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EARLY SPEAKERS IN THE NEW WORLD

ABSTRACT. — The Amerindian languages are noted for their exceptional diversity and the difficulties one faces when attempting to elicit their origins and effect a classification. This paper places American Indian linguistics within the broader context of the study of early man in the New World; several theories of origins and population movements are put forward in an effort to demonstrate that a multidisciplinary approach combining the techniques of archeology, linguistics, and physical anthropology is indispensable for the serious study of any aspect of American prehistory.

RÉSUMÉ. — Les langues amérindiennes sont notoires pour leur diversité exceptionnelle et les difficultés encourues par ceux qui tentent d'en tracer l'origine et d'arriver à une classification. Cette étude place la linguistique amérindienne dans le contexte plus général des origines de l'homme en Amérique; on y présente plusieurs théories de mouvements de population, le but étant de prouver qu'une attitude interdisciplinaire, ralliant les techniques de l'archéologie, de la linguistique et de l'anthropologie physique, est indispensable à l'étude de n'importe quel aspect de la préhistoire américaine.

KEY WORDS: Amerindian — Mongoloid — Historical linguistics — Glottochronology — Population movements.

INTRODUCTION

"There can be little doubt that from the beginning the one *overwhelming* fact about the languages of the Americas has been their diversity" (Haas 1969, 99). Indeed, the number of American Indian languages is so great that nobody seems to agree on any particular figure: the late Morris Swadesh himself, an expert on the subject, oscillated between 2200 (Swadesh 1964, 529) and 1500 (Swadesh 1971, 257) for the number of *distinct* languages in the Americas in historic times. A fair amount of confusion still reigns — especially in the case of South America which, unlike its northern neighbor,

has not had the benefit of a century of serious investigation. Of South America John Howland Rowe wrote in 1951 that "no other area of comparable size contains so many or such diverse native languages" (in Lyon 1974, 43), adding that "the description and classification of South American Indian languages is one of the biggest pieces of unfinished business in the field of linguistics" (*ibid.*). Even though the situation has somewhat improved in the last thirty years — thanks particularly to the researchers of the Summer Institute of Linguistics: see for example Huxley and Capa (1964: 23ff, 139ff, 240) — there is still considerable imbalance in the amount of linguistic studies carried out in South and North America.

The importance of studying Amerindian languages comprehensively was recognized as early as 1785, when Thomas Jefferson wrote of the American aborigines, in his *Notes on the State of Virginia*: "A knowledge of their several languages would be the most certain evidence of their derivations which could be produced" (in Darnell 1974, 126). He was echoed a century later by Daniel G. Brinton, who reflected in 1885: "How valuable it would be to take even a few words, as maize, tobacco, pipe, bow, arrow, and the like, each representing a widespread art or custom, and trace their derivations and affinities through the languages of the whole continent! We may be sure that striking and unexpected results would be obtained" (in Darnell 1974, 208). With this statement Brinton foreshadows the analysis of borrowed forms and the concern of the lexicostatistic method for determining the degree of lexical relationship among languages on the basis of a comparison of their core vocabularies, and for using linguistic evidence in order to reconstruct vanished cultural events — as has been done in the last three decades for the Indo-European languages.

Taken a step further, lexicostatistics can be used as a kind of "soft" radiometric dating technique known as glottochronology and developed by Morris Swadesh and his followers since 1949: "glottochronology (...) uses the percentage of common vocabulary in a diagnostic word list to obtain an index of divergence related to the time and degree of separation of two dialects or languages" (Swadesh 1964, 545–6). This method is not without problems, but used in conjunction with other anthropological techniques it is a very useful tool in the reconstruction of the cultural past of nonliterate societies: "Many specific features of the culture of the common period can also be determined from linguistic study. When this information is linked with the evidence of dirt archeology, new clarity can be gained" (Swadesh 1964, 529). Lexicostatistics, linguistic reconstruction, and glottochronology have all played a part in deepening our acquaintance with Amerindian languages; an account of the current state of this knowledge follows, in this order:

- (I) origins
- (II) classification of the American languages
- (III) population movements and language contacts.

1. ORIGINS

1.1. THE PHYSICAL EVIDENCE

Few people nowadays would seriously challenge the wave-model theory that native American populations are the product of an undetermined number of migrations over Bering Strait of groups coming from the Euro-Asiatic continent, and that contacts with other regions such as Polynesia or Africa — if there were any — were random and devoid of important physical or cultural consequences; on the linguistic side, the impact of such contacts would not have gone beyond the exchange of a few vo-

cabulary items (Swadesh 1964, 538ff). The languages of the native populations must therefore have evolved virtually untouched by outside influences; unfortunately languages leave no fossils, and all we can do to find the ultimate origin of the Amerindian languages is to compare extant tongues on both sides of the Pacific, in the hope of unraveling similarities that have not been erased by a long time-depth on the one hand, and that are not due to sheer chance on the other. As linguists have been dependent on archeologists and physical anthropologists for these preliminary researches, it is necessary at this point to examine the assumptions they have inherited.

In the first place there has been much reluctance on the part of archeologists to posit an early peopling of the Americas, while most geologists, "perhaps because they are accustomed to dealing generously with time, seem to have little trouble in embracing early man as a Late Glacial interloper anywhere from 15,000 to 100,000 years ago" (Macgowan and Hester 1962, 31). However, we should perhaps see in the archeologists' attitude a healthy reaction against some eccentrics such as Fiorino Ameghino, a museum director in Buenos Aires, who placed early man in America at some 15 m.y.a. and thus made Argentina the cradle of mankind (Macgowan and Hester 1962, 123–4). In any case such an inhibition on time-depth could not but influence the linguistic side of the research, as the following quotation shows:

The archeological date of man's first appearance in the New World has been pushed back, possibly to something over 30,000 years ago. Linguistic differentiation in America is great, but it probably is not great enough to require more than half the time given by the foregoing archeological date (Swadesh 1964, 529).

Even though it sets the limits of glottochronological efficacy at a reasonable 15,000 years, this statement is conservative and more than a little arbitrary, as rates of divergence may vary considerably among Amerindian languages, and in some cases post-divergence contact may have slowed down the differentiation process, thereby leading to an underestimation of the time-depth. If any absolute limit must be set for the date of human entry into the New World, it can theoretically be pushed back to early *H. sapiens* times, e.g. 200,000 B.P., when man was already adapted to a periglacial environment in Europe and could have crossed the Bering Strait if his Asian representative had reached a comparable stage of development; we already know that the pan-Arctic steppe region was homogeneous enough to have been wholly occupied when man had developed the necessary adaptive techniques (Hopkins 1979, 34). Few, however, are willing to hypothesize such an early migration and most, like C. S. Coon, have chosen to remain on the safe side of the controversy:

No archeological evidence has yet been unearthed on either side of the Strait to indicate a Riss-Illinoian emigration. The only facts that favor such a migration are typological. (...) 100,000 years ago is the very last date at which a crossing could have been made over a Riss-Illinoian land bridge" (Coon 1962, 478).

A Würm-Wisconsin entry into America is indeed easier to imagine, first simply because this period is closer to us, second because we know that the Bering land bridge was open to various extents between 50 and 40,000 B.P., and again between 28 and 10,000 B.P. (Hopkins 1967, 380). However, it should be remembered that the peopling of Australia some 50,000 years ago involved water crossing: there is no reason to think that the first Americans were less able to cross a narrow channel in some primitive watercraft.

A second common assumption is that the ancestors of modern Indians were all of Asiatic stock: this is of some consequence for linguists, as their search tends to be focused on similarities with East Asian languages alone if they accept this assumption. There is little dispute about the morphological status of present-day Indians: "From the standpoint of Mongoloid history, the dating of the arrival of the American Indians is important because the Indians, by and large, are fully Mongoloid in skin texture and color range, hair form, hair texture, hair distribution, and degree of sexual dimorphism" (Coon 1962, 480). "By and large", however, is an apt restriction here: the morphology of modern Indians (stature, pigmentation, nose and eye shape, etc.) shows enough variation to lead one to speculate with Macgowan and Hester (1962, 208) that "all the peoples of northern Asia did not always belong to

the now ubiquitous Mongoloid races". The historic problem of the position of the Ainu in Asia immediately comes to mind (see e.g. Poirier 1968, 697-698); on the American side of the Pacific, however, only prehistoric finds can give a clue — but their interpretation has diverged widely. If on the one hand Macgowan and Hester (1962, 215) maintain that "the typical, round-headed Mongoloid Indian is conspicuous by his antique absence", they are promptly contradicted by W. S. Laughlin (in Hopkins 1967, 414), who asserts with equal confidence that "there are no early skeletal materials that do not appear to fall within the range of American Indians". This prudent statement is itself rebutted by Washburn (1975, 4), claiming that "the American Indians stem from the ancestors of the marginal Mongoloid populations of south-east and west-central Asia", as "the earliest known immigrants to America were almost exclusively longheaded (dolichocephalic) types".

The study of blood polymorphism will certainly be most useful in determining affinities and divergences of Amerindian populations among themselves and with Asian populations: the Eskimo-Aleut stock, for instance, has been proved physically distinct from other Indian stocks on account of numerous common morphological characteristics, including a high percentage of blood group B (Laughlin, Jørgensen and Fröhlich 1979, 98). Anthropometry re-

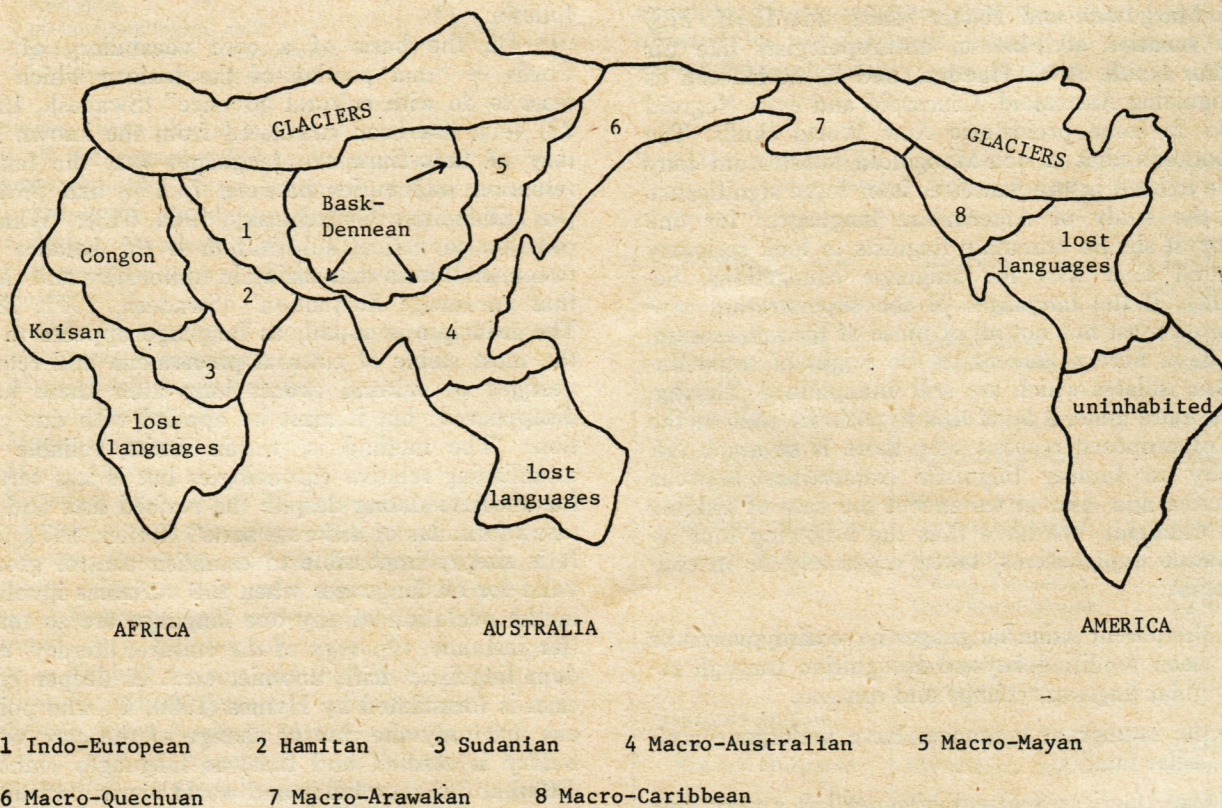


FIGURE 1. World linguistic situation ca 25,000 B.C. as hypothesized in Swadesh (1964).

mains an essential, if controversial, diagnostic tool in the study of physical substrata: it has revealed a complex Siberian substratum, less Mongoloid in character than modern Siberian populations (Alexseev 1979, 86), which compounds the problem of whether or not a non-Mongoloid substratum was present in the Americas in Glacial times. The claim to such a presence is supported by several archaic-looking skulls: Punín, Early Sacramento (Macgowan and Hester 1962, 217), and especially Lagoa Santa (Bryan 1978, 318ff), which hold in common the very un-Mongoloid feature of having heavy browridges. This characteristic, present to a comparable degree in the cranium at Kow Swamp 1 (Australia), can also be an indicator of considerable antiquity; for instance, the undated Lagoa Santa calottes described by Bryan (ibid.) can be compared morphologically with the Middle Pleistocene Mapa skull from China: "The supra-orbital tori are very thick and project markedly both forward and sidewise. Their upper surfaces merge gradually into the frontal squama with a slight sulcus supratralis, but not so distinct as in *Sinanthropus*" (Woo and Peng 1959, 177). If the Mapa calvarium thus described is seen as Neanderthaloid in organization, but with already discernible Mongoloid features (Aigner 1978, 28), we have here evidence for a pre-*H. sapiens sapiens* complex in East Asia and America: in this case, the first language(s) of the New World may have had a different level of complexity than modern languages and thus be forever beyond speculation.

Macgowan and Hester (1962, 31, 134ff, 218) also mention well-known anthropologists like Sir Arthur Keith, A. C. Haddon, and E. A. Hooton as recognizing Australoid, Caucasoid and even Negroid traits in some prehistoric New World skulls. The hypothesis that a non-Mongoloid substratum may have existed in the Americas is of some significance for the study of Amerindian languages: for one thing, it should stimulate linguists to look seriously beyond East Asia for language connections. Secondly, if the languages of the substratum supplanted most but not all of those of the substratum, we have here a clue as to the origin of some linguistic isolates which are still unexplained. Thirdly, on a more general level this hypothesis adds to the list of proposed reasons why there is so much difficulty in finding linguistic connections between America and Asia (if we except the case of Eskimo and Chukchi). We have thus the following four alternative explanations, taken separately or in conjunction:

- (I) the parent Asian languages have disappeared or been modified beyond recognition through regular linguistic change and contact;
- (II) the immigrant languages have undergone a similar fate;
- (III) the American-Asian divergence has a very long time-depth;
- (IV) other regions besides Asia were involved as the *Urheimat* of many Amerindian languages.

1.2. THE LINGUISTIC EVIDENCE

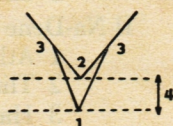
Figure 1 shows Swadesh's bold conception of the world linguistic situation around 25,000 B.P.; the Asian-American part rests mainly on learned speculation but provides a reasonable working hypothesis. The "Bask-Dennean" group especially has upset a number of linguists: it builds on Sapir's old hunch of a Sino-Tibetan/Na-Dene common origin, and for good measure introduces Basque, a notorious European isolate. Swadesh posited a migration period beginning ca. 25,000 B.P. and ending ca. 2,000 B.P., which broadly fitted the time-depths elicited by the glottochronological method. Population movements between the two continents could have occurred since 4,000 B.P. and the dialects concerned been totally absorbed; or else the migration could have been so massive that it was the dialect left in Asia that had been absorbed. The only firmly established genetic relationship is that between Chukotan and Eskaleutian, with a time-depth of 4 or 5,000 years, upon which Swadesh built to reconstruct a proto-Chukotan/Eskaleutian group connected with Uro-Altaic, Gilyak, Ainu and Wakashan (Swadesh, 1962, 1289; 1964, 531). The Sino-Tibetan/Na-Dene connection has been favored by Sapir, Swadesh, Lees and Shafer (1955, 1957); it has been doubted by Krauss (1973b, 963) and others on the familiar grounds that the linguistic evidence is far too slim. The glottochronological method has thus been most successful when it has limited itself to one continent. A brief outline of its workings and shortcomings follows.

On the basis of a core vocabulary of 100 words — "that portion of the lexicon which has least to do with cultural advance" (Swadesh, 1971, 32) — it has been calculated from the known history of Indo-European languages that the lexical retention rate varies between 74.4 % and 86.4 % per millennium (Gudschinsky, 1964, 613): "What is constant in lexical substitution is the balance between the forces that maintain uniformity and those that encourage fluctuation" (Swadesh, 1971, 283). The principle is sound, as language appears to be the most stable of cultural phenomena and retains vestiges of cultural events long after these have disappeared; but it must be applied with due caution: "The method is, within limits, reliable for establishing relative chronologies but is less certain for absolute dating despite the revised lists and revised formulas of different sorts" (Heller, 1972, 27). It is simply impossible to establish control groups valid for all languages when the variables involved in the evolution of any one language are so many (for instance: typology of the culture, literacy, random linguistic drift, anomie, etc.). A deeper criticism is formulated by Hymes (1960, 4), who points out that only the rate of change of the *core* vocabulary is studied and that, as languages embody different semantic fields and world views, "a fruitful area of glottostatistics might be the study of differences in rate of change in different parts of language". Further, Hymes (1960, 18) stresses that "glottochronology should be applied only after the

comparative method has prepared the way", so as to put into focus cognates otherwise obscured by semantic shift (e.g. *Tier/deer* in Indo-European) or phonetic shift (e.g. *Kopf/head*); hence the difficulty of grouping unwritten languages into broad families of distantly related elements.

Swadesh (1951, 21) computed that "the reduction of an originally identical basic vocabulary to only 5 per cent in common through gradual divergence would require something like 12,000 years". and posited that, with proper care, we could reconstruct time-depths exceeding 15,000 years (Swadesh, 1959, 27). These estimations are of necessity very imprecise, so numerous and uncontrollable are the variables involved; but they indicate clearly that two related languages must become unrecognizable after 20,000 years of continuous divergence: the antiquity of the native American languages is thus beyond doubt. Surprisingly enough, one of the inherent limitations of glottochronology, when carefully applied, is the risk of underestimation. Two factors are instrumental in skewing the linguistic dating: first, divergence is slower when the languages remain in geographical contact after separation; second, there is always a time lag between true split and glottochronological split — and an additive correction, necessarily uncertain, must then account for the period during which the newly separated languages determine their future courses. This process can be schematized as follows (after Hymes, 1960):

- 1 true split
- 2 glottochronological split
- 3 point of effective independence
- 4 additive correction (variable)



Of course, there also is a risk of overestimation — when all the cognates fail to be discovered for the reasons mentioned above (phonetic and/or semantic shift). Using the glottochronological method for relative dating, Swadesh (1964, 531) determined the order of separate arrival of the American languages as follows:

- (I) 3 isolated groups of South America: Tinigua, Omurano, Nambicuara;
 - (II) Macro-Carib (including Gê);
 - (III) Macro-Arawakan;
 - (IV) Macro-Quechuan;
 - (V) Macro-Mayan;
 - (VI) Kutenay, Wakashan, Na-Dennean, Eskaleutian.
- Out of these broad groupings emerged all the phyla (e.g. Hokan, Penutian) and all the families (e.g. Algonquian, Siouan) that exist today. The absolute dating of linguistic split within phyla has also been computed in a number of cases. To the figures shown in Table 1 we can add the results of Hoijer's (1956) study, which dates the split of Pacific Coast Athabascan from Northern Athabascan at 1000 to 1200 B.P., and of Apachean from Northern Athabascan at 700–1000 B.P. (in Hymes, 1957, 1000 to 1300 B.P.). Swadesh (1971, 222) gives a broad summary of the situation:

- (I) Athabascan includes 30 languages, with an internal time-depth of 1,600–1,800 years;

- (II) Algonquian: 12 languages, 2,000 years;
- (III) Siouan: 24 languages, 3,000 years;
- (IV) Uto-Aztecan: 24 languages, 4,000 years;
- (V) Chibchan: 30 languages, 3–5,000 years;
- (VI) Arawakan: 60 languages, 3–5,000 years;
- (VII) Tupian: 40 languages, 3–5,000 years;
- (VIII) Carib: 30 languages, 3–5,000 years.

These data are given as an illustration of the difficulties encountered by Amerindian glottochronology: first, language groupings vary considerably between authors, and even between different works of the same author; second, the notorious underinvestigating of South American languages can be seen in their splitting into more numerous groups than their northern counterparts — we simply do not know enough about them to establish broader relationships; third, the dates often exhibit a considerable standard deviation and should be understood as rough indications and interpreted relatively; fourth, and for the reason given earlier, these dates tend to be conservative as compared to archaeological dates — such as the ones presented by Workman (1980, 132):

The gulf of Alaska has been Eskimo for at least 3000 (and perhaps 6000) years, the western Alaskan coast for 4000 years (with intensive utilization for the last 2500 to 3000 years), St. Lawrence Island and Siberia for at least 2000 years, and Canada and Greenland for 4000 years.

These figures, as compared to those presented in Table 1 for the Eskaleutian stock, illustrate the fact that archaeological and glottochronological dates do not refer to the same phenomenon: in this case, for example, Workman states that Greenland has been affected by an Eskimoid culture for some 4,000 years; Swadesh simply says that the dialect char-

TABLE 1. *Time-depths of some Amerindian languages (after Swadesh 1954; simplified)*

Language groups	Members compared	Times-depths (in years)
Eskaleutian stock	Eskimo-Aleut	3,000
Eskimoan family	Yukon-Greenland	1,000
Nadene stock		
Dene substock	Tlingit-Hupa	2,000
Mosan phylum	Salishan-Quileute	8,600
Chemkashan sub-phylum	Kwakiutl-Quileute	6,500
Salishan subphylum	Pentlatch-Kalispel	5,500
Penutian phylum	Yokuts-Chinook	5,500
	Yokuts-Tsimshian	5,500
	Tsimshian-Chinook	4,400
Utaztecan phylum	Nahua-Paiute	3,100
	Nahua-Papago	2,900
	Papago-Paiute	2,700
Hokanoid phylum		
Hokan stock	Washo-Comecrudo	5,500
Eastern Hokanoid	Chitimacha-Atakapa	4,700
Huavemayan phylum	Totonac-Yucatec	6,500
	Huave-Totonac	6,000
Mayan stock	Yucatec-Huastec	3,200
Arawakan stock	Dominica-Lokono	2,100

acterizing this culture stopped having contacts with the western end of its linguistic continuum and started following its own course about 1,000 years ago. This is an extreme, but certainly not uncommon, example of the time lag described earlier.

2. CLASSIFICATION OF THE AMERICAN LANGUAGES

This classification has been a constant source of excitement and of frustration for linguists: excitement because the task is important and well under way, frustration because the results vary considerably and are far from definitive. For example, no exhaustive classification of South American languages exists as yet, despite the pioneering efforts of Daniel G. Brinton at the end of last century (Haas, 1977, 35); in the words of Swadesh (1964, 528), "there was never any single bold survey, like that of Powell (in North America)". And we are still awaiting a Handbook of American Indian languages covering adequately the entire New World (Hymes, 1959, 62—3). North America, on the other hand, has a long history of attempts at comprehensive classification: early surveys such as Powell's (1891) assumed that all the Amerindian languages had separate histories and had diverged through borrowing from unrelated neighbors, so that "languages began in pristine isolation and became more similar through absorption from contiguous tribes" (Darnell, 1971a, 88). Such an assumption made for the discovery of 58 distinct linguistic groups; the enormity of the figure provoked Sapir's (1921, 408) comment that "the recognition of 50 to 60 genetically independent 'stocks' north of Mexico alone is tantamount to a historical absurdity". A reaction followed, and Sapir lumped all the North American languages into an astonishing 6 groups: Eskimo-Aleut, Algonquian-Wakashan, Na-Dene, Penutian, Hokan-Siouan and Aztec-Tanoan. The tendency has since fluctuated among authors between splitting and lumping, the former being somewhat more frequent today: "We have not gone back completely to the basic Powellian classification, but we are closer to it now than at any time since 1890" (Haas, 1977, 44). Sapir's reductionist approach went unparalleled in his time, when the structural linguists followers of Bloomfield elicited an increasing number of Amerindian grammars, until in the 1960's Swadesh applied reductionism again — but on a much broader, world-wide scale. Arbitrariness is the main criticism directed at these classifications, for "if as scientists, we take public evidence as a criterion, it is remarkable how much genetic classification has gone without it" (Hymes, 1959, 52); Hymes goes on to quip: "With Sapir, Greenberg and Swadesh, the disturbing question would be, how much is included that is false? With Powell, the disturbing question would be, how much is left out that is true?" (ibid.).

The scientific classification of languages is based on the comparative method: it is a very precise procedure, but "the very fact that it requires so much time and labor has meant that it has been used far

less widely than it should be" (Haas, 1969, 74). Haas considers phonological reconstruction the most accessible — morphological reconstruction, though desirable, is far more difficult to achieve; and in any case accurate linguistic reconstruction does not seem to be possible beyond 10,000 B.P. (Haas, 1969, 51ff, 76, 77). Among linguists, Leonard Bloomfield did much to build the past of North American languages, thereby giving them some historical depth and conjuring up vanished conceptual categories and cultural traits: "He demonstrated in a way that none could doubt or refute that it is possible to reconstruct proto-morphemes by the comparison of related unwritten languages with as much precision and accuracy as had been done in the comparison of European languages with their long written traditions" (Haas, 1977, 39). Rigorous as the method is, it leaves several problems of connection unsolved. The classification presented below is a broad synthesis of Voegelin and Voegelin (1965, 1966) for North America, and Greenberg (1960) for South America; a more detailed list of the North American languages can be found in Landar (1973).

NATIVE AMERICAN LANGUAGES

I American Arctic-Palaeosiberian phylum

- 1 Eskimo-Aleut family (North America and Greenland)
- 2 Chukchi-Kamchatkan family (Siberia)

II Na-Dene phylum

- 1 Athabaskan family
- 2 Tlingit
- 3 Haida

III Macro-Algonquian phylum

- 1 Algonquian family
- 2 Yurok
- 3 Wiyot
- 4 Muskogean family
- 5 Natchez
- 6 Atakapa
- 7 Chitimacha
- 8 Tunica
- 9 Tonkawa

IV Macro-Siouan phylum

- 1 Siouan family
- 2 Catawba
- 3 Iroquoian family
- 4 Caddoan family
- 5 Yuchi

V Hokan phylum

- 1 Yuman family
- 2 Seri
- 3 Pomo family
- 4 Palaihnihan family
- 5 Shastan
- 6 Yanan
- 7 Chimariko
- 8 Washo
- 9 Salinan
- 10 Karok
- 11 Chumashan

- 12 Comecrudan
- 13 Coahuiltecan
- 14 Esselen
- 15 Jicaque
- 16 Tlapanecan
- 17 Tequistlatecan
- 18 Yurumangui (?)

VI Penutian phylum

- 1 Yokuts family
- 2 Maidu family
- 3 Wintun family
- 4 Miwok-Costanoan family
- 5 Klamath-Modoc
- 6 Sahaptin-Nez Perce family
- 7 Cayuse
- 8 Molale
- 9 Coos family
- 10 Yakonan family
- 11 Takelma
- 12 Kalapuya family
- 13 Chinookan family
- 14 Tsimshian
- 15 Zuni
- 16 Mixe-Zoque family
- 17 Mayan family
- 18 Chipaya-Uru family (Bolivia)
- 19 Totonacan family
- 20 Huave

VII Aztec-Tanoan phylum

- 1 Kiowa-Tanoan family
- 2 Uto-Aztecan family

VIII Oto-Manguean phylum

- 1 Manguean family
- 2 Otomian family
- 3 Popolocan family
- 4 Mixtecan family
- 5 Chinantecan family
- 6 Zapotecan family

IX Macro-Chibchan phylum

- 1 Chibchan family
- 2 Paezan

X Andean-Equatorial phylum

- 1 Andean family
- 2 Jibaro-Kandoshi
- 3 Esmeralda
- 4 Cofan
- 5 Yaruro
- 6 Marco-Tucanoan family
- 7 Equatorial family

XI Gê-Pano-Carib phylum

- 1 Macro-Gê family
- 2 Bororo
- 3 Caraja
- 4 Macro-Panoan family
- 5 Nambicuara
- 6 Huarpe
- 7 Macro-Carib family
- 8 Taruma

A few remarks are in order concerning this tentative classification:

(I) the Araucanian languages (Andean family, Andean-Equatorial phylum) are held by Key (1978) to be related to the Tacanan-Panoan languages

(Macro-Panoan family, Gê-Pano-Carib phylum) and, more remotely, to the Fuegian languages;

(II) Haas (1958a) provided evidence of genetic relationship between the Algonquian family and the so-called Gulf languages (Muskogean family, Natchez, Tunica, Chitimacha and Atakapa), and posited a 5 or 6,000 year-old divergence;

(III) Yurok and Wiyot (Macro-Algonquian phylum), two languages of northern California, were classed together as Ritwan family by Dixon and Kroeber in 1913; Sapir's postulated relationship between Algonquian and Ritwan was controversial until demonstrated by Haas (1958b);

(IV) Kutenai, a British Columbia language classed by Sapir into his Algonquian-Wakashan phylum, and Beothuk, a language of Newfoundland Sapir placed in his extended Algonquian family, are now among the "rejects", i.e. those languages that refuse to be put into any grouping greater than the isolated class;

(V) a relationship between Eskimo and Uralic was hypothesized as early as 1576 by Martin Frobisher on the basis of his contacts with Greenland Eskimos, and was considered seriously by some until Swadesh convincingly demonstrated the connection Eskimo-Aleut/Chukotan in 1962 (Krauss, 1973a, 851); it is however interesting to note what Raun *et al.* (1965, 126) have to say about Palaeosiberian languages such as Chukchi: "In internal features of phonology, they are not like American Indian but rather like the adjacent Altaic languages; they are even more like the flanking Chinese languages in East Asia than they are like North Pacific Coast languages in North America". This appears to be a case of areal linguistic diffusion such as will be discussed below.

3. POPULATION MOVEMENTS AND LANGUAGE CONTACTS

3.1. GENETICS VERSUS DIFFUSION

Every language is composed of a genetic core which links it historically with its kin, and of a varying admixture of traits belonging to its neighbors, whether they are related to it or not: the first component is the result of *descent*, the second the product of *interaction* with the socio-cultural environment. The question is, what is the relative contribution of each component in the elaboration of a language? Early in this century the answer to this question began to divide students of Amerindian languages. Franz Boas thought it was too early to try and establish genetic relationships, and that for the time being the most urgent task was to study a vast number of languages as whole, self-contained systems. He was criticized for this by his more impatient students — Sapir and Kroeber in particular — who ignored the fact that "no scholar can be blamed if the results he envisioned could not be accomplished within the compass of his own lifetime" (Haas, 1977, 37). Whereas Sapir and the Bloomfieldian linguists emphasized the *common*

origin of languages through a process of linguistic reconstruction based on the Indo-European model. Boas maintained to his death that similarities could most often be accounted for by *shared history*, i.e. cultural contacts and language borrowings. He posited that many American languages had died and been replaced by the spread of a few linguistic stocks (such as Algonquian, whose advance was continuous in historic times): "at a very early time the diversity of languages among people of the same physical type was much greater than it is now" (Boas, 1920, 368). Swadesh (1964, 555) concurs with this opinion and elaborates on it: "dialects were lost before they had become separate languages and were replaced, probably in the majority of cases by some other dialect of the same language" — as happens in modern nations when one dialect is standardized to the detriment of the others. Boas's and Swadesh's scheme therefore presupposed a great (but unspecified) time-depth, with many aboriginal languages giving way to a limited number of stocks, differentiating among themselves and diffusing about an areal nucleus.

Swadesh, using hindsight to appraise the Boas-Sapir controversy, sees it as a non-issue: "It is clear that diffusion and common origin are not opposites. Instead, the former refers to the process of conveyance and the latter to the sources" (Swadesh, 1951, 4). He goes on to explain (*ibid.*: 7): "The inference is that the sharing of superficial features may reflect single-trait borrowing while the sharing of fundamental features, particularly if a number of them go together, demonstrates common origin". What with the development of sociolinguistics and an increased inclination for holistic studies on the part of linguists, the case for historical borrowing has been given growing consideration over the past twenty years; the current state of the art is aptly summarized by Bright and Haas:

In languages of native America or anywhere else, we cannot successfully explain structural resemblances solely in terms of common genetic origin. Structural diffusion must be recognized as an equally important factor in language history (Bright 1976, 272).

By now we are ready to agree that Boas was right when he perceived the distribution of areal traits as an historical process (...). In fact genetic and areal studies are no longer considered antithetical, but are frequently carried on and discussed side by side (Haas 1977, 44).

The influence of borrowing has even been brought to bear on the core vocabulary, long considered safe from contaminating foreign incursions. For instance Bright (1976, 232), taking an illustration from India, points out that "in Swadesh's 100-word 'non-cultural' vocabulary, Kannada shows 13 items borrowed from Indo-Aryan (...), presumably because of Sanskrit religious associations with such terms as *man*, *sun* and *heart*". Borrowing can be particularly intensive in cases of heavy acculturative process: Ehret (1976, 13) cites East African hunting-gathering groups which borrowed up to 10% of their core vocabulary from the language of Masai pastoralists — a percentage great enough to lead to a severe glottochronological underestimation. Even

numerals and kinship terms are often borrowed. These recent findings make it imperative that any lexicostatistic comparison nowadays heed this warning by Bright (1976, 208):

The use of kinship systems in studying the genetic relationships between languages is full of dangers. On the one hand the near-universality of terms like "papa, mama, tata, nana" may give a false impression of genetic closeness. On the other hand, (...) kinship terms, as well as semantic characteristics of kinship systems, have especially close ties to specific cultures, and are frequently borrowed.

We are a long way indeed from the confidence that formerly characterized reference to, and application of, the concept of core vocabulary.

3.2. LINGUISTIC AREAS

Thus it is that the current trend in American linguistic research is to merge the study of linguistic families with that of linguistic areas: the former deal with reconstruction and classification, the latter with diffusional relationships — both approaches being complementary and amounting to a comprehensive comparative method for historical linguistics. It is now largely recognized (see Sherzer, 1973) that contiguous unrelated languages tend to share certain superficial features which determine a linguistic area for these features. For example, there is in western Europe a zone (France, northern Italy, Germany, the Netherlands, part of Scandinavia, etc.) characterized by a uvular pronunciation of *r*, which diffused from 17th-century France (see Pope, 1934, 156ff, 188). Another instance, in South America this time, is quoted by A. Dall' Igna Rodriguez in Lyon (1974, 57): "Língua Geral or Nheengatú, (...) having become a lingua franca and being spread with the occupation of Amazonia since the 17th century, not only is marked in its structure by the contacts, but left its own marks on a great number of other indigenous languages along almost the entire course of the Amazon and its affluents". A third example concerns North America (Darnell and Sherzer, 1971, 27): "The south-eastern languages share with neighboring Siouan languages many grammatical traits, although they exhibit regular sound correspondences with the Algonquian languages. The relative role of genetic and areal factors in explanation still remains unclear".

Boas (1920) was the first to recognize and circumscribe linguistic areas in North America; he distinguished several clusters of shared features according to the part of the grammar that was affected:

(I) phonological areas: Northwest Coast (similar *k*-sounds and laterals), central and eastern Plains (nasalization);

(II) morphological areas: Great Plains and Eastern Woodlands (reduplication), Kutenai-Shoshone-Sioux (instrumental), Athabascan-Tlingit-Kwakiutl-Sioux (use of different verb stems according to shape of objects predicated).

To illustrate that linguistic diffusion was powerful enough to overcome serious obstacles to cultural transmission, Boas (1920, 372) cites the south-

ern Bantu "who have adopted the clicks of the Bushmen and Hottentots, notwithstanding the hostility that prevails between these groups". It is by no means surprising that languages influence each other, though to a lesser degree than most other components of culture: any concentration of different populations calls for a minimum of interaction — be it on friendly or hostile terms —, and bi- or multilingualism is the rule in such regions, whether they be situated in America, Europe, Australia (see for instance BurrIDGE, 1973, 134), or wherever. Language contact thus triggers off phenomena of interference at all grammatical levels, which facilitate the assimilation of foreign traits into the linguistic repertoire of the area (see Douaud, 1980 for a concrete example of such a convergence). Some types of diffusion may be insidious and difficult to detect: Swadesh (1948), for instance, relates how Mohican — which did not become extinct with Fenimore Cooper but survived into the 20th century — had its vocabulary collected in 1938 and was shown to contain several Dutch words, thereby reflecting a period of contact with the Dutch of New York State three centuries before.

3.3. POPULATION MOVEMENTS

According to Rutter (1980), the Mackenzie corridor was probably closed during Early Wisconsin (between 100–120,000 and 50–70,000 B.P.), but open during Middle Wisconsin and to some degree during Late Wisconsin (between 25,000 and 10,000 B.P.). This means that if, as it is conjectured, man was at Old Crow (Yukon) by 80,000 B.P. (Morlan 1980, 22), it was as part of a population which remained cut off from the south (whether inhabited or not) for some 50,000 years. Another obstacle to a more extensive southward migration was the isthmus of Panama with its jungle; here, however, opinions differ: the isthmus may have been more arid in Pleistocene times, or else flanked by broader beaches providing a convenient migration route. All the anthropological evidence points to a complex pattern of migrations and counter-migrations: small-scale migrations of Arctic peoples in both directions across the Bering Strait were common in historic times (Wiley 1966, 449); a return movement of Thule people to northern Alaska within the past few centuries has been attested by archeological evidence (H. B. Collins, comment on Swadesh 1954, 365); the Algonquians followed the retreating glaciers and moved northward as early Athabascans moved toward them from the Northwest (Krantz 1976, 20); and the Aztec-Tanoan linguistic phylum indicates a complex movement of peoples into Mexico and California (Price 1978, 23). This general pattern of restlessness makes it difficult to concur with Krantz's (1976, 6) statement that the peopling of North America "must have been a single event and not a series of waves of immigration". Krantz's main argument for his theory is that the invasion and decimation of hunter-gatherers by other hunter-gatherers must be a rare event, as neither group has much time to devote to warfare on a sustained basis; I suggest,

however, that hunter-gatherers do not necessarily need to massacre one another in order to occupy a territory: they can exploit different niches and live in mutual tolerance, perhaps venting their presumed hostility through sporadic bouts of guerrilla warfare — a seemingly prevalent pattern in non-agricultural societies (see Harris 1975, 260ff). Nevertheless I agree with Krantz (*ibid.*, 7) that technological superiority may sometimes have triggered off more drastic demographic changes during American prehistory, in the form of absorption or decimation.

Linguistically, the pattern which emerges is one of several waves of immigration over Bering Strait, and of migrations and counter-migrations on both continents, in the course of which many languages may have disappeared, assimilated by more powerful rivals. When populations became more stable, there was a renewal of linguistic differentiation: "Among the nomadic hunters and gatherers and tropical-forest villages, the small band or village was generally independent, and presumably it was somewhat distinct in dialect or culture from its neighbors" (Steward and Faron 1959, 17). Drastic changes in environmental conditions must also be reckoned with. Krantz (1976), for instance, posits two (probably partial) depopulations in prehistoric North America, corresponding to two periods of desiccation (at 6,000 and 4 or 4,500 B.P. respectively): the first one affected northern Mexico, California and the northern Plains, the second one Montana and central California. Such events must have provoked a considerable redistribution of languages when the areas affected were reoccupied. More settled communities too may have been subject to frequent population movements and inclined to practice village fission and fusion as the Yanomamö have done to this day (see Chagnon 1968, Spielman *et al.* 1974) — thereby blurring the linguistic relationships obtaining amongst themselves and between them and their neighbors.

Dyen (1956, 625) adopts Sapir's principle that "determinable positive migrations are from complex areas to uniform areas", and gives as an example the diversity of dialects existing in Britain, Spain and Portugal (the donor areas) as opposed to the comparative uniformity obtaining in North America, Australia, New Zealand and South America (the recipient areas). The most complex linguistic zones of the Americas are California and central South America: such areas may well be the centers of the most recent linguistic diffusions of any magnitude, overlaying an unknown substratum of earlier movements. In pre-Columbian times California owed its dense population to an abundance of acorns; the Northwest Coast, populated to a lesser degree, attracted settlers by its fishing opportunities: in these two areas of multifarious contacts multilingualism was the rule (Bright 1976, 234), then demographic congestion sent dialects radiating afar to follow their own course of linguistic differentiation. At the other extreme, the Plains were populated late by peoples coming from centers of greater complexity; this population, owing to the very nature of its culture, was made up of isolated groups which were in infrequent contact. As a result, there was so little linguistic dif-

fusion on the Plains that "a manual sign language developed, enabling individuals of diverse tongues to make themselves understood to one another" (Bright 1976, 235). Between the two extreme cases of the Plains and of the Pacific Coast lay countless patterns of diffusion, fusion, absorption, extinction, etc.: such was the diversity of language and population dynamics in the Americas.

3.4. THE PEOPLING OF THE AMERICAS

The foregoing presentation leaves us with two theoretical models: one of wave migration, the other of expansion of hunting territory. The wave migration model implies continuous movements eastwards, with whole populations leaving Asia and crossing Beringia; it is difficult to put forward a cause for such mass movements, but if they did happen we should find reflections of Amerindian language phyla in East Asia — which we do not, except in the case of the latest (Eskaleut) arrival. The second model (expansion of hunting territory) argues that only a very few population movements occurred in Late Glacial or Postglacial times. Within this framework a single-wave migration model, adopted by Greenberg (1960), has all the languages of the Americas — except Na-Dene and Eskaleut — belong to a single phylum; whether this hypothesis is correct or not, we can indeed assume that hunters in search of megafauna slowly expanded their territory and infiltrated Beringia between 28 and 10,000 B.P., finding on their way older settlements speaking unintelligible languages belonging to cultures at various stages of technological development; the newcomers absorbed them as they spread throughout the Americas and imposed their distinctive Mongoloid phenotype on the overall population.

If such was the case, linguistic families from Asian phyla became superimposed on a substratum of undetermined Preglacial or Glacial languages: some of the former disappeared, others supplanted the aboriginal languages — first perhaps borrowing from them, then evolving on their own or affected by contacts with neighboring languages, whether aboriginal or immigrant. The aboriginal languages belonged to archaic, pre-Mongoloid populations thinly scattered over the Americas, but in a greater concentration perhaps in the unglaciated parts of Alaska and the Yukon, which acted as refugia (Morlan 1978, *passim*) and have yielded evidence of occupation up to 80,000 B.P. at Old Crow. Three distinct phases could then be distinguished: an early wave (50,000–40,000 B.P. or before), carrying possibly non-Eastern Asiatic language phyla about which we cannot hope to know anything; a second wave (28–10,000 B.P.), carrying languages that we can hope to trace back to Asia; and finally postglacial arrivals by sea (Eskaleut), which are clearly connected with Asia linguistically.

If we accept the possibility of a non-Mongoloid substratum from the indecisive cranial evidence available, these three waves can be seen as representing a phenotypic continuum: first, "early waves of immigration being non-Mongoloid in racial back-

ground" (E. A. Hooton, in Willey 1966, 13); then the bulk of the ancestors of present-day Indians; and lastly the Eskimo-Aleuts, the most Mongoloid of all. As the immigration pattern became more and more Mongoloid, a broad morphological type came to prevail regardless of phenotypic adjustments to environmental conditions — so that "it is safe to say that no population of comparable size has remained so uniform after expanding, in whatever time has been involved, over such a large land area" (Stewart 1960, 262). Irregularities in extant blood groups and past or extant cranial morphology can thus be due either to random genetic drift or to a vestigial non-Mongoloid substratum; Stewart (*ibid.*), however, notes the uniformity of Amerindian blood groups, limited for the most part to O, M, and Rh+, the Eskimos and Athabascans being slightly marginal with a higher frequency of A. Recently Spuhler (1979: 176) has noted that in his North American sample the correlation between genetic and cultural distance is 58.5%, and that between genetic and linguistic distance is 64.7%; even though this observation confirms the relevance of linguistic analysis to American archeology, we are faced with the fact that biology, culture, and language are far from being perfect indicators of kinship, even in combination, as they all depend on the same broad premises: common ancestry, contact, convergence, divergence, and a mixture of all four.

CONCLUSION

When Sapir boldly compared Na-Dene to Sino-Tibetan in the 1920's, few took him seriously (Darnell 1971b, 251); now firm connections have been established between Arctic languages on both sides of Bering Strait, and scholars have been looking for further connections with the Euro-Asiatic continent. But in order to test fully all the hypotheses concerning the origin of native American languages, Americanist linguists should work in close contact with Pacific and Asian linguists and create a network of research parallel to the emerging circum-Pacific archeology. In spite of their exceedingly complex development, Amerindian cultures are still covered by broad elements of unity such as:

- (I) physical types;
- (II) world view and ethos;
- (III) sociolinguistic features such as differences in men's and women's speech, which can be found in many societies of America and of Asia, e.g. in Chukchi and Thai (Haas 1944, 231);
- (IV) paralinguistic phenomena: see for instance Lowie (1959, 108–109), who mentions a pointing of the lips as a common Indian way of pointing to somebody and wonders if it could be a pan-American, even Mongoloid trait.

If linguistic reconstruction has been successful in the Americas, on the other hand the reliability of language as a dating agent is more ambiguous. Haas (1969: 73) has noted that "the chief importance of lexicostatistics is that it was hoped that it could be used as a method of making a statistical determina-

tion of the degree of distance between languages and that the results could then be stated chronologically". This goal has been partly met: glottochronology is a useful technique of relative dating and an interesting support of archeological absolute dating. However, the events of early American prehistory quickly run off the glottochronological counter, as it is impossible to operate beyond 15 or 20,000 years. Linguists cannot contribute to the dating of early American man, but they have no objection whatsoever to raise concerning a very early origin.

Amerindian linguistics, by giving historicity to unwritten languages, has furthered the accomplishments of Indo-European comparative linguistics; by its methods and findings it has fully contributed toward the ultimate goal of historical linguistics as stated by Hymes (1960, 31):

The great variety of the world's languages must reduce ultimately to a small number of distant, far-flung genetic relationships. In gradual penetration of these reaches, we proceed by stages of hypothesis, proof, and establishment. Hypotheses provide guides for future research; proof shows that no other explanation is tenable for a body of resemblances; establishment unravels the details of relationship as fully as possible.

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