear in the New World. The Zapotec and Mixtec languages are descended from similarly complex Mexican cultures only slightly less ancient. Mayan culture, with many Olmec-derived traits, appeared perhaps half a millenium later. A wider Egyptian influence in the New World is very probable, with languages both splitting off from an Olmec prototype, and (perhaps) introduced through successive oceanic crossings. Witkowski and Brown (1978) proposed a linguistic phylum called Mesoamerican, which included Mayan, Zoquean, Huave, Totonac, Lenca, Jicaque, and the Otomanguean language , in-

cluding Zapotec and Mixtec. The relationship between the first two is close. Of the others I have so far had time only to make a cursory comparative exploration of the interrelationship between Zapotec and Mixtec and Egyptian, which seems likely to hold up.

Over 40 years ago, Whorf (1948) suggested that Mayan and Zoquean were genetically related within a phylum that he called Macro-Penutian. He felt that this should also include Uto-Aztecan and California Penutian. I believe that such an inclusion involves a mixing of family tree levels. To have validity it would have to include both Indo-European and Afroasiatic, as well as many other established or semi-established stocks.

In the Andes, the first high culture, Chavin, roughly coincident with the Olmec, exhibited Olmecoid iconography, suggesting a possible linguistic connection. Other Andean high cultures followed, culminating in the Inca empire, linguistically Quechuan. Archaeologists have long known that there was Pre-Columbian traffic between Mesoamerica and the Andes, which probably dates back to the Chavin-Olmec horizon. With the relationship of Quechua established, it seems probable that the language of Chavin was an Egyptoid antecedent.

World-wide, the early high culture dates in these and other parts of the world correlate strikingly with Egyptian history. In the Old World, it has been speculated that Dravidian of southern India may have been the language of the Indus valley culture, dated from about 2500 B.C. In Egypt, the Old Kingdom began with the 4th Dynasty in 2613 B.C. The Old Kingdom was a classic period of Egypt's greatness, during which the the great pyramids were built as monuments to successive kings, military expeditions were undertaken, and 40 well-laden vessels were said to have brought loads of timber from Lebanon, so crossings to both the Indus Valley and the New World were feasible.

The Chinese language was first recorded on oracle bones associated with the Shang culture, which appeared at around 1500 B.C. Both the Olmec and Chavin cultures appeared abruptly at about the same date. In Egypt, the period following the beginning of the New Empire with the 18th dynasty in 1567 BC saw an intensification of conquest and organized rule abroad. The invading Hyksos conquerers were expelled and voyages by both land and sea for exploration, resource exploitation, conquest, and trade were common. Ships capable of carrying heavy loads of cargo and men had been available for over 1000 years.

In view of the cultural capabilities of the Egyptians, it is perhaps not surprising that Egyptian ships reached the New World, although the sea voyage to the unidentified Punt, presumed to have been the longest, is also always presumed to have been to someplace on the coast of Africa. Since Egyptian ships were entirely of vegetable materials no vestiges of them were likely to survive in the New World or elsewhhere.

There has long been speculation of Chinese artistic influence in ancient Mesoamerica. While Heine-Geldern (1966) dates this only to about 700 B.C., Shao (1983) relates it to the earlier Olmec horizon. And, indeed, Chinese shows significant resemblance to Mesoamerican languages and Egyptian. Linguistic evidence should ultimately reveal if the shared Egyptian elements found in the New World point to a single or multiple contacts. A mixture

of races in Egypt, long a crossroads between Africa and Asia, easily accounts for the existence of African models for the Olmec giant head sculptures, as well as for the singularly contrastive, thin-lipped, bearded figures.

The Mayan origin myth, the Popol Vuh (Edmunson 1971), tells of a group of four great sages who arrived on the Mayan sea coast and found nothing, so that they had to create everything themselves. I have found that consonantally their Quiche Mayan names correlate with Egyptian words of the same or similar meanings. Vocalically, for the sake of pronouncibility, I have simply echoed Mayan values. The name of the first sage was q'uq' kumatz. Q'uq', meaning both the sacred Quetzal, bird, and 'precious,' accords with a syllabic reduplication of the Egyptian word *qu?, meaning 'exalted one, a god.' (Post-vocalic Egyptian glottal stops moved forward in a word to coalesce with other stops in both Mayan and Quechuan.) Kumatz, with meanings of 'snake' and 'sinuous thing' accords phonemically with Egyptian *gumash 'hair, lock, tress', also implying sinuousity. Next, The root *tep-, of Tepev,'ruler', accords with Egyptian *tep 'head, chief'. Third, the root tzak of the name Tzakol, 'creator, maker' accords with Egyptian *tzak 'meaning 'to bring into being'. Finally, the Mayan root bit- 'to shape pottery and children', which underlies the name, Bitol, 'shaper,'accords both semantically and phonemically with the verbal root of the Egyptian noun,*bity , meaning 'mould'.

Examination of Olmec iconography reveals many similarities with Egyptian. Egyptian costuming, and especially headdresses had great iconographic significance. Male and female clothing and hair styles were similar in the two cultures. In both traditions each depicted personage, whether of god or ruler, was identifiable because of his characteristic head iconography. Headdresses of Egyptian royalty feature the <u>uraeus</u>, the forepart of a cobra projecting over the monarch's forehead. A similar forehead treatment is found in some Olmec depictions, as is a sort of double crown, reminiscent of the double crown of Egyptian royalty which celebrates the unification of Upper and Lower Egypt.

Egyptian, Mesoamerican, and Chinese writing systems all used a rebus approach, based on homophonic concurrence of words with differing meanings. In English, this is as if a sketch of the insect 'bee' were used to to represent the verb 'be'. Where ambiguity might result, classifiers were included to clarify meaning domains. Also like Egyptian, the Mayan system combines rebus symbols with phonemic glyphs. Brian Stross (1989a, 1989b), assuming ##that the Mixe-Zoque languages are indeed Olmec descendents, effectively demonstrates the Olmec origin of hieroglyphic rebus forms in New World iconography.

Although Olmec sculptures seem to resemble scenes rather than scripts, decorative shapes very often resemble Egyptian glyphs and combinations of these reveal messages that can to some extent be deciphered. The ancient Maya combined glyphs, with or without surrounding cartouches, with sculptures, so the shapes may well be Olmec glyphs. In one study, Stross (1989b) describes a rebus association between the number three and the bloodletting iconography of the Maya and their Olmec predecessors. Ritualized self-blood-letting to assure agricultural fertility is depicted as

performed with a dagger decorated with three feather plumes appended to a three-pronged element on the handle. The handle is also surrounded by three horizontal bands. Personalized versions show three circular knots on headdresses. Three-knotted ribbons also figure as a glyph referring to blood-letting. Another glyph depicts three flint knives held in a row in an open hand with thumb extended. Similar groups of three are found on pottery and stelae depicting blood-letting scenes. Stross traces the Maya pattern of three bars, circlets, or knots back to Olmec examples.

In the Mixe-Zoque languages, the number three reconstructs as *tuk, or *tuku. *tuk also translates as 'cut,' usually more specifically, 'to cut fruit'. This relates this homophonic complex to the harvest, hence to fertility. The Chol Mayan word meaning 'to bleed someone' is also tuk. A reconstructed Mayan word, glossed variously as 'to prick, break, puncture' and the like, reconstructs as *toq, or *tooq, both with a final *q, while words meaning variously 'flint,' 'stab' or 'to let blood' reconstruct as *toq', with a final glottalized *q. Mixe-Zoque, and some Mayan languages have conflated *q and *k as /k/. Chol, however preserves the contrast, showing that *tuk, with a final /k/ means both 'cut' as in Zoque, and 'to bleed someone' as in Chol, while words with final /q/ mean 'prick', or 'puncture', and those with a glottalized /q/ mean 'flint', 'stab', and 'to let blood'.

Egyptian equivalences, for this rebus are easily found. <u>tq</u>, with unchanged phonemicization, means 'cut, slay, strike,' and <u>tqs</u> means 'to pierce, penetrate, to cut, to stab'. The vowel nucleus is represented in post-Egyptian Coptic as <u>to:kc</u>. Also, in Egyptian <u>tk?</u>, with /k/ instead of /q/, means 'grain, fruit.' In one Mixe dialect, the verb stem <u>tuk</u> means 'to pick flowers, to harvest beans,' which strengthens the harvest analogy. Rebus homophony is probably nowhere necessarily exact. Egyptian rebus homophony required only the agreement of consonants, with weak consonants often disregarded. It would seem that in this case, meanings associated with both velar and postvelar stops provide additional resonance for the trope.

While hieroglyphic writing does not feature prominently in the earliest Mesoamerican stone sculpture, comparison of Egyptian hieroglyphic symbols with markings on Olmec sculptures reveals similarities that suggest that writing did, indeed, have a place in Olmec culture. It perhaps occured largely on perishable material, as it did, for example, on bone in China. No bone with Olmec associations has survived the damp tropical climate of the Olmec area. In any case, it seems fairly certain that writing and calendrical glyphs of the Zapotec Monte Alban horizon, as well as those of the Mixtec and Maya, derived from the earlier Olmec culture (Caso 1965:931-932, Bernal 1965:799). While there are differences in calendrical groupings in the various cultures under discussion, they agree with Egypt in registering 360 days grouped into months, followed by a final extra five days. Also like the Egyptians, the Mayas gave names to their years.

A very striking calendrical correlation between Egypt and the New World is that the Mayan calendrical day count projects the beginning of Mayan time backward to a starting date that is equivalent to the Julian calendar date of September 7, 3114 B.C. (Lounsbury 1989:205). 3100 B.C. dates the beginning of the first

Egyptian dynasty, commemorated as the time of the unification of Upper and Lower Egypt, and the beginning of recorded Egyptian history!

Even before the New Empire, Egypt sent expeditions in search of such resources as unusual stones and incense plants. Green and blue stones (serpentine and lapis lazuli in Egypt, and jade in China and Mesoamerica) were accorded special--apparently sacred--value. Egyptian daily and mortuary religious rites required the use of incense imported from the Arabian and Somali coasts. In China incense was burned to ancestors and household gods. In Mesoamerica, copal incense is still extensively used in worship. These resources must have been sought out by the Egyptians and their sacred uses introduced in the lands in which they were found.

I provide this illustrative sampling of cultural features not as proof of the transoceanic relationship, but as correlative evidence. Definitive proof lies in the complete regularity of the sound/meaning correspondences.

The extensive comparative linguistic data on which this paper is based are too complex and specialized to be appropriate for a short discussion. Obviously, the ultimate acceptability of my transoceanic argument depends upon a careful review of the linguistic material. In addition, a thorough iconographic comparison, incorporating linguistic equivalences, will uncover a great deal of strikingly supportive cultural evidence.

References cited:

Bernal, Ignacio. 1965. Arthaeological Synthesis of Oaxaca. In Archaeology of Southern Mesoamerica, Part 2. Edited by Gordon R. Willey. Handbook of Middle Ameria Indians, Vol. 3. Austin: University of Texas Press. Pp. 837-848.

Campbell, Lyle, and Terrence Kaufman. 1976. A Linguistic Look at the Olmecs. American Antiquity 41: Pp.80-89.

Caso, Alfonso. 1965. Zapotec writing and calendar. In Archaeology of Southern Mesoamerica, Prt 2. Edited by Gordon R. Willey. Handbook of Middle## American Indians, vol. 3. austin: University of Texas Press. Pp. 931-947.

Edmunson, Munro S. 1971. The Book of Counsel: The Popol Cuh of the Quiche Maya of Guatemala. Publication 35, Middle American Research Institute, Tulane University, New Orleans.

Foster, Mary LeCron. 1990. Symbolic origins and transitions in the Palaeolithic. In The Emergence of Modern Humans: An Archaeological Perspective. Edited by Paul Mellars. Edinburh: Edinburgh University Press. Pp.515-535/

Heine-Geldern, Robert. 1966. The problem of transpacific influences in Mesoamerica. In Archaeological Frontiers and External Connections.

Lounsbury, Floyd. The ancient writing of Middle America. In The Origins of Writing. Edited by Wayne Senner. Lincoln and London: University of Nebraska Press. Pp. 203-238.

Shao, Paul. 1983. The Origin of Ancient American Cultures. Ames, IA: Iowa University Press.

Stross, Brian. 1989b. Olmec Vessel with a Crayfish Icon: An Early Rebus. In Word and Image in Maya Culture: Explorations

in Language, Writing, and Representation. Edited by William F. Hanks and Don S. Rice. Salt Lake City: University of Utah Press. Pp. 143-164.

Stross, Brian. 1989b. Maya bloodletting and the number three. Anthropological Linguistics Vol. 31, Nos. 2-4. Pp. 209-6.

Swadesh, Mauricio, and Madalena Sancho. 1966. Los Mil Elementos del Mexicano Clasico: Base Analitica de la Lengua Nahua. Instituto de Investigaciones Historicas. Mexico D.F.: Universidad Nacional Autonoma de Mexico.

Whorf, Benjamin Lee. 1948. Loan words in ancient Mexico. Philological and Documentary Studies, Vol. I, No. 1. Publication No. 11, Middle American Research Institute. New Orleans: The Tul@@ane University of Louisiana. Pp. 2-14.

Witkowski, Stanley R. and Cecil H. Brown. 1978. Mesoamerican: a proposed language phylum. American Anthropologist, Vol. 80, No. 4. Pp. 942-944.

Old World Language in the Americas

Mary LeCron Foster

Department of Anthropology, University of California, Berkeley

Abstract of paper prepared for Annual Meeting of the Association of American Geographers, San Diego, California, 1991.

Linguistic diversity in the Americas is extreme. Since the New World was settled from the Old, it must be assumed that language was one of the most basic cultural artifacts that accompanied the settlers. Despite this fact, there has never been a concerted search for Old World language connections, surely one of the most important areas for comparative research. If such connections are to be firmly established, it cannot be done without recourse to the comparative method of language reconstruction, a certain tool for the establishment of genetic relationships.

The comparative method can be used to demonstrate a single (monogenetic) source for all of the world's languages. It can also be used to demonstrate linguistic isoglosses that show successive points of prehistoric divergence of language families. As divergence points are brought closer to the present, surprisingly close relationships between certain Old and New World language families can be discerned. This paper will discuss some of the most striking of these.

OBL = EXPANDED, AAG ?

c:\doc\articles\rev\amer-92.los

Old World Language in the Americas

Mary LeCron Foster

Department of Anthropology, University of California, Berkeley

(Prepared for the George F. Carter honorary session, Pre-Columbian Transoceanic Transfers, Annual Meeting of the Association of American Geographers, San Diego, CA, April 20, 1992)

Global comparison of major linguistic stocks, relying on regularity of sound change as the sole criterion for establishing genetic relationships, cuts across established family boundaries to demonstrate close genetic affiliation between Old and New World languages. In some cases, the degree of change from Old World prototypes is considerably less than would seem compatible with postulation of ancient Bering Straits crossings. In consequence, the possibility of considerably more recent transoceanic contacts must be seriously entertained.

Linguistic reconstruction across hitherto postulated genetic boundaries demonstrates that Afro-Asiatic languages, and in particular ancient Egyptian, are genetically close, and possibly ancestral, to a group of geographically distant languages in both the Old and New Worlds. In the Old World these include Dravidian of southern India, Chinese, Malayo-Polynesian; and in the New World, Quechua of the South American Andes, and such Mesoamerican languages as Zoquean, Mayan, Zapotec, and Mixtec.

add from LOS paper >

In Mexico, Zoquean (with Mixe and Zoque subgroups) is now believed to be the modern descendent of the language of the ancient Olmec culture (Campbell and Kaufman 1976, Stross 1989). The Zapotec and Mixtec languages are descended from similarly complex

Mexican cultures only slightly less ancient than the Olmec. Mayan culture, with many Olmec-derived traits, appeared perhaps half a millenium later. In the Andes, the first high culture, Chavin, nearly as early as the Olmec, also exhibited Olmecoid characteristics. Other high cultures followed, culminating in the Inca empire, linguistically Quechuan. While closely related to the Egyptoid languages further north, Quechua also contains an admixture of Semitic vocabulary which seems to be Arabic. Archaeologists have long known that there was Pre-Columbian traffic between Mesoamerica and the Andes, which probably dates back to the Chavin horizon.

Witkowski and Brown (1978) proposed a linguistic phylum called Mesoamerican, which included Mayan, Zoquean, Huave, Totonacan, Lencan, Jicaque, and the Otomanguean languages, including Zapotec and Mixtec. I have not yet determined the degree to which all of these exhibit regular sound correspondences to Egyptian and to one another. Whorf (1948) suggested that Mayan and Zoquean were genetically related within a phylum called Macro-Penutian, also to include Uto-Aztecan and the Penutian languages of the Pacific Northwest. However, my comparative analyses show Uto-Aztecan and California Penutian to share a closer genetic relationships with Indo-European. While I find Indo-European to be distantly related to Afroasiatic, the Penutian and Uto-Aztecan relationship to Egyptian is considerably more remote than that of the linguistic group discussed here. Interestingly, Swadesh (Swadesh and Sancho 1966: 24-26) correctly noted a resemblance between Aztec and Latin, but unfortunately failed to pursue this comparatively.

The reliability of the linguistic comparative method in establishing remote language relationships cannot be overstated. It is the only way that suspected language relationships can be confirmed. The existence of Bronze Age writing systems, such as that of Egyptian, greatly assists comparative efforts by providing recorded linguistic time depths of over 5000 years. This has been of crucial value for this analysis.

Coincidences of early dates correlate strikingly with Egyptian history. In the Old World, it has been speculated that Dravidian of southern India may have been the language of the Indus valley culture, dated from about 2500 B.C. In Egypt, the Old Kingdom began with the 4th Dynasty in 2613 B.C. The Old Kindom was a classic period of Egypt's greatness, during which the the great pyramids were built as monuments to successive kings, military expeditions were undertaken, and 40 well-laden vessels were said to have brought loads of timber from Lebanon, so a crossing to the Indus Valley was feasible.

The Chinese language was first recorded on oracle bones associated with the Shang culture, which appeared at around 1500 B.C. The Olmec culture appeared equally abruptly in Mexico at about the same date, as did the first Andean high culture, Chavin. In Egypt, this period initiated an intense period of conquest and organized rule abroad. The invading Hyksos conquerers were expelled and the New Empire began with the 18th Dynasty. Voyages by both land and sea for exploration, resource exploitation, conquest, and trade were common. Ships capable of carrying heavy loads of cargo and men had been available for at least 1000 years, so oceanic voyages were clearly possible.

There has long been speculation of Chinese artistic influence in ancient Mesoamerica. While Heine-Geldern (1966) dates this only to about 700 B.C., Shao (1983) relates it to the earlier Olmec horizon. Linguistic evidence should ultimately reveal if the shared Egyptian elements found in the New World point to a single or multiple contacts. A mixture of races in Egypt, long a crossroads between Africa and Asia, easily accounts for the existence of African models for the Olmec giant head sculptures, as well as for the singularly contrastive, thin-lipped, bearded figures.

In view of the cultural capabilities of the Egyptians, it is perhaps not surprising that Egyptian ships reached the New World, although the sea voyage to Punt--an undetermined destination--is the longest recorded. Since Egyptian ships were entirely of vegetable materials no vestiges of them were likely to survive. The Mayan origin myth, the Popol Vuh (Edmunson 1971), tells of a group of four great sages who arrived on the sea coast and found nothing, so they created everything themselves. I have correlated their Quiche Mayan names with Egyptian, supplying hypothetical vowels, omitted in the Egyptian script, for greater clarity. These names were: 1. q'uq' kumatz. Q'uq',meaning 'Quetzal,' and 'precious,' accords with a syllabic reduplication of Egyptian *qu?, meaning 'exalted one, a god.' Kumatz, with meanings of 'snake' and 'sinuous thing' probably accords with Egyptian *gumash 'hair, lock, tress' 2. The root *tep-, of Tepev,'ruler', accords with Egyptian *tep 'head, chief'. 3. Tzakol, 'creator, maker' accords with Egyptian *tzak 'to bring into being'. 4. Bitol, 'shaper,' accords with Egyptian *boty 'mould'.

Examination of Olmec iconography reveals many similarities with Egyptian. Egyptian costuming, and especially headdresses had great iconographic significance. Male and female clothing and hair styles were similar in the two cultures. Each depicted personage, whether god or ruler, was identifiable because of his characteristic head iconography. Headdresses of Egyptian royalty feature the uraeus, the forepart of a cobra projecting over the monarch's forehead. A similar forehead treatment is found in some Olmec depictions, as is a sort of double crown, reminiscent of the double crown of Egyptian royalty which celebrates the unification of Upper and Lower Egypt.

Egyptian, Chinese, and Mesoamerican writing systems all used a rebus approach, based on homophonic concurrence of words with differing meanings, as if we were to sketch the insect 'bee' to represent the verb 'be'. Because of resultant ambiguity, classifiers were often included to clarify meaning domains. Like Egyptian, but unlike Chinese, the Mayan system combines this with phonemic glyphs. Stross (1989a, 1989b), assuming that the Mixe-Zoque languages are descendents of Olmecan, effectively demonstrates the Olmec origin of rebus forms in the New World.

Some Chinese words for which the original glyph is known, are virtually identical with the Egyptian equivalents. The earliest Chinese hieroglyphs, dating from the Shang dynasty, are remarkably similar as to phonological representation, meaning, and graphic design. Thus, we find very similar forms that represent both visually and orally the words for 'man,' 'sun,' 'moon,' and 'rain'. 'Man', represented by a stylized man glyph, is vocally ren in Chinese, and rm in Egyptian. In both, The glyph for 'sun'

is a circle with a central mark. Vocally this is rih in Chinese, and re^{r} in Egyptian, but pronounced re: in Coptic. Similarly, 'moon' is represented by virtually identical, vertically placed, half-moon glyphs in both scripts. In Chinese, 'moon' is yueh. Egyptian i$'^{h}_{.}$, 'moon' was pronounced yoi$^{h}_{.}$ in Coptic.

Although Olmec sculptures seem to resemble scenes rather than scripts, decorative shapes very often resemble Egyptian glyphs and combinations of these reveal messages that can to some extent be deciphered. The ancient Maya combined glyphs, with or without surrounding cartouches, with sculptures, so the Olmec shapes may well serve as glyphic sanction for Olmec glyphs. Stross (1989b) describes a rebus association between the number three and the bloodletting iconography of the Maya and their Olmec predecessors. Ritualized self-blood-letting to assure agricultural fertility is shown as performed with a dagger decorated with three feather plumes appended to a three-pronged element on the handle. The handle is ~~also~~ surrounded by three horizontal bands. Personalized versions show three circular knots on headdresses. Three-knotted ribbons also figure as a glyph referring to blood-letting. Another glyph depicts three flint knives held in a row in an open hand with thumb extended. Similar groups of three are found on pottery and stelae depicting blood-letting scenes. Stross traces the Maya pattern of three bars, circlets, or knots back to Olmec examples. He also has discovered that in the (presumably Olmec) derived Zoquean languages, the number three reconstructs as *tuk, or *tuku. *tuk also translates as 'cut,' usually 'cut fruit,' which relates this homophonic complex to the harvest, hence to fertility. The Chontal Mayan word meaning 'to bleed someone' is tuk. A reconstructed Mayan word,

glossed variously as 'to prick, break, puncture' and the like, reconstructs as *toq, or *tooq, while words meaning variously 'flint,' 'stab' or 'to let blood' reconstruct as *toq'.

Egyptian equivalences for this rebus are easily found. tq means 'cut, slay, strike,' and tqs means 'to pierce, penetrate, to cut, to stab'. The vowel nucleus, with this word, is represented in post-Egyptian Coptic as to:kc. Also, in Egyptian tk? means 'grain, fruit.' In one Mixe dialect, the verb stem tuk means 'to pick flowers, to harvest beans,' which strengthens the harvest analogy. Rebus homophony is probably nowhere necessarily exact. Egyptian rebus homophony required only the agreement of consonants, with weak consonants often disregarded (Fischer 1989: 63). Zoquean and many Mayan languages have conflated *q and *k, so that a contrast no longer exists.

While hieroglyphic writing does not feature prominently in the earliest Mesoamerican stone sculpture, comparison of Egyptian hieroglyphic symbols with markings on Olmec sculptures reveals similarities that suggest that writing did, indeed, have a place in Olmec culture. It perhaps occured largely on perishable material, as it did, for example, on bone in China. No bone with Olmec associations has survived the damp tropical climate of the Olmec area. In any case, it seems fairly certain that writing and calendrical glyphs of the Zapotec Monte Alban horizon, as well as those of the Mixtec and Maya, derived from the earlier Olmec culture (Caso 1965:931-932, Bernal 1965:799). While there are differences in calendrical groupings in the various cultures under discussion, they agree in registering 360 days grouped into months, followed by a final extra five days.

A striking calendrical correlation between Egypt and the New World is that the Mayan calendrical day count projects the beginning of Mayan time backward to a starting date that is equivalent to the Julian calendar date of September 7, 3114 B.C. (Lounsbury 1989:205). 3100 B.C. dates the beginning of the first Egyptian dynasty, commemorated as the time of the unification of Upper and Lower Egypt, and the beginning of recorded Egyptian history!

Even before the New Empire, Egypt sent expeditions in search of such resources as unusual stones and incense plants. Green and blue stones (serpentine and lapis lazuli in Egypt, and jade in China and Mesoamerica) were accorded special--perhaps sacred--value. Egyptian daily and mortuary religious rites required the use of incense imported from the Arabian and Somali coasts. In China incense was burned to ancestors and household gods. In Mesoamerica, copal incense is still extensively used in worship. These resources must have been sought out by the Egyptians and their sacred uses introduced in the lands in which they were found.

The comparative linguistic data on which this paper is based are too complex and specialized to be appropriate for a short discussion, and ~~must be left~~ require technically elaborated treatment suitable for to specialists to evaluate. The ultimate acceptibility of my transoceanic argument rests largely on a careful review of my linguistic analysis. In addition, a thorough iconographic comparison, coupled with linguistic equivalences represented in glyphs, will uncover a great deal of cultural evidence which should prove as relevant to cultural anthropologists and geographers as to comparative linguists and archaeologists.

References Cited:

Bernal, Ignacio. 1965. Archaeological Synthesis of Oaxaca. In Archaeology of Southern Mesoamerica, Part 2. Edited by Gordon R. Willey. Handbook of Middle American Indians, Vol. 3. Austin: University of Texas Press. Pp.837-848.

Campbell, Lyle, and Terrence Kaufman. 1976. A Linguistic Look at the Olmecs. American Antiquity 41: Pp. 80-89.

Caso, Alfonso. 1965. Zapotec Writing and Calendar. In Archaeoloty of JSouthern Mesoamerica, Part 2. Edited by Gordon R. Willey. Handbook of Middle American Indians, Vol. 3. Austin: University of Texas Press. Pp. 931-947.

Edmunson, Munro S. 1971. The Book of Counsel: The Popol Vuh of the Quiche Maya of Guatemals. Publication 35, Middle American Research Institute, Tulane University, New Orleans.

Heine-Geldern, Robert. 1966. The Problem of Transpacific Influences in Mesoamerica. In Archaeological Frontiers and External Connections. Edited by Gordon F. Ekholm and Gordon R. Willey. Handbook of Middle American Indians, Vol. 4. Austin: Texas University Press. Pp. 297-295.

Keightley, David N. 1989. The Origins of Writing in China: Scripts and Cultural Contexts. In The Origins of Writing. Edited by Wayne Senner. Lincoln and London: University of Nebraska Press. Pp. 171-202.

Lounsbury, Floyd. The Ancient Writing of Middle America. In The Origins of Writing. Edited by Wayne Senner. Lincoln and London: University of Nebraska Press. Pp. 203-238.

Shao, Paul. 1983. The Origin of Ancient American Cultures. Ames, IA: Iowa University Press.

Stross, Brian. 1989a. Olmec Vessel with a Crayfish Icon: An Early Rebus. In Word and Image in Maya Culture: Explorations in Language, Writing, and Representation. Edited by William F. Hanks and Don S. Rice. Salt Lake City: University of Utah Press. Pp. 143-164.

Stross, Brian. 1989 b Maya Bloodletting and the Number Three. Anthropological Linguistics, Vol. 31, Nos. 3-4. Pp. 209-226.

Swadesh, Mauricio, and Madalena Sancho. 1966. Los Mil Elementos del Mexicano Clásico: Base Analitica de la Lengua Nahua. Instituto de Investigaciones Históricas. Mexico D.F.: Universitdad Nacional Autónoma de México.

Whorf, Benjamin Lee. 1948. Loan Words in Ancient Mexico. Philological and Documentary Studies, Vol. I, No. 1. Publication No. 11, Middle American Research Institute. New Orleans: The Tulane University of Louisiana. Pp. 2-14.

Witkowski, Stanley R. and Cecil H. Brown. 1978. Mesoamerican: A Proposed Language Phylum. American Anthropologist, Vol. 80, No. 4. Pp. 942-944.

Marq L. Foster. Old World Languages in the Americas. (Handout)

filed as SYM/EWORLD.COG

Cognate Sets (sample): Egyptian (E), Mixe-Zoque (MZ), Mayan (M), Quechua (Q).(abbreviation after family = dialect)

ARM, HAND: E gb? 'arm'; MZ kɨ? 'hand'; M Q q'ab 'hand', Q k'apa 'span from thumb to little finger'.

BREATH, VAPOR: E hh 'breath, warm wind, to breathe into'; MZ ZSP hehket 'to breathe deeply'; M Tze hahb 'vapor, yawn, breath'; Q hah 'emanation of vapor, exhalation'

BURN: E z?m 'to burn', z?m-t 'a burning, fire'; MZ sam- 'to heat, sun, warm oneself (by the fire); M Tze samet 'griddle'; Q sans 'ember, coal, or wood that is burning'.

BURN, SHINE: E ỉm 'to burn, flame, blaze', ỉmw 'light, rays, beams'; MZ yum- 'to cook, boil, itch'; MQ remov, removik, remo- 'to shine', Tzo yamal osíl 'dawning'; QE, A yanu- 'to cook.

CEASE, CALM: E tm 'cease, perish, close, the mouth', t?my 'to be silent', Copt. to:m; MZMO tɨma- sleep', MT tana, ta?ni 'to be slow, late'; MQ tana 'to cease to exist, await;, tanalih 'stop, shut up and be quiet'; Q t^haníyay 'to be calm'.

CHILD, BABY: E nw, wnnw 'child, baby'; MZ un- 'child'; M un- 'child, baby', Ch uñe' 'baby that cries'; Q ñuñu 'breast, teat, udder'.

COMPLETE: E tm, tmm, dm?m 'to complete, finish'; MZ ta?n 'to complete, finish'; M tam 'limit, boundary'; Q t^hani 'to heal'.

DIE, END: E ?q, ?q? 'to die, come to an end, fail, diminish'; MZ Z ka?-, M o?k- 'to die'; M Q oqo- 'to pass', Ch ok'mɨl 'to decay', ok'ben 'decayed'.

HEIGHT: E bmʿy, bwmʿy 'high places; MZ pɨm- 'thick, rise, grow'; M Q bom 'fat'; Q puna 'Andean peaks', punki- 'to swell'.

HOLE: E $^{h}_{\cdot}$t-t 'shaft of a mine'; MZ hot 'hole'; M hot- 'hole'; Q hutk'u 'hole'.

HOUSE: E ʿd 'house, abode'; MZ tɨk 'house'; M teq 'house, granary', Q taqe 'storage shed'.

JOIN, UNITE: E dmm 'to unite with', dm? 'to bind, tie together, gather together, collect'; MZ tom- 'near', M tam 'to gather, join, collect'; Q C tama$^{v}_{c}$aku- 'to join with someone'.

LITTLE: E bg? 'little, diminutive, feeble, weak; MZ pi?k 'little'; M biq' 'little'; Q piki 'flea, small'.

RISE, ASCEND: E hm? 'to rise, ascend'; MZ ZSP ha?mɨ?y 'to grow up', Z hɨ?m- 'to hang'; M Tze hemel 'heaped up', Ch xomol 'heaped up', Q hana 'above', hanan 'height'.

SMELL, KISS: E zn, sn 'to smell, kiss', $^{v}_{s}$?n?$^{v}_{s}$ 'to stink"' MZ MS canca?n 'smell (of fish)', MT caancɨn 'smell (of rotten egg)'; sénqa 'nose', asna 'to stink'.

SAW, CUT, CHEW: E w?s 'to saw', w?sw?s 'to saw, cut' (Arabic wasa 'to shave the head', wa$^{v}_{s}$ara 'to saw apart'); MZ Z was 'to bite, chew'; M Q va$^{v}_{s}$ 'to eat something crunchy'; Q A wista 'to graze'.

WRITE[1]: E sb? 'to teach, learn', sb?-t 'teaching, education, lore of books, pupil'; M Q c'ib 'write, paint', Tzo c'ibab 'secretaries, scribes'.

WRITE[2]: E hn 'a scribe's writing box'; M Tze hun 'letter, book, paper'.

WRITE[3]: E h?yw 'writing, deed, documment'; MZ Z hay- 'to write', M ha?a, ha?y 'to write'.

WRITE[4]: E qrqr 'the god who was the scribe or secretary of Osiris' (Arabic qalam 'writing, script'); Q q^{h}ilqi 'to write'.

Language Origins in the Americas

Mary LeCron Foster

Department of Anthropology, University of California, Berkeley

(Abstract of paper prepared for Annual Meeting of the Language Origins Society, Selwyn College, Cambridge University, Sept. 7-10, 1992.)

Linguistic diversity in the Americas is extreme. Since the New World was settled from the Old, it must be assumed that language was one of the most basic cultural artifacts that accompanied the settlers. Despite this fact, there has never been a concerted search for Old World language connections, surely one of the most important areas for comparative research. If such connections are to be firmly established, it cannot be done without recourse to the comparative method of language reconstruction, a certain tool for the establishment of genetic relationships.

The comparative method can be used to demonstrate a single (monogenetic) source for all of the world's languages. It can also be used to demonstrate linguistic isoglosses that show successive points of prehistoric divergence of language families. As divergence points are brought closer to the present, surprisingly close relationships between certain Old and New World language families can be discerned. This paper will discuss some of the most striking of these.

Reading copy

Old World Language in the Americas

Mary LeCron Foster

Department of Anthropology, University of California, Berkeley.

(Paper prepared for the annual Meeting of the Language Origins Society, Cambridge University, Cambridge, England, September 1992.)

At earlier meetings of the Language Origins Society, I have focussed on language origin. This time I am going to talk about language origins. My single origin model is not valid only as an explanation of how language came into being in the Paleolithic. It also provides a baseline for language change--or how language became languages during subsequent eras--especially during the Neolithic, and on into the Bronze Age.

The language stage that I have called Primordial Language (PL) was the culmination of a slow Paleolithic buildup of non-complex, or primary, oral articulations with consistent semantic content (e.g. Foster 1990). I have speculated that this inventory of phememes (minimal units of sound and meaning) probably held until the early Upper Paleolithic, after which phememe concatenations created at least some secondary phonemes while, at the same time, some primary phememes were lost in every language. Phememe sequences had also become consolidated into words. Some of these continued as words, others continued as word roots or affixes. Compounding of roots, or root and affix, formed secondary stems. Finally pronominal, spatial, temporal, and modal

meanings were attached as an outer, syntactically motivated, layer. These affixes had begun as words and often remained as such in other languages. These later accretions probably were in process of formation during the Upper Paleolithic, and became consolidated during the Neolithic, when wider separations between groups encouraged change and stylistic variations. Written records in some languages during the Bronze Age indicate that by that time global variation was extensive.

Worldwide exploration of language resemblances by means of the comparative method--the linguistically well-established method of using regularity of sound change to certify genetic relationships--has made it possible to establish some language families and stocks, and to hypothesize some further groupings. In the effort to lump more and more languages together, some researchers, most notably Greenberg, have bypassed the comparative method and suggested groupings supported by nothing other than some perceived resemblances between certain languages. On this uncertain basis Greenberg has postulated a macro-grouping of American Indian languages.

Such hypotheses cannot be sustained. Resemblances between all languages occur for the simple reason that all historical languages stem from PL, and some sounds change while others remain stable. Stable sounds and meanings provide some retrievability from the common PL matrix. It is also not true, as Greenberg and many other linguists have too readily assumed, that the comparative method is useless at very great time depths. With the baseline derived from the structure of PL it is possible to work from the top, or earlier, structures down toward those of historic

times, and thus to discover what changes from the earlier structure had to occur in order for the later structure to emerge. Changes are patterned, producing clusters of isoglosses (shared changes--that differentiate nodes of the family tree.

Determination of some of these isoglosses led me to the discovery that some languages in the Americas were surprisingly closely related to languages in the Old World. Specifically, the Mixe-Zoque languages of southern Mexico, hypothesized to derive from the language spoken by the Olmec peoples (Campbell and Kaufman 1976), and the Mayan languages of Mexico and Central America, are demonstrably closely related to, and probably descended from, ancient Egyptian. Quechua, the language of the ancient Incas of South America, exhibits a similar relationship to Egyptian but with what seems to be a later Arabic overlay. This is very like the derivation of English from a Germanic source, with a later, borrowed, overlay from French and Latin.

Egyptian hieroglyphs registered consonants, but not vowels. The only hitherto known Egyptian daughter language, Coptic, sheds some light on earlier vocalism, while vowel agreement among the American Egyptoid languages, and with Coptic (where Coptic forms are available) is close. Consonant reflexes are regular. Consonantal metathesis is frequent, and follows definable, shared, rules in Mixe-Zoque and Mayan. The so-called Hamitic languages other than Egyptian, such as Hausa, are far more distantly related to that language than are the Egyptoid languages of the New World.

In a separate and unrelated development, another major language family of North America, Uto-Aztecan, proves to derive either from Proto-Indo-European (PIE), or from a pre-PIE stage.

Interestingly, the American linguist, Morris Swadesh (Swadesh and Sancho 1966), was aware of striking similarities between Latin and Aztec, but failed to use the comparative method for substantiation.

On a shared earlier level, the Afro-Asiatic languages, including Egyptian and Arabic, are themselves related to PIE. Certain other Old World languages, such as Dravidian of India and Austronesian of the South Pacific, share the Afro-Asiatic connection. This needs further examination, but seems to be Egyptoid rather than Semitic. Chinese also shows surprising Egyptoid parallels.

A great deal of painstaking work is necessary to establish the relative times of branching of these from the common prototype. Since, ultimately, all of the world's languages developed from the PL prototype, all major isoglosses showing successive tree branching should ultimately yield to analysis.

Olmec of Mexico was the first high culture to appear in the New World. The Zapotec and Mixtec languages are descended from similarly complex Mexican cultures only slightly less ancient. Mayan culture, with many Olmec-derived traits, appeared perhaps half a millenium later. A wider Egyptian influence in the New World is very probable, with languages both splitting off from an Olmec prototype, and (perhaps) introduced through successive oceanic crossings. Witkowski and Brown (1978) proposed a linguistic phylum called Mesoamerican, which included Mayan, Zoquean, Huave, Totonac, Lenca, Jicaque, and the Otomanguean languages, including Zapotec and Mixtec. The relationship between the first two is close. Of the others I have so far had time only to make a

cursory comparative exploration of the interrelationship between Zapotec and Mixtec and Egyptian, which seems likely to hold up.

Over 40 years ago, Whorf (1948) suggested that Mayan and Zoquean were genetically related within a phylum that he called Macro-Penutian. He felt that this should also include Uto-Aztecan and California Penutian. I believe that such an inclusion involves a mixing of family tree levels. To have validity it would have to include both Indo-European and Afroasiatic, as well as many other established or semi-established stocks.

In the Andes, the first high culture, Chavin, roughly coincident with the Olmec, exhibited Olmecoid iconography, suggesting a possible linguistic connection. Other Andean high cultures followed, culminating in the Inca empire, linguistically Quechuan. Archaeologists have long known that there was Pre-Columbian traffic between Mesoamerica and the Andes, which probably dates back to the Chavin-Olmec horizon. With the relationship of Quechua established, it seems probable that the language of Chavin was an Egyptoid antecedent.

World-wide, the early high culture dates in these and other parts of the world correlate strikingly with Egyptian history. In the Old World, it has been speculated that Dravidian of southern India may have been the language of the Indus valley culture, dated from about 2500 B.C. In Egypt, the Old Kingdom began with the 4th Dynasty in 2613 B.C. The Old Kingdom was a classic period of Egypt's greatness, during which the the great pyramids were built as monuments to successive kings, military expeditions were undertaken, and 40 well-laden vessels were said to have brought loads of timber from Lebanon, so crossings to both the Indus

Valley and the New World were feasible.

The Chinese language was first recorded on oracle bones associated with the Shang culture, which appeared at around 1500 B.C. Both the Olmec and Chavin cultures appeared abruptly at about the same date. In Egypt, the period following the beginning of the New Empire with the 18th dynasty in 1567 BC saw an intensification of conquest and organized rule abroad. The invading Hyksos conquerers were expelled and voyages by both land and sea for exploration, resource exploitation, conquest, and trade were common. Ships capable of carrying heavy loads of cargo and men had been available for over 1000 years.

In view of the cultural capabilities of the Egyptians, it is perhaps not surprising that Egyptian ships reached the New World, although the sea voyage to the unidentified Punt, presumed to have been the longest, is also always presumed to have been to someplace on the coast of Africa. Since Egyptian ships were entirely of vegetable materials no vestiges of them were likely to survive in the New World or elsewhhere.

There has long been speculation of Chinese artistic influence in ancient Mesoamerica. While Heine-Geldern (1966) dates this only to about 700 B.C., Shao (1983) relates it to the earlier Olmec horizon. And, indeed, Chinese shows significant resemblance to Mesoamerican languages and Egyptian. Linguistic evidence should ultimately reveal if the shared Egyptian elements found in the New World point to a single or multiple contacts. A mixture of races in Egypt, long a crossroads between Africa and Asia, easily accounts for the existence of African models for the Olmec giant head sculptures, as well as for the singularly contrastive,

thin-lipped, bearded figures.

The Mayan origin myth, the Popol Vuh (Edmunson 1971), tells of a group of four great sages who arrived on the Mayan sea coast and found nothing, so that they had to create everything themselves. I have found that consonantally their Quiche Mayan names correlate with Egyptian words of the same or similar meanings. Vocalically, for the sake of pronouncibility, I have simply echoed Mayan values. The name of the first sage was q'uq' kumatz. Q'uq', meaning both the sacred Quetzal, bird, and 'precious,' accords with a syllabic reduplication of the Egyptian word *qu?, meaning 'exalted one, a god.' (Post-vocalic Egyptian glottal stops moved forward in a word to coalesce with other stops in both Mayan and Quechuan.) Kumatz, with meanings of 'snake' and 'sinuous thing' accords phonemically with Egyptian *gumash 'hair, lock, tress', also implying sinuousity. Next, The root *tep-, of Tepev,'ruler', accords with Egyptian *tep 'head, chief'. Third, the root tzak of the name Tzakol, 'creator, maker' accords with Egyptian *tzak 'meaning 'to bring into being'. Finally, the Mayan root bit- 'to shape pottery and children', which underlies the name, Bitol, 'shaper,'accords both semantically and phonemically with the verbal root of the Egyptian noun,*bity , meaning 'mould'.

Examination of Olmec iconography reveals many similarities with Egyptian. Egyptian costuming, and especially headdresses had great iconographic significance. Male and female clothing and hair styles were similar in the two cultures. In both traditions each depicted personage, whether of god or ruler, was identifiable because of his characteristic head iconography. Headdresses of

Egyptian royalty feature the uraeus, the forepart of a cobra projecting over the monarch's forehead. A similar forehead treatment is found in some Olmec depictions, as is a sort of double crown, reminiscent of the double crown of Egyptian royalty which celebrates the unification of Upper and Lower Egypt.

Egyptian, Mesoamerican, and Chinese writing systems all used a rebus approach, based on homophonic concurrence of words with differing meanings. In English, this is as if a sketch of the insect 'bee' were used to to represent the verb 'be'. Where ambiguity might result, classifiers were included to clarify meaning domains. Also like Egyptian, the Mayan system combines rebus symbols with phonemic glyphs. Brian Stross (1989a, 1989b), assuming that the Mixe-Zoque languages are indeed Olmec descendents, effectively demonstrates the Olmec origin of hieroglyphic rebus forms in New World iconography.

Although Olmec sculptures seem to resemble scenes rather than scripts, decorative shapes very often resemble Egyptian glyphs and combinations of these reveal messages that can to some extent be deciphered. The ancient Maya combined glyphs, with or without surrounding cartouches, with sculptures, so the shapes may well be Olmec glyphs. In one study, Stross (1989b) describes a rebus association between the number three and the bloodletting iconography of the Maya and their Olmec predecessors. Ritualized self-blood-letting to assure agricultural fertility is depicted as performed with a dagger decorated with three feather plumes appended to a three-pronged element on the handle. The handle is also surrounded by three horizontal bands. Personalized versions show three circular knots on headdresses. Three-knotted ribbons

also figure as a glyph referring to blood-letting. Another glyph depicts three flint knives held in a row in an open hand with thumb extended. Similar groups of three are found on pottery and stelae depicting blood-letting scenes. Stross traces the Maya pattern of three bars, circlets, or knots back to Olmec examples.

In the Mixe-Zoque languages, the number three reconstructs as *tuk, or *tuku. *tuk also translates as 'cut,' usually more specifically, 'to cut fruit'. This relates this homophonic complex to the harvest, hence to fertility. The Chol Mayan word meaning 'to bleed someone' is also tuk. A reconstructed Mayan word, glossed variously as 'to prick, break, puncture' and the like, reconstructs as *toq, or *tooq, both with a final *q, while words meaning variously 'flint,' 'stab' or 'to let blood' reconstruct as *toq', with a final glottalized *q. Mixe-Zoque, and some Mayan languages have conflated *q and *k as /k/. Chol, however preserves the contrast, showing that *tuk, with a final /k/ means both 'cut' as in Zoque, and 'to bleed someone' as in Chol, while words with final /q/ mean 'prick', or 'puncture', and those with a glottalized /q/ mean 'flint', 'stab', and 'to let blood'.

Egyptian equivalences, for this rebus are easily found. tq, with unchanged phonemicization, means 'cut, slay, strike,' and tqs means 'to pierce, penetrate, to cut, to stab'. The vowel nucleus is represented in post-Egyptian Coptic as to:kc. Also, in Egyptian tk?, with /k/ instead of /q/, means 'grain, fruit.' In one Mixe dialect, the verb stem tuk means 'to pick flowers, to harvest beans,' which strengthens the harvest analogy. Rebus homophony is probably nowhere necessarily exact. Egyptian rebus homophony required only the agreement of consonants, with weak

consonants often disregarded. It would seem that in this case, meanings associated with both velar and postvelar stops provide additional resonance for the trope.

While hieroglyphic writing does not feature prominently in the earliest Mesoamerican stone sculpture, comparison of Egyptian hieroglyphic symbols with markings on Olmec sculptures reveals similarities that suggest that writing did, indeed, have a place in Olmec culture. It perhaps occured largely on perishable material, as it did, for example, on bone in China. No bone with Olmec associations has survived the damp tropical climate of the Olmec area. In any case, it seems fairly certain that writing and calendrical glyphs of the Zapotec Monte Alban horizon, as well as those of the Mixtec and Maya, derived from the earlier Olmec culture (Caso 1965:931-932, Bernal 1965:799). While there are differences in calendrical groupings in the various cultures under discussion, they agree with Egypt in registering 360 days grouped into months, followed by a final extra five days. Also like the Egyptians, the Mayas gave names to their years.

A very striking calendrical correlation between Egypt and the New World is that the Mayan calendrical day count projects the beginning of Mayan time backward to a starting date that is equivalent to the Julian calendar date of September 7, 3114 B.C. (Lounsbury 1989:205). 3100 B.C. dates the beginning of the first Egyptian dynasty, commemorated as the time of the unification of Upper and Lower Egypt, and the beginning of recorded Egyptian history!

Even before the New Empire, Egypt sent expeditions in search of such resources as unusual stones and incense plants. Green and

blue stones (serpentine and lapis lazuli in Egypt, and jade in China and Mesoamerica) were accorded special--apparently sacred--value. Egyptian daily and mortuary religious rites required the use of incense imported from the Arabian and Somali coasts. In China incense was burned to ancestors and household gods. In Mesoamerica, copal incense is still extensively used in worship. These resources must have been sought out by the Egyptians and their sacred uses introduced in the lands in which they were found.

I provide this illustrative sampling of cultural features not as proof of the transoceanic relationship, but as correlative evidence. Definitive proof lies in the complete regularity of the sound/meaning correspondences.

The extensive comparative linguistic data on which this paper is based are too complex and specialized to be appropriate for a short discussion. Obviously, the ultimate acceptability of my transoceanic argument depends upon a careful review of the linguistic material. In addition, a thorough iconographic comparison, incorporating linguistic equivalences, will uncover a great deal of strikingly supportive cultural evidence.

References cited:

Bernal, Ignacio. 1965. Arthaeological Synthesis of Oaxaca. In Archaeology of Southern Mesoamerica, Part 2. Edited by Gordon R. Willey. Handbook of Middle Ameria Indians, Vol. 3. Austin: University of Texas Press. Pp. 837-848.

Campbell, Lyle, and Terrence Kaufman. 1976. A Linguistic Look at the Olmecs. American Antiquity 41: Pp.80-89.

Caso, Alfonso. 1965. Zapotec writing and calendar. In Archaeology of Southern Mesoamerica, Prt 2. Edited by Gordon R. Willey. Handbook of Middle## American Indians, vol. 3. austin: University of Texas Press. Pp. 931-947.

Edmunson, Munro S. 1971. The Book of Counsel: The Popol Cuh of the Quiche Maya of Guatemala. Publication 35, Middle American Research Institute, Tulane University, New Orleans.

Foster, Mary LeCron. 1990. Symbolic origins and transitions in the Palaeolithic. In The Emergence of Modern Humans: An Archaeological Perspective. Edited by Paul Mellars. Edinburh: Edinburgh University Press. Pp.515-535/

Heine-Geldern, Robert. 1966. The problem of transpacific influences in Mesoamerica. In Archaeological Frontiers and External Connections.

Lounsbury, Floyd. The ancient writing of Middle America. In The Origins of Writing. Edited by Wayne Senner. Lincoln and London: University of Nebraska Press. Pp. 203-238.

Shao, Paul. 1983. The Origin of Ancient American Cultures. Ames, IA: Iowa University Press.

Stross, Brian. 1989b. Olmec Vessel with a Crayfish Icon: An Early Rebus. In Word and Image in Maya Culture: Explorations in Language, Writing, and Representation. Edited by William F. Hanks and Don S. Rice. Salt Lake City: University of Utah Press. Pp. 143-164.

Stross, Brian. 1989b. Maya bloodletting and the number three. Anthropological Linguistics Vol. 31, Nos. 2-4. Pp. 209-6.

Swadesh, Mauricio, and Madalena Sancho. 1966. Los Mil Elementos del Mexicano Clasico: Base Analitica de la Lengua Nahua. Instituto de Investigaciones Historicas. Mexico D.F.: Universidad Nacional Autonoma de Mexico.

Whorf, Benjamin Lee. 1948. Loan words in ancient Mexico. Philological and Documentary Studies, Vol. I, No. 1. Publication No. 11, Middle American Research Institute. New Orleans: The Tul@@ane University of Louisiana. Pp. 2-14.

Witkowski, Stanley R. and Cecil H. Brown. 1978. Mesoamerican: a proposed language phylum. American Anthropologist, Vol. 80, No. 4. Pp. 942-944.