The Cambridge Handbook of Linguistic Anthropology

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27

Language and archaeology

State of the art

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27.1 Introduction: Why link two such different disciplines?

Archaeology is the reconstruction of past lifeways through the excavation and analysis of material remains, whereas linguistics is the description of human language and interpretation of patterns that can be observed. Sociocultural anthropologists may well wonder what the two disciplines have in common and their relevance to sociocultural anthropology. Archaeology can provide time-depth for the synchronic observations of sociocultural anthropology and thus add analytic richness to descriptions of social change. For example, the transition from foraging to agriculture must have occurred many times in different regions (Barker 2006). Yet a change with such momentous economic and social implications cannot now be directly observed, so archaeology must provide a window on this process. However, the development and spread of agriculture also had major consequences for the linguistic map of the world. Combining archaeological results with linguistic reconstruction and a nuanced understanding of social process derived from ethnography allows us to evolve a richer model of prehistory.

Linguistics has historically been linked to hypotheses concerning prehistory in three main ways:

(a) the correlation of linguistic reconstructions from historical linguistics with the findings of archaeology
(b) speculations concerning the origin of human language and palaeoanthropology
(c) palaeosociolinguistics, the use of language evolution models from the near present to explain both language patterning and archaeological results.

Of these, the first is the most well-established, and has practitioners in almost all the major language phyla of the world. Speculations on the

origin of language and whether this has osteological correlates to be found in the fossil record has a long and somewhat disreputable history. Palaeosociolinguistics is a developing area, where there is so far very limited consensus, but intriguing vistas are opening up. Ethnography plays an important role in modeling credible sociological scenarios; if we hypothesize a sociolinguistic process in the past, we should be able to point to its analog in the present.

This chapter[1] discusses the evolution of the ideas that connect linguistics with the modeling of prehistory and focuses on particular topics to illustrate the practical working out of their interactions. It begins with some of the contrasting opinions about the relationships between linguistics and archaeology, and in particular the negative views of some archaeologists. It then explores some of the main topics that have been the subject of debate, in particular claims about numerical classification of languages and the processes of language diversification. As examples of topics which should be of particular interest to sociocultural anthropologists, it considers the genesis of writing – for which there is considerable epigraphic evidence but which can also be documented ethnographically – and the evolution of gender registers, something clearly present in Sumerian but also the subject of contemporary descriptions. The final section takes on one of the most controversial issues, the proposed synthesis of linguistics, archaeology, and DNA evidence to generate new hypotheses about prehistory.

27.2 Linguistics and archaeology

The relationship between linguistics and archaeology reflects both the internal dynamic of the disciplines themselves and external political and social trends. Many archaeologists have asserted that archaeology and linguistics do not share much common ground; some for reasons internal to archaeology, while others may be traced to the sometimes startling misuse of the conjunction of disciplines by earlier scholars. Linguistics is in many ways more internally diverse than archaeology; a much greater proportion of its practitioners are engaged in high theory and fieldwork is often perceived as a low-prestige activity. The great majority of linguists are engaged in an enterprise that really does have no relevance for archaeology, whilst the reverse is not true. However, among the subset of linguists interested in historical topics, few have not at least glanced at archaeology, in the light of its potential to provide interpretative tools for their findings.

Historical linguistics suggests that we can plot the development of language families, and reconstruct particular lexical items of social and economic significance, such as hunting gear and food crops, but also social organization. It therefore seems that we should be able to map these

against archaeological findings. The argument from the linguists' point of view is simply put: languages were spoken by real people in the past and indeed form striking patterns in the present. This must have been the consequence of distinct strategies of movement and diversification of peoples and somehow reflect their changing social and economic conditions. The first language phylum where this type of speculation was exercised was Indo-European, with the work of Adolphe Pictet (1859–63), who first introduced the concept of *linguistic paleontology*, the reconstruction of the social and material through linguistic reconstruction. This was picked up and expanded by the semiotician Émile Benveniste (1973) in his seminal work on Indo-European language and society. Similar observations from an entirely different region of the world are Crowley's (1987: 268 ff.) reconstruction of the concept of the meeting house in Polynesian and its cultural relatives in Oceanic, or Lynch and Fakamuria's (1994) study of moieties in Vanuatu.

Although these approaches have been highly influential elsewhere in the world, they have been treated with skepticism by many archaeologists. There are two distinct reasons for this: either because it is evident what language was spoken by the people who occupied the sites they excavate, or because they have actively rejected linguistics. The rejection of the opportunity to identify speech-communities is more interesting but also more problematic, as it seems to arise from a barely articulated background ideology. Glyn Daniel, for example, wrote:

> We must alas, for the most part, keep the builders and bearers of our prehistoric cultures speechless and physically neutral. This may seem to you an unsatisfying conclusion. And so it is but then much of our prehistory is unsatisfying and difficult, tantalisingly meagre and sketchy. We can appreciate this and accept the limitations of prehistory along with its excitements. (Daniel 1962: 114–15)

The unspoken message is undoubtedly a fear that the precision and empirical content of archaeology will be contaminated by speculation and unhealthy racial hypotheses. But this battle has been lost; if some of the speculations have touched on wilder shores, this is no reason to reject the whole spectrum of methods for reconstructing a richer past.

27.3 Historical linguistics and models of prehistory

Historical linguistics, like many another discipline, has a contested past. Some of its early practitioners developed models of world prehistory by arguing for links between geographically remote languages in the context of Biblical references, such as the location of the lost tribes of Israel (Wauchope 1962). This type of scholarship is often broadly referred to as Voltairean linguistics, from a famous apothegm attributed by Max Müller

(1871: 1.238) to Voltaire: "Etymology is a science in which the vowels count for nothing and the consonants for very little."[2]

Historical linguistics in the modern sense began as a comparison of written languages and textbooks; Sir William Jones' famous lecture in 1786 is typically cited as demonstrating the links between Sanskrit and the classical languages of Europe.[3] Precursors to historical linguistics existed, both among the Sanskrit grammarians and in the works of rabbinical scholars. Yehuda Ibn Quraysh, who lived in Fez, Morocco, in the tenth century, was the first to compare the phonology and morphology of Hebrew, Aramaic, and Arabic in his book *'Risāla'* (Téné 1980). However, Van Driem (2001: 1039 ff.) has shown that the conventional accounts (Bonfante 1953; Muller 1986) of the predecessors of Jones, notably Marcus van Boxhorn, are highly inaccurate. Boxhorn's (1647) published study of 'Scythian' (comparative Indo-European) represents the first discussion of the methodological issues in assigning languages to genetic groups. He observed that to use lexical cognates, loanwords must be first eliminated and he placed great emphasis on common morphological systems and on irregularity, *anomalien*, as an indicator of relationship. Even the expression *ex eadem origine* 'from a common source' first appears in a book by Johann Elichmann (1640: iii) – who served as a doctor at the Persian court – which uses morphology to relate European languages to Indo-Iranian. The concept of reconstructing an Indo-European proto-language appears as early as 1713 in the works of the English divine William Wotton:

> My argument does not depend on the difference of Words, but upon the Difference of Grammar between any two languages; from whence it proceeds, that when any Words are derived from one Language into another, the derived Words are then turned and changed according to the particular Genius of the Language into which they are transplanted. [. . .] I can easily suppose that they might both be derived from one common Mother, which is, and perhaps has for many Ages been entirely lost. (Wotton 1730: 57)

Wotton showed that Icelandic ("Teutonic"), the Romance languages, and Greek were related, which is certainly as convincing a demonstration of Indo-European affinities as Jones' links between classical languages and Sanskrit.

Although earlier scholars worked principally with written languages, historical linguistics today is used principally to illuminate the evolution of unwritten or recently written languages, and it is this which has been of greatest interest to archaeologists. The recognition of the major language families is often surprisingly early. The outlines of the Austronesian family were first recognized in the early eighteenth century by the Dutch scholar Adriaan van Reeland, who compared Malay, Malagasy, and Polynesian (Relandus 1708). A contemporary of Jones, Forster, also had a clear concept of proto-etyma:

> I am . . . inclined to suppose, that all these dialects preserve several words of a more ancient language, . . . which gradually divided into many languages, now remarkably different. The words therefore of the language of the South Seas isles, which are similar to others in the Malay tongue, prove clearly in my opinion, that the Eastern South Sea Islands were originally peopled from the Indian, or Asiatic Northern isles; and that those lying more to the Westward, received their first inhabitants from the neighbourhood of New Guinea.
>
> (Forster 1778:190)

Another Austronesianist, Bishop Codrington, in a surprisingly satirical comment, may have been the first to disentangle race from linguistic classification:

> The Melanesian people have the misfortune to be black, to be much darker, at least, than either Malays or Polynesians; and because they are black it is presumed that their original language cannot be of the same family with that spoken by their brown neighbours; that where their language has a general resemblance to that of their neighbours they must have cast off their own and taken another in the lump, and that where the resemblance is not conspicuously apparent they must have borrowed words and expressions in commercial or other intercourse.
>
> (Codrington 1885: 12)

Remarkably, the earliest sketch of an entirely unwritten language phylum appears to be Arawakan, a language phylum spoken in the pre-Columbian Caribbean, and stretching into today's southeastern Colombia and central Brazil, which dates from 1782 (Gilij 1780–84). Gilij's insights were remarkable for their time: he recognized sound-correspondences as a key tool in classifying languages, focused on the importance of word order patterns, and discussed the diffusion of loanwords.

Nearly a century later, Pictet (1859–63) developed the notion of linguistic paleontology, the idea that prehistory can be reconstructed from evidence drawn from modern spoken languages and the transformation of individual words. Lexicostatistics, the counting of cognate words between two or more languages in a standardized list, also was first sketched at around the same time. Dumont d'Urville (1834) compared a number of Oceanic (Austronesian) languages and proposed a method for calculating a coefficient of their relationship. When he extended his comparison to a sample of Amerindian languages he correctly concluded that they were not related to Oceanic. Lexicostatistics is associated in more modern times with the work of Morris Swadesh, and was a key tool in the armoury of historical linguists in the 1960s and 1970s, before some of its methodological problems began to surface.

A sister discipline to lexicostatistics is glottochronology, the notion that if the differentiation between languages can be assigned numerical status then it might be regularly related to the time-depth of the split between

languages (Swadesh 1952). Latham (1850) first sketched the possibility of assigning a precise date to the divergence of two languages through the application of a mathematical algorithm. The attractive aspect of both lexicostatistics and glottochronology is quantification; they seem to represent a scientific approach to the dating and genetic classification of languages.

Both lexicostatistics and glottochronology have been given a new lease of life with modern mathematical methods (McMahon and McMahon 2005). Adapting statistical techniques from biology, a series of papers has proposed new models for language classification and dating and pattern of splits. Russell Gray and colleagues, for example, have published several versions of the Austronesian "tree" based on these methods, which are strongly denied the label lexicostatistics, although they make use of the cognacy judgments of conventional historical linguists (e.g., Gray *et al.* 2009; Greenhill *et al.* 2010). Gray and Atkinson (2003) and Atkinson and Gray (2006) have published a re-evaluation of the dating and splits of Indo-European, and Holden and Gray (2006) a "tree" of Bantu. More boldly, Atkinson (2011) has claimed that high phoneme inventories in Africa and relatively low inventories in Oceania show that human language gradually simplified as humans moved away from Africa.

Linguists have diametrically opposed views about this type of analysis, either viewing it as an important advance on previous techniques, or as problematic for its failure to take into account recent insights into the nature of language change and pidginization processes. A key assumption is thus uniformitarianism, that linguistic change takes place according to predictable rates. The whole enterprise of lexicostatistics and glottochronology depends on the underlying assumption that languages change at a standard rate if only the right algorithm can be uncovered. It may seem obvious that past societies exhibited complex sociolinguistic patterns in much the same way as those in the present, but historical linguistics has often taken a uniformitarian perspective. Paradoxically, the Austronesianist Robert Blust, whose data has been used for tree-like modeling of Austronesian (Greenhill *et al.* 2010), has been one of those to study differential erosion of core vocabulary (Blust 1999, 2009a). He found strikingly different rates of loss of core Austronesian lexemes over time, for reasons that remain unexplained. The view taken here is that uniformitarianism is not a realistic assumption about language change in the real world and we would be better modeling past societies from what we know of the present. Certainly the language networks that are increasingly common in historical accounts (cf. for example critique of hierarchical trees in Austronesian in Donohue and Denham 2010) find no place in this more dichotomous view of language. In addition, these models face the thorny issue of testability, the difficulty of showing what empirical result would falsify their findings. Archaeological calibration of claims

about dating has yet to be undertaken, so the relevance for conventional models of prehistory cannot be fully assessed.

27.4 Dating and linguistic diversity

The issue of linguistic diversity and absolute dating is thrown into sharp focus by the controversies over the settlement of the New World, addressed by Nichols (1992). The Americas represent a region of exceptional linguistic diversity and the earliest classifications suggested there were at least fifty-eight distinct phyla, which would make it one of the most diverse regions of the world (cf. Campbell 1997 for an overview of scholarship and dates). Archaeologists, however, have generally considered the occupation of the Americas as relatively recent, with most dates focusing on the so-called "Clovis" horizon, *ca*. 12,500 BP (e.g., Lynch 1990). Even the revised dates for Monte Verde in Chile only go back to 14,600 BP (Dillehay 1997). This creates a major disconnect, since few linguists would accept such differentiation could evolve in so short a time, especially in the light of what we know about language diversification in Australia and Melanesia (Blench 2012).

Throughout most of the twentieth century, linguists have been unwilling to reduce significantly the numbers of distinct phyla of Amerindian languages, despite a major expansion in available data, and so have been rather skeptical of the archaeological position. However, Joseph Greenberg (1987), then known principally for his work in Africa, put forward a radical reclassification of the linguistic situation in the Americas which proposed to reduce the languages to just three distinct phyla. The largest of these, Amerind, would roll up most of the languages of North and South America. Amerind has been widely adopted by both archaeologists and geneticists, since it neatly solves the problem of the contradiction between language and settlement dates (e.g., Renfrew 1992). Unfortunately, there seems to be little evidence that it is even partly true. Despite the predictions of many Africanists, the years since the publication of *Language in the Americas* have not seen a single major scholar adopt Greenberg's ideas and recent large reference books now uniformly reject it (e.g., Campbell 1997; Mithun 1999; Dixon and Aikhenvald 1999). Amerind now lives on as a fossil conception outside the professional discipline of native American linguistics.

Neatness and truth are not necessarily good partners and in the case of the Americas there are several possible scenarios to explain the situation:

(a) Archaeological dates are significantly older than those currently accepted.
(b) Classifications of the languages of the New World are in error.
(c) New World languages diversify at much greater rates than elsewhere in the world.

Table 27.1 Four processes of language dispersal and diversification (after Renfrew 1992:457)

Category	Example
a) Initial colonisation	Early forager dispersals, e.g., Khoisan
b) Agricultural dispersal	Migratory movement of farmers, e.g., Austronesian
c) Northern climate-sensitive adjustments	Migrations of polar foragers, e.g., Eskimo-Aleut
d) Elite dominance	Military expansion and domination, e.g., Indo-Iranian

(d) Multiple migrations to the Americas brought in "pre-diversified" languages.

Of these, (c) is the least likely; the resolution will probably be found with partial elements from the other three scenarios. However, the situation illustrates difficulties of reconciling archaeological and linguistic hypotheses, even when the canvas is large and the datasets dense.

27.5 Language diversification and shift

One of the major debates in the interpretation of the pattern of world language phyla is the underlying process; cf. chapters in Part II of this handbook. In other words, what type of social or technological engine drove their dispersal and can we account for this archaeologically? The first author to establish the terms of the debate was Renfrew (1987, 1992) who postulated four processes. These are listed in Table 27.1.

These hypotheses relied strongly on the account of world language phyla propounded by Ruhlen (1987) and an in-press version of Cavalli-Sforza *et al.* (1994) for the genetics. Although these sources are no longer widely accepted, the categories have been immensely influential among archaeologists. The rebranding of migration as *demic diffusion* and the link with agriculture has been debated for many linguistic families (see the papers in Bellwood and Renfrew 2002; Enfield 2011; Blench 2011, 2012).

The notion of demic diffusion is the unspoken subtext behind the neatly branching trees used to characterize the structure of many language phyla. In some cases, such as the expansion of Polynesian, Bantu, or Turkic peoples, it would be hard to deny a link with physical movement of populations. But language shift is one of the key processes of cultural change and indeed bound up with prestige institutions and material culture. Any convincing model of the relation between language and prehistory must take such processes into account (Ehret 1988). Bulbeck (2011) provides a complex account of the disconnect between the physical anthropology of the Orang Asli of the Malay Peninsula, their phenotypic diversity, and recently adopted Austro-Asiatic languages.

Quite different approaches to language diversification are now coming from cognitive sciences. Levinson and Gray (2012) claim that the tools which have revolutionized evolutionary biology can also be applied to language diversification. The basis of the argument appears to be that data-mining can uncover historical processes invisible to normal linguistic and archaeological investigation. Since they give no concrete examples, this is more a program than a demonstration of these new techniques.

Despite the emphasis on "neat" trees and movement of populations, ethnography points strongly to the predominance of language shift in migration. All over the world, ethnic minorities are under extreme pressure to yield their own speech to a national language and in many cases this is occurring (Blench 2007; Rice, this volume, Chapter 11). Australian and American indigenous minorities were subject to programs of forced assimilation for long periods, accounting for the precarious state of their languages. While these programs have been halted, apologies made, and the watchword is language revitalization, continuing voluntary migration to these states results in migrants rapidly losing their language. In a highly nationalist state such as India, right-wing Hindu parties have been pressing for the imposition of Hindi in a multilingual state such as Arunachal Pradesh. To this end, they have been marshaling technology, notably satellite television, to achieve acceptance. But technology can also be adapted by its intended targets; minorities such as the Koro and the Hruso are also seeking to preserve their languages in the face of this attempt at cultural bleaching.

Language shift can be seen and documented in the present, which makes it easier to model processes in the past. The consequences for material culture of interest to archaeologists can be highly variable. In many developed economies, for minority languages such as Breton, Scots Gaelic, or the Amerindian languages of North America, the shift in material culture has already occurred. Language loss trails behind it, perhaps artificially retarded by literacy programs or well-intentioned linguists. However, in the developing world, speaking a minority language is often linked to poverty and social exclusion, for example in Indonesia or Mexico. The spread of a dominant language by agencies of the state in such countries reflects as much the impulse towards political control as the inexorable tide of globalization, and consequently there may be no material change in the state of populations who lose their language, as in many Latin American countries.

To relate this to archaeological interpretation, one of the long-standing puzzles of Australian prehistory is the distribution of Pama-Nyungan languages. Although the diversity of language groupings of Australia indicates long periods of separation, it is confined to a small region of Northern Australia (Koch 1997). The rest of the continent is dominated by a single family, Pama-Nyungan, the languages of which are sufficiently close as to be almost inter-intelligible (cf. Dixon 2002 for a skeptical account and Evans 2005 for a detailed rebuttal). Given the early settlement dates for

Australia (O'Connor and Chappell 2003), Pama-Nyungan speakers must have persuaded the resident groups to switch languages. Since there is no evidence that this was achieved by violence, we have to assume that either technological superiority or prestige social institutions were the keys to this process. McConvell and Evans (1998) argue that we can see evidence for both. Pama-Nyungan speakers show an innovative type of social organization, linguistic exogamy linked to possession of song repertoires, that may well be the prestige institution that impressed the in situ populations. At the same time, some 4–5,000 years BP, a new type of microlithic technology begins to appear throughout the region, backed blades, whose distribution corresponds closely with that of Pama-Nyungan languages. The combination of tools and songs seems to have been irresistible and the languages gradually spread through most of the continent, assimilating those already present.

27.6 Palaeosociolinguistics

It may seem obvious that past societies exhibited complex sociolinguistic patterns in much the same way as those in the present. *Palaeosociolinguistics* is where documentation can be used to reconstruct the sociological elements in language use and change. The challenge of palaeosociolinguistics is to detect events that are beyond the reach of oral tradition *and* to link them with the archaeological record.

One area where this is of particular interest is in the area of language leveling, where the spread of a major language, usually among speech-forms which are already related, causes lexical and grammatical convergence and reduced typological diversity. Nichols (1992) has been a highly influential text in this area, arguing that the striking contrasts in phyletic diversity between regions, notably between Eurasia and the New World, can be explained by concepts of "spread zones" and "residual zones." Her argument is that repeated spreads of migration in the Old World have eliminated typological diversity and hence have resulted in language leveling. Nichols did not attempt to link her chronologies with absolute dating from archaeology, which continues to create problems for interpreting her claims.

Language leveling can often be the consequence of centralized political authority. For example, the spread of Khalkh Mongol following the military expansion of the Mongols in the thirteenth century has eliminated much of the diversity of Mongolic, leaving divergent dialects at the periphery (Janhunen 2003). The material correlates of this expansion are still very much present in Mongolia, in styles of livestock management, dress, music, and oral literature. The prior relatedness of the Mongolic languages means that unless there is reason to suspect this process on historical grounds its existence has to be inferred from reduced diversity, where this can be measured in comparable situations.

Island Southeast Asia (ISEA) is another region where language leveling can be hypothesized. Virtually all of ISEA and the Pacific is populated by speakers of Austronesian languages as far as New Caledonia and New Zealand, bypassing much of Melanesia. In principle, language diversity can be very great: Vanuatu has more than a hundred indigenous languages in a land area of 12,200 km^2. Blust (2005, 2009b) has observed that the lexical diversity of languages in both the Philippines and Borneo is too low, if they have indeed been diversifying in *situ* for more than 3,500 years. To account for this situation, Blust proposes that a leveling process took place in the unspecified past. In the case of the Philippines, he calls this the "Macro-Philippines" hypothesis and for Borneo the "Greater North Borneo" subgroup. As this process faltered, languages would again begin to diversify, but the leveling event would be visible in subsequent analysis. In another case, the island of Nias off the west coast of Sumatra shows astonishing genetic and linguistic uniformity, despite settlement more than 12,000 years ago (Forestier *et al.* 2005). This can be attributed to a settlement and language-leveling event as little as 600 years ago, obliquely recorded in the *hoho* or historical chants (Kennerknecht *et al.* in press). To this list can certainly be added Malagasy, which is again very similar across the island, despite a time-depth for its occupation of at least 1,500 years (Dewar 1994).

In the case of early language leveling in the Austronesian world, one probable factor is the spread of metalworking in the region. We know that the technology of iron-smelting was introduced around 100 BC and spread rapidly in ISEA. This would have given early adopters a considerable technological advantage both in warfare and in cutting back the heavy vegetation that characterizes most islands, making more room for agriculture. The likely consequence was a sudden increase in the population of particular ethnolinguistic groups, leading the leveling events identified subsequently by linguists.

Language leveling may be the result of a wide variety of sociolinguistic processes, but the result is the same, the gradual elimination of diversity following the spread from some central source of a persuasive and characteristic lexicon. Java, Sumatra, and the Malay Peninsula have also reduced language diversity in historical times through better-documented political processes, and comparable changes today with Malay, Indonesian, and Tagalog are being induced by the nation state, education, and television. Such processes need not necessarily involve a top-down imposition of a language policy; they can be political or cultural.

27.7 Modeling creolization

As with language shift, processes of language change observable in the present clearly took place in the past, although they muddy the waters of

conventional language diversification models. One important area is pidginization and the related creolization (Thomason and Kaufman 1988). The conventional definition of a pidgin is a simplified language that develops for speakers with different languages to communicate with each other, and a creole arises when such a speech-form becomes the mother-tongue of a particular group. The boundary between these two is not always clear; presumably in transitional households, the parents speak a pidgin and the children a creole. Moreover, the elevation of Pidgin Englishes to codified speech-forms in various parts of the world (e.g., Bislama in Vanuatu, or Pidgin in Cameroun) means that what linguists would call creoles are known as Pidgin.

Earlier writing on creolization tended to focus on creoles that evolved between European (i.e., colonial) languages and indigenous languages, often through conquest or slavery. But as perceptions have sharpened, it is increasingly clear that these are broad processes affecting human language at all times and places. We know about these because they have occurred in the recent, observable past. But there is every reason to think that various types of language mixing also happened prior to modern documentation. It used to be considered that "mixed" languages did not occur, that every language was essentially or underlyingly one language and was relexified from another. Thomason and Kaufman (1988:1) counterpose Max Muller's categorical assertion that there are no mixed languages with Hugo Schuchardt's claim that there are no "unmixed" languages.[4] Linguists' resistance to the idea of mixed languages has rather broken down with increasing evidence that such languages do exist (Bakker and Mous 1994). Bechhaus-Gerst (1996) documented the evolution of Nile Nubian (where written sources exist) and was able to illustrate patterns of borrowing and language mixing over time in a way that is exceptional for Africa. More recent African examples are Ma'a in Tanzania (Mous 2004) and Ilwana in Kenya (Nurse 2000).

It was also generally thought that pidgins occurred as a result of the interaction of two languages, but more complex scenarios are clearly possible. An example of a problematic language with a complex history is Laal. Laal is spoken by several hundred fishermen in Central Chad (Boyeldieu 1977). Its vocabulary and morphology seem to be partly drawn from Chadic (i.e., Afro-asiatic), partly from Adamawa (i.e., Niger-Congo) and partly from an unknown source, perhaps its original phylum, a now-vanished Central African grouping. For this to develop, Laal speakers must have been in situations of intense bilingualism with different neighbors over a long period, without being in a relationship where cultural dominance would cause them to lose their language. Similarly, this does not suggest pidginization, since Laal speakers have a very full ethnoscientific vocabulary, as would be expected from a remote inland fishing community.

Another way of regarding the multiplicity of changes that can occur is from the perspective of language restructuring. Many languages which

have never been regarded as creoles have nonetheless undergone radical changes under the influence of bilingualism. Dimmendaal (2001: 97ff.) shows that the Nilotic Luo language of Western Kenya has acquired an incipient system of noun-classes through contact with neighboring Bantu-speakers. The degree of contact necessary for this major restructuring to occur is reflected in many aspects of Luo culture, which resembles those of the Bantu farmers more than their pastoral relatives in the Western Nilotic group.

The relevance for the interpretation of prehistory is that processes of language mixing must surely reflect cultural interpenetration and as such, should be visible in the archaeological record. This type of interaction between attested linguistic and archaeological data has been more thoroughly studied in Oceania, where the encounter between Austronesian and Papuan languages and their highly distinctive material culture has been documented in some detail. Dutton (1999) studied the relationship between language mixing and pottery in the archaeological record on the island of Mailu. The dominant group today, the Papuan-speaking Magi, turn out to have a maritime and trade vocabulary almost entirely borrowed from Austronesian. The pottery sequence, described by Irwin (1985) can be almost exactly correlated with a series of hypothetical language events.

27.8 Understanding writing

Epigraphy is a specialized branch of archaeology and immense scholarly effort goes into the processes of decipherment of fragmentary texts. Exploring relations between sound and symbol is the focus of the typical encyclopedic volumes on writing systems that have been published in recent years (e.g., Coulmas 2003). However, much less research has gone into the social context of writing and in particular understanding the social processes that lead to its adoption. Typical texts on this subject seem to be characteristically ill-informed about actual writing systems (e.g., Goody 1986). However, the potential for anthropologists to explore the creation, adoption, and spread of writing systems synchronically suggests that in principle we can illuminate past processes through present ethnography.

As an example, Figure 27.1 shows an accounting book written in the Raga script, developed on the northern coast of Pentecost Island in Vanuatu.[5] There is no reference to this script in the usual sources, but from interviews it seems it was developed in the context of the Raga cultural revival movement. It is only known to a small number of individuals who are senior in the ranking system based on pig-killing. The bases of the symbols are iconic elements taken from sand-drawing, a traditional art on Pentecost and other nearby islands. A roman orthography has long been developed

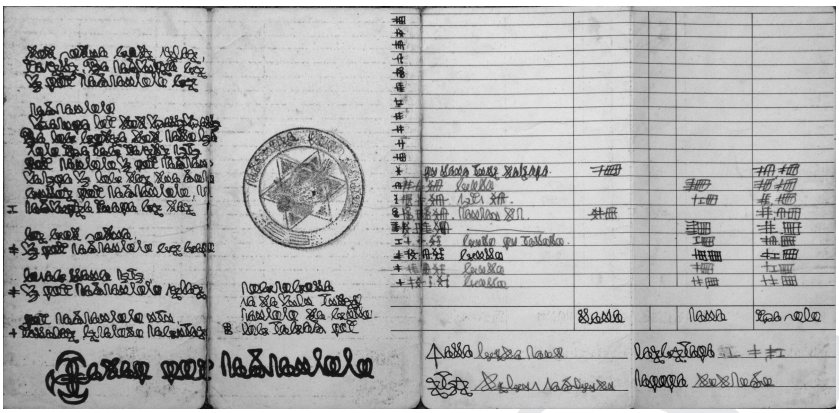

Figure 27.1 An example of the Raga writing system (*Source:* Author photo, Loltong, Vanuatu, August 2011)

for Raga, and the script follows its conventions closely, indicating it is a recent invention.

Figure 27.2 shows that it is possible to capture the introduction of writing as it happens. It shows the 2008 launching of the first alphabet chart and primer for the Eda language, spoken in northwestern Nigeria.[6] Unusually for Nigeria, the orthography was developed without outside input, and entirely funded by the community. The morning after the launching was the first time many Eda speakers had been exposed to a written form of their language, and people were walking around, primers in hand, expressing amazement at the relationship between the already familiar symbols and the sounds of their own languages. Participation in events of this type can help model the transition from the oral to the written in prehistory; the script-bearers, committed Christians, clearly parallel the priestly classes of the Ancient Near East.

Multiple language inscriptions are known from many written cultures and are often expressive of actual or intended political dominance. The role of such inscriptions in, for example, the decipherment of hieroglyphics is a well-known story. Less understood is the passion for multiple languages as an expression of intellectual curiosity. Figure 27.3 shows part of a stone inscription on the palace wall, in Durbar Square, Kathmandu, dating from the seventeenth century, where English and French can be descried, along with other languages of the subcontinent. This clearly is not primarily about politics, but rather reflects the multilingual environment of the market during the Malla period in Newar history.

27.9 The genesis of language registers

Sociocultural anthropologists have long documented marked divisions of gender roles in societies across the world, reflected in social and economic

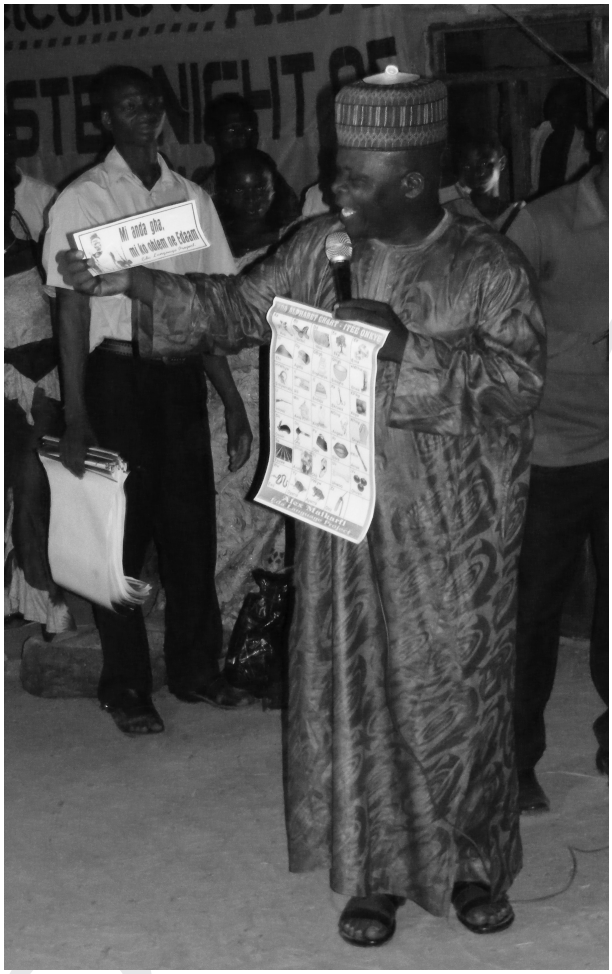

Figure 27.2 Launching the Eda alphabet chart (*Source:* Author photo, Kadara, Nigeria, 2008)

organization. But similar divisions also have linguistic correlates. Informal differences in male and female speech registers have often been noted across the world, reflected in both choice of topics and semantics. Phonological and morphological marking of a gender register is much rarer, although it is reported sporadically across the world, notably in Sumerian (Rubio 2007), Chukchi (Dunn 2000), and Garifuna (Munro 1998). Japanese has a large repertoire of lexical variants used by women that are distinct from the politeness register, known as *onna kotoba* (女言葉 'women's words') or *joseigo* (女性語 'women's language') (Reynolds 1990). These typically interface with the politeness registers in Japanese. The Australian language Yanyuwa has separate dialects for men and for women at the morphological level (Kirton 1988). The only time men use the women's dialect is when they are quoting someone of the opposite sex, and vice versa.

Ethnographic evidence for gender registers in the present can be compared with epigraphic evidence from archaeology. For example, there were

Figure 27.3 Multi-language inscription, Durbar Square, Kathmandu, Nepal (*Source:* Author photo)

apparently two sociolects of Sumerian (Rubio 2007). The standard variety is called *eme-ŋir*, but *eme-sal* (EME.SAL, possibly 'fine tongue' or high-pitched voice) is often translated as 'women's language'. *Eme-sal* is used exclusively by female characters in some literary texts and in certain genres of cult songs. The special features of *eme-sal* are mostly phonological (e.g., *m* is often used instead of *ŋ* as in *me* vs. standard *ŋe* 'I'), but words different from the standard language are also used (e.g., *ga-ša-an* vs. standard *nin* 'lady').

Tarok, a Plateau language of East-Central Nigeria, has a morphologically marked gender register. This is quite atypical for a Niger-Congo language, although sex-gender pronominal marking is common in the adjacent languages. Longtau and Blench (under review) hypothesize that the evolution of this register arises from two factors: a strongly patrilineal and patrilocal society, where powerful secret societies have acted to reinforce male authority, and persistent bilingualism with Ngas, a neighboring and unrelated Chadic language, which does mark gender morphologically. Tarok has not borrowed segmental morphology, but has adapted the concept of direct linguistic marking of male/female relations.

27.10 Archaeology, linguistics, and genetics: New synthesis or wayward detour?

A discipline which has been the subject of great expectations and even greater claims has been genetics, specifically the analysis of mitochondrial

and latterly paternal or nuclear DNA. (mt)DNA can be recovered from archaeological material and techniques to achieve this are constantly improving. Excavated bones and plant materials can also be compared with their modern relatives to develop hypotheses about palaeoenvironments and the genesis of subsistence strategies. However, more influential has been the sampling of living human populations with a view to determining their relationships. During the 1990s, it was only possible to examine single haplogroups, but advanced techniques now allow whole genome sequencing (first demonstrated in 2000 and commercially practical since 2007). An early success of this technique was "Mitochondrial Eve," the assumption that all humans had a "Most Recent Common Ancestor" who lived in Africa some 200,000 years ago (e.g., Behar *et al.* 2008). To judge by the claims of some of its exponents, the links between language, demographic movement, and genetics in prehistory are well-established. These were enthusiastically promoted at the end of the 1980s and into the early 1990s as "the New Synthesis" and "Archaeogenetics" (see, for example, Cavalli-Sforza *et al.* 1988; Renfrew 1992; Renfrew 2002). The volume *The History and Geography of Human Genes* essayed a major revision of the methodology for exploring human history (Cavalli-Sforza *et al.* 1994). Linguistic classifications of human populations purport to offer a tool for outflanking simple racial models; more abstract, they appear to provide an ideal analog to the classificatory trees drawn from DNA analyses.

What is going wrong here? Human populations move, interact, spread their genes; there should be a link with the language map. The sand in the machine is language shift; human populations shift languages for reasons which have no biological analogy. Their marriage patterns may reflect notions of cultural prestige that do not mirror biological advantage. As a consequence, language affiliation and genetic composition rapidly go out of synchronization. Only where a population is expanding into previously uninhabited terrain or is otherwise unable to interact with other, genetically distinct, populations is such a correspondence likely. Genetics seems presently to be confident about its ability to provide useful hypotheses for other disciplines to test, but outside its special arena, a healthy skepticism still prevails.

Polynesian represents as simple a case history as exists: linguists agree that it is an offshoot of Central Pacific, which includes Rotuman and Fiji, and Samoa is the first island in the chain which eventually leads to New Zealand. For most accepted language groupings, notably Austronesian, of which Polynesian is but a late subset, many physical types are represented and many of the genetic interactions in prehistory are still poorly understood. Despite their racial, archaeological, and genetic accretions, terms such as Polynesian and Austronesian remain purely linguistic classifications and attempts to implant other types of meanings encounter a logical gap (hence the problems with overviews such as Friedlaender *et al.* 2008). To assume that linguistic entities can be mapped one-to-one against

constructs from other disciplines is also to implicitly accept that contradictions can occur. In other words, a proposition of the form "genetics shows that Polynesians did not originate in Samoa as commonly supposed, but rather . . ." has an assignable meaning. Bing Su *et al.* (2000) use genetics to try to decide between a Melanesian and a Taiwanese origin for the Polynesians. If geneticists claim that the Polynesians originated in Java some 17 kya (Oppenheimer and Richards 2001), and archaeology points to Fiji/Samoa around 3,000 years ago (Kirch 2000), one or the other or both are wrong, or they are using non-congruent definitions of "Polynesian." This represents a serious confusion; genetics cannot show linguistic hypotheses to be "wrong" in this way.

What, then, can such statements mean? Presumably those who say this have something in mind. The underlying statement seems to be that "certain genetic markers characteristic of the people presently identified as Polynesian are found in important concentrations in *x*," where *x* is different from the agreed homeland of the Polynesians. Whether the Polynesian-speaking peoples have really been adequately sampled remains doubtful. However, for the sake of argument, let us suppose that Polynesian-speaking peoples have been so characterized. The geneticists' claim then amounts to the observation that the genetic profile typical of a linguistic group is found among peoples who do not speak those languages today. Clearly this can have a number of possible explanations:

- Chance mutation
- Migration of a population from the present-day Polynesian-speaking region to region *x* and its assimilation
- Migration of a population from region *x* to the present-day Polynesian-speaking region and its assimilation
- Both populations deriving from a common source in a third region thus far unidentified

However, none of these options suggest that linguists are wrong or even confused in their characterization of Polynesian. There are technical problems with the results from DNA analyses, but even more important are logical gaps that are far from being addressed. Moreover, DNA is a large church, with a great variety of haplotypes and significantly different distributions of nuclear and mitochondrial DNA. So a distinctive characterization of Polynesians on this basis is probably as much a chimera as the classification of human races by head types, nasal indices, or many another now-forgotten indicator.

Skepticism on this front does not imply that a synthesis is not possible or desirable. More cautious essays in bringing together these different disciplines have begun to appear in edited volumes, confronting results from disciplinary approaches, notably Sagart *et al.* (2005) and Enfield (2011). Less grandiose claims may lead to more coherent accounts of the past.

27.11 Conclusions

Generally speaking, archaeologists have taken more interest than sociocultural anthropologists in adapting models from the present to interpret the past. Sociocultural anthropologists are interested in documentary evidence, but rarely in prehistory. But sociocultural anthropologists with an interest in linguistics could enrich their models of social and language change by comparison with the evidence from archaeology. Some examples given in this chapter include the early impact of writing on nonliterate societies, the comparison with past and present episodes of language leveling, the modeling of creolization processes, and the genesis of language registers. Sociocultural anthropology has contributed much to the study of political and religious authority, and these were expressed through language as much in the past as in the present. Interpreting both linguistic patterning, as in palaeosociolinguistics, and hence the distribution of material culture can only be achieved when all three disciplines work together.

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the two definitions of vernacular are related surfaces explicitly in characterizations (Labov 1972a) of middle-class speech as more self-conscious and contrived than working-class speech, and claims (Kroch 1978) that the socioeconomic stratification of language is a result of stratified resistance to innovation.

2. The notion of the vernacular also permitted the study of age differences as reflections of changes in progress. As the first learned variety, the state of the language at the time of the individual's acquisition remains stable in the individual's vernacular, allowing speakers to represent not only social address but time.
3. Parentheses indicate the status of a form as a variable.
4. For an account of this development as taking place in three waves of analytic practice, see Eckert (2012). It is not accidental that this wave corresponds to third-wave feminism, inasmuch as it contests the givenness of social categories.
5. Experimental studies of perception are older than the study of variation (e.g., Lambert 1960), and figured prominently in Labov's New York City study (1966). More recent work on perception has benefited from increasingly sophisticated experimental methods emerging in social psychology and psycholinguistics.
6. One can talk about the enregisterment of a single feature, but this turns on the verbal sense of register alone, and not on the holism of registers.

Chapter 27. Language and archaeology

1. Some previous publications cover similar ground (e.g., Blench and Spriggs 1999; Blench 2004) so I have concentrated on recent developments and innovative approaches, summarizing briefly the more usual topics.
2. Leonard Bloomfield (1935: 6) noted that no direct source in Voltaire's writings has been discovered and there is more than a suspicion that this is a piece of convenient linguistic folklore.
3. The conventional narrative omits Jones' erroneous belief that Egyptian, Japanese, and Chinese were part of Indo-European while Hindi was not, which suggests that his method was seriously flawed.
4. Originals: *Es gibt keine Mischsprache* and *Es gibt keine völlig ungemischte Sprache*.
5. Thanks to Patrick Tevi for introducing me to this script and allowing me to photograph his manuscripts.
6. Thanks to Alex Maikarfi for inviting me to this event.

Chapter 28. Language and biology

1. By convention, human genes are denoted with *ITALIC CAPITAL LETTERS* and their protein product by NORMAL TYPEFACE CAPITALS.