

Typological traits and genetic linguistics

ABSTRACT

One of the basic principles in establishing a genetic grouping of languages is that typological traits must be excluded from consideration at the initial stage of establishment; only substantive traits (form-meaning pairings) are relevant. Yet typological evidence is still frequently appealed to in recent discussions of the methodology for establishing genetic classifications and in recent proposals for genetic affiliations. It is suggested that this is due to a conflation of typological and substantive traits in theoretical discussions of the role of 'grammar' and 'structure' in establishing genetic classifications of languages.

Introduction

One of the basic principles in establishing a genetic grouping of languages is that typological traits must be excluded from consideration at the initial stage of establishment. This principle was articulated by Greenberg in his earliest work on the classification of African languages (Greenberg 1948:24-26; 1949:79-83), and also in his papers on genetic linguistics from the 1950s (Greenberg 1953/1971:16-18; 1957:36). Greenberg cites Meillet as an antecedent; this will be discussed further in §4. In these papers, Greenberg describes comparison of typological traits 'resemblance in meaning only', such as the presence/absence of sex gender, and 'resemblance in form only', such as the presence/absence of tone systems (Greenberg 1953/1971:16). Greenberg later used the term 'typological' to describe such traits, and in fact developed the study of typological traits as an independent field of inquiry, typology and universals research (Greenberg 1963/1966, Greenberg et al. 1978, inter alia; see also Comrie 1989, Croft 2003). In contrast, only similarities in both meaning and form are to be considered in the initial stage of establishment of a genetic family (Greenberg 1953/1971:14-16; 1957:35-37). There is no term that has arisen to refer exclusively to form-meaning pairings in historical linguistic comparison. I will use the term SUBSTANTIVE traits to describe form-meaning pairings, of either grammatical or lexical morphemes, for historical linguistic comparison.¹

The reception of Greenberg's classification of African languages and early methodological essays indicated that most historical linguists accepted the principle of the exclusion of typological traits as a fundamental one for genetic linguistics (e.g., Kroeber in Tax et al. 1953:61; Dyen 1959:542; Cole 1960:219; Welmers 1963:409, 416 fn2; Diakonoff 1965:55; Winston 1966:161-62; Heine 1971, 1972:8-9). In Campbell and Mithun's 1979 survey of historical linguistics in Native North American languages, they present this principle as one of the basic principles of genetic classification (Campbell and Mithun 1979:51; see also Campbell 1997:232-33; Mithun 1990). (Campbell is highly critical of another principle of Greenberg's genetic classification method, namely multilateral comparison [e.g. Campbell 1986, 1988, 1997, 1999, 2003], but these two principles are logically independent of each other.)

¹Bybee, Perkins & Pagliuca (1994:1) use the term 'substance' in contrast with 'form' to describe both phonetic and semantic content. Croft (2000:203) uses 'substance' in basically the usage proposed here; he contrasts it with 'schematic' syntactic patterns or constructions that have no phonetic substance. The latter is one type of typological trait.

The principle of the exclusion of typological traits is not explicitly mentioned in many handbooks of historical linguistics or linguistic reconstruction. Campbell points it out in his textbook (1998/1999:323) and survey article in the *Handbook of Historical Linguistics* (2003:277) as well as in the aforementioned publications. Fox mentions it in passing (Fox 1995:240), as do Ross and Durie (1996:5) in their introductory essay in Durie and Ross (1996). But it is not mentioned in Crowley's or Hock & Joseph's textbooks (Crowley 1997; Hock & Joseph 1996), or in Baldi's brief survey article (Baldi 1990). Nevertheless, it would appear to be presupposed by the assumption of the vast majority of historical linguists that a genetic classification is 'proven' by sound correspondences. One cannot have sound correspondences without comparing simultaneously form and meaning of the morphemes and words of the languages being compared: one cannot say *p* in language A corresponds to *f* in language B without the sounds belonging to morphemes with semantically equivalent or related meanings.

Or is it really assumed that typological traits are irrelevant for establishing genetic classifications? The purpose of this note is to point out the continuing appeal to typological traits for establishing genetic classifications in recent methodological articles and in specific proposals, and to argue against its appropriateness for this purpose. Examples will be given from work in the past quarter century. I will conclude with a historical perspective, focusing particularly on Meillet's contribution to the debate.

Typological traits in methodological discussions

Goddard's discussions of the establishment of the Algic genetic grouping (Algonquian, Wiyot and Yurok; Goddard 1975, 1986) are cited by Americanist historical linguists in discussions of methodological issues (e.g. Campbell and Mithun 1979:55-56; Campbell & Goddard 1990:24, and also a number of Americanist linguists in personal communication with the author). Goddard presents the following statement of what constitutes proving a genetic relationship:

It is necessary to show not only that the resemblances are so numerous and detailed as to exclude the possibility of chance as an explanation but also that they are so tightly woven into the basic fabric of the languages that they cannot be explained simply as borrowings...If one finds in two languages what is essentially the same system, with the same internal structure, embedded in their grammars, then it is likely that the criteria for proof can be met. (Goddard 1975:249-50)

This passage does not state what sorts of 'resemblances' are taken into consideration, but the illustrations from Algic show that Goddard uses both substantive and typological traits. Goddard states that the person prefixes of Proto-Algonquian, Wiyot and Yurok 'share so many similarities of form and function, that they alone would be sufficient to demonstrate a genetic relationship between the languages' (ibid., 250). Goddard enumerates the similarities (Goddard 1975:252-53):

- (1) 1st person *n*, 2nd person *k*, 3rd person *w*, indefinite *m* (with sound correspondences accounting for differences in the Wiyot forms)
- (2) The prefixes are used with both nouns and verbs, for possession in the former case
- (3) Certain nouns insert *-t-* between prefix and stem in Algonquian and Wiyot
- (4) Wiyot nonpossessed noun suffix *-aʔl* resembles Algonquian obviative suffix **-ali*
- (5) Some verbal paradigms use prefixes and suffixes while others use suffixes alone
- (6) An inverse marking pattern is found in Algonquian and Wiyot
- (7) The prefixes are also added to preverbal particles separate from the verb stem
- (8) Prefixes can be added to verbs of possession derived from third-person prefixed nouns in Algonquian and Yurok

Items (1), (3) and (4) are substantive traits, while items (2) and (5)-(8) are typological traits. But they have very different diagnostic values. If one found a language with person prefixes used for both nouns and verbs, with an inverse system and suffixes also used in verbal conjugation, one would not immediately assume that this language is Algic. If on the other hand, one found a language with the full set of pronominal forms as in (1) and the forms were suffixed instead of prefixed, one would not immediately reject such a language as Algic (although one might want to find additional supporting substantive traits). For example, the set B (“absolute”) person markers of Mayan languages are prefixes in some Mayan languages but suffixes in other Mayan languages, and both in still other Mayan languages (Robertson 1980:85-86).

Goddard offers two other pieces of evidence for Algic as a genetic group:

- (9) Lower numerals (1-5 in Algonquian, 1-4 in Wiyot and Yurok) combine directly with certain affixes, but the higher numerals are invariant forms that are found with an additional root that takes the affixes (Goddard 1975:254)
- (10) Two sets of sibling terms, a relative-age set and a relative-sex set, are found in Algonquian and Yurok (Goddard 1986:205)

Again, both of these are typological traits, and in fact Goddard explicitly points out that these two comparisons are not substantive but typological: ‘Note that it is structures and not lexical items that are being compared’ (Goddard 1975:254, with respect to 9).

This is not to deny that the typological patterns that Goddard describes in Algonquian, Wiyot and Yurok may have a common origin in Proto-Algic. However, such typological convergence taken alone cannot be probative of common ancestry. Only shared substantive traits can be probative of a common history, including common ancestry. (Shared substantive traits may also be due to borrowing; this topic will not be discussed here.) In other words, the traits in (1), (3) and (4), combined with other substantive similarities, can be used to argue for the establishment of Algic. The traits in (2) and (5)-(8) are relevant to reconstruction of Proto-Algic, but not to the initial establishment of the Algic genetic grouping (cf. Mithun 1990).

Nichols (1992) describes the ‘standard comparative method’ as beginning with an initial stage in which ‘genetic relatedness is assumed on the basis of significant coincident paradigmaticity and syntagmaticity in grammar and lexicon’ (Nichols 1992:311, note 1). Nichols does not offer definitions of ‘paradigmaticity’ and ‘syntagmaticity’ but gives an example from Indo-European:

Genetic relatedness was assumed on the strength of such shared paradigmaticity as the existence in the daughter languages of the same formal declension classes intersecting in the same way with the same three genders, and these intersecting in the same ways with the same set of cases, and the whole complex intersecting in the same ways with the same set of ablaut grades; and analogously for verbs, with their conjugation classes, stems and sets of endings showing arbitrary but essentially identical distribution and cognate form. Even before the sound correspondences were worked out in detail, relatedness was evident in the identical patterns of grammatical accident and the amount of obviously related basic vocabulary that fit into the system of accident in the same way in the different daughter languages. (Nichols 1992:311-12)

Although it is difficult to interpret this passage, it appears to describe both typological traits and substantive traits. Typological traits include the division into formal declension classes and the distinctions between genders and between cases in nominal declensions, and the comparable distinctions in verbal conjugations. Substantive traits include the related basic vocabulary. The ‘same formal declension classes’ and the

‘identical patterns of grammatical accident’ may refer to substantive traits, but they may equally refer to typological traits.

Again, if one encountered a language with formal declension classes and inflections referring to sex gender and case distinctions, one would not assume that it is an Indo-European language; and likewise for inflection for categories of person, number, tense and mood in the verbal conjugation. Substantive similarities are necessary for hypothesizing a common Indo-European origin. Conversely, a language that lacked sex gender and case distinctions, such as English, would not be excluded from Indo-European on that basis; it would be included if sufficient substantive traits were shared with other Indo-European languages.

Nichols’ 1996 essay places more emphasis on the role of substantive traits: the evidence she considers to be the basis for an initial assumption of genetic relatedness ‘is primary grammatical and includes morphological material with complex paradigmatic and syntagmatic organization’ (Nichols 1996:41). Nichols also hedges her condition of shared paradigmaticity: ‘the full paradigmatic system is attested *in its entirety* (or nearly so) in at least some daughter languages’ (ibid., 47). Nevertheless, Nichols still emphasizes the role of ‘paradigmaticity’:

As mentioned earlier, the evidence taken as probative of relatedness is not individual items but whole systems with a good deal of internal paradigmaticity, ideally multiple paradigmaticity, and involving not only categories but particular shared markers for them (Nichols 1996:48)

Again, the essential criterion for relatedness must be substantive: a language with the same inflectional category distinctions but no relevant shared forms would not be considered to display any evidence of relatedness; but a language with many shared forms but happening to lack some of the paradigmatic distinctions would be a serious candidate for belonging to the same language family.²

Rankin, in a general paper on methods of genetic classification, discusses evidence for the Macro-Siouan genetic grouping (Rankin 1998). Rankin cites Nichols and Goddard and writes:

Comparativists have found that *grammatical evidence* can often simultaneously solve many of the problems introduced by borrowing...and the problems introduced by the ravages of time. To clarify, grammatical evidence is *not* merely the comparison of isolated grammatical morphemes like prepositions, articles or tense-aspect suffixes...Grammatical evidence of the sort that is convincing must not only contain the proper phonological and semantic matches but must also exhibit *syntagmatic* and/or *paradigmatic*, or certain *idiosyncratic morphophonemic* and/or *semantic* behavior in order to decrease the likelihood of chance resemblance. (Rankin 1998:23-24, emphasis original)

Rankin does suggest that typological traits are not enough: ‘The actual morphemes with the paradigms or syntagms must match phonologically between languages also’ (ibid., 25). Rankin then turns to two pieces of grammatical evidence that he considers to support establishment of a Macro-Siouan family including Siouan/Catawban, Yuchi, Iroquoian and Caddoan. (Rankin considers only Siouan/Catawban and Yuchi.)

²Nichols also provides mathematical calculations for the probability of a language having a particular set of traits (typological or substantive) in common. But these calculations suffer from selection bias, that is, by nonrandomly selecting the traits to examine; see Kessler (2001:32-33).

The first trait is the occurrence of two sets classificatory prefixes with nouns, **ko-* and *wi-/we-*. Rankin writes that ‘Besides the existence of this very short paradigm of two sets of prefixes, the most important contribution of this classificatory system to establishing a relationship between Siouan and Yuchi is the *idiosyncratic semantic division* within the *wi-/we-* class’ (ibid., 32, emphasis original). Rankin describes this semantic division as follows:

There was a second classificatory prefix, Proto-Siouan-Catawban *wi-*, Yuchi *we-*, that marked precisely three rather distinct semantic groupings in all three languages: *animal names*, *common foodstuffs*, and *nature or weather-related phenomena*. This strange juxtaposition is perhaps not as surprising as Lakoff’s “women, fire and dangerous things”, and it may have developed from a class of non-human animates, but this particular idiosyncratic semantic grouping can scarcely be the product of independent innovation. (Rankin 1998:30, emphasis original)

But if one found a language which distinguished a noun class of animal names, foodstuff and natural/weather phenomena from all the rest, but did not use *wi-/we-* for that class (or *ko-* for the other class), then one would not assume it belonged to Macro-Siouan. On the other hand, if there were two noun class prefixes, *ko-* and *wi-*, but the *wi-* class included foodstuffs and natural/weather phenomena but not animal names, one would probably not want to exclude it from Macro-Siouan especially if other substantive traits were shared with Siouan and/or Yuchi.

The second set of data that Rankin considers are the personal prefixes of Siouan/Catawban and Yuchi. He suggests substantive similarities of 1st singular **d-* (Catawban and Yuchi only), 2nd singular **y-*, 1st exclusive **ru-/nʉ-* and 1st inclusive **ʔu(k)-/ʔʉ-* (Proto-Siouan and Yuchi only; Rankin 1998:36). But he also suggests that the following phonological evidence also is significant (ibid., 34):

- (11) ‘the pronominal prefixes are *morphophonemically syncopating* (the lack or lose their vowels)’
- (12) ‘they are *fusional* (the allomorphs of the person-number prefixes generally fuse with or replace the initial consonant of the verb root)’
- (13) ‘syncopation products *obstruentize* (glides often becoming the corresponding obstruents)’

But these are all typological traits. If one found a language with person prefixes that syncopated, fused with the initial consonant of the verb root, and obstruentize, but did not resemble or correspond with the posited forms for proto-Siouan, Catawban and Yuchi given above, one would not include it with Macro-Siouan. On the other hand, if one found a language with exactly the forms for the persons given above, but missing one or more of the phonological traits in (11)-(13), one would seriously consider it to belong to Macro-Siouan (again, providing other substantive traits supported this hypothesis). In fact, in his conclusion, Rankin states that the substantive traits ‘form the main thrust of the argument’ while the typological traits ‘further support it, and...sustain my belief in this version of Macro-Siouan’ (ibid., 39). But the typological traits are neither necessary nor sufficient conditions for establishing a Macro-Siouan family.

Typological traits and proposed families

In this section, I show that recent discussions of genetic classifications by comparativist scholars in particular regions use typological evidence, usually in conjunction with substantive evidence, both to argue for and to argue against various hypotheses. In both cases, reliance on the typological evidence is methodologically invalid. (I do not evaluate the substantive evidence for or against any specific proposed

discussed below; this is obviously beyond the scope of this paper, and in most cases the substantive evidence is not presented.)

Wurm (1982) presents a widely, though not completely, accepted classification of the “Papuan” (non-Austronesian) languages of Papua New Guinea. This classification is based explicitly on both ‘lexical’ (substantive) and ‘structural and typological’ criteria (Wurm 1982:68-69). Wurm writes:

...in general, the criteria listed in 5.4.2 [the ‘structural and typological criteria’] are more weighty than those given in 5.4.1 [the ‘lexical criteria’], especially in doubtful cases, but their application is of somewhat dubious value if none of the criteria listed in 5.4.1 provides positive evidence in a comparison of two given languages, unless the application of the criterion 5.4.2(a) results in formal structural evidence on the verb level, preferably accompanied by some on the pronominal level as well. (Wurm 1982:69)

The ‘lexical’ criteria are mostly substantive traits, including pronouns. Criterion 5.4.1.(A)(d), however, allows relationship between languages X and Y to be established ‘If semantic features and groupings of lexical items in X are also present in Y even if the items themselves seem to be non-cognate’ (Wurm 1982:68). This is a typological trait: semantic contrast sets of lexical items defined by semantic features. The ‘structural and typological’ criteria appear to be typological traits, including ‘the structure and typology of verb forms’. Wurm adds ‘the sharing of principles underlying pronominal systems has also considerable diagnostic importance even if the pronouns themselves are formally different in the languages Y and X’ (ibid., 69). In other words, Wurm uses typological traits to establish classifications even when substantive similarities or correspondences are absent. Again, this is invalid, since pronominal contrasts and verbal inflectional contrasts recur in languages around the world that do not form a genetic grouping. As noted above in regard to Goddard’s analysis of Algie evidence, in many cases typological similarities are due to common ancestry, but they cannot be used by themselves to establish common ancestry.

In their survey of the Tasmanian languages (Crowley and Dixon 1981), Crowley and Dixon discuss the possible relationship of the Tasmanian languages, which are very poorly documented, to Australian aboriginal languages. They observe that the phonological systems of the Tasmanian languages ‘were typologically of the predominant Australian variety’ (Crowley and Dixon 1981:419). But they state that ‘for proof of genetic relationship we do, of course, need not just typological similarity but systematic correspondences of grammar and lexicon’ (ibid.). They conclude that grammar and lexicon offer too scanty and too questionable evidence of correspondence with Australian aboriginal languages to establish a relationship between Tasmanian and Australian. The evidence they discuss is given in 14:

- (14) a. possible similarity in form between Ben Lomond Tasmanian first person form, possibly /ŋayɖu/, with recurrent Australian /ŋay-/
b. Tasmanian dative *-du* vs. Australian dative *-gu*
c. noun-adjective order in both Tasmanian and Australian
d. verb-final order in Australian vs. mostly SVO, or at least variable order, in Tasmanian
e. a very few substantive lexical comparisons

Both the general statement and the specific examples imply that both typological and substantive traits are important, indeed necessary, to establish genetic relationships. The general statement entails that both typological similarity and ‘correspondences of grammar and lexicon’ are necessary. Of the examples of correspondences of grammar and lexicon, 14c-d are typological while 14a-b and 14e are substantive. But the typological evidence is irrelevant even to a negative assessment such as Crowley and

Dixon's. Indo-European languages for example differ in the order of adjective and noun, and in the position of the verb, as well as in phonological type; but these typological traits have arisen either via contact with neighboring languages or by independent historical developments. The decisive evidence establishing the genetic unity of Indo-European are the correspondences in substantive traits of the languages, and the typological diversity of the family does not detract from that evidence. Conversely, Indo-Aryan is not related to Dravidian despite their typological similarity (the two families share similar phonological systems and word order, for example).

Another example of a recent argument against a genetic relationship based at least partly on typological traits is found in Güldeman & Vossen (2000) on Khoisan. Greenberg (1963) presented evidence for the Khoisan family based on substantive similarities in lexicon and grammatical morphemes. He included three primary branches: Hadza, Sandawe and South African Khoisan (SAK); SAK was further divided into three subgroups, Northern, Central and Southern. The relationship of Sandawe and especially Hadza to SAK has been debated, but chiefly over substantive evidence and so lies outside the purview of this paper. Güldeman & Vossen (2000) also question the genetic unity of SAK:

While members of each of Greenberg's three SAK branches can more or less be shown to share genetic relationships, such affiliations between the branches are highly questionable. When one moves beyond lexical comparison, similarities appear to be mainly phonological: complex inventories with clicks, a word structure of predominantly CVCV, CVV and CVN sequences and a distinctive distribution of consonants in which obstruents are restricted to C₁ position. However, at the grammatical level there are major differences. For example, Northern Khoisan has little morphology compared to Central Khoisan in particular, but it has a fairly elaborated syntactic structure. The Central languages have a unique nominal and pronominal person-gender-number system as compared to Northern and Southern, and a large variety of verbal extensions unattested elsewhere in Khoisan. In the Southern branch and in ꞤHōã the bilabial click influx is unique. (Güldeman & Vossen 2000:101)

But all of the evidence presented in this discussion is typological. The similarity in phonological typological traits are irrelevant to the genetic relationship of the Northern, Central and Southern groups. Conversely, the *dissimilarity* of the grammatical typological traits is equally irrelevant to any case *against* the genetic relationship of the three groups. Only substantive resemblances or correspondences in lexicon and grammatical morphemes (or lack thereof) can be used to establish or challenge a genetic classification.

Historical linguists who have recently discussed evidence for deeper genetic groupings sometimes also invoke typological traits as well as substantive traits. For example, Blench (1995) reviews the hypothesis of Gregersen (1972) that Niger-Kordofanian and Nilo-Saharan form a larger family, Kongo-Saharan, excluding Afroasiatic and Khoisan. Gregersen relied exclusively on substantive evidence, but Blench proposes ATR vowel harmony and labiovelar consonants as well as a range of substantive grammatical and lexical morphemes to support Gregersen's hypothesis. These two traits are both typological. Especially for groups of this time depth, it is likely that typological traits will have changed in the daughter language groups and languages. The Kongo-Saharan hypothesis may be valid, but it must be evaluated solely on the basis of substantive evidence adduced for it.

Conclusion: a historical perspective

I have argued that typological traits are still frequently appealed to for establishing—or questioning—genetic classifications, both in methodological papers and specific proposals for genetic classifications in recent work in historical linguistics. This is despite the apparently accepted principle that typological traits should not play a role in the establishment of linguistic families in genetic linguistics. I have also argued above that the principle is essentially correct. I conclude by addressing the question of why typological traits persist in being used in genetic classification research.

It was noted in §1 that Greenberg enunciated the principle of exclusion of typological traits in his earliest papers on classification (1948-1957). In one of those papers, he states that Meillet, who is one of the most widely cited authorities for the theory of comparative-historical linguistics, alluded to this principle before him: ‘Meillet differentiates between concrete grammatical resemblances involving both form and meaning and those involving meaning only without form, but only in passing’ (Greenberg 1953/1971:27). There are two passages in Meillet 1914/1948 discussing this principle, on pages 90 and 91; they are quoted below (translation of the second passage is from Rankin 1992:329):

Chinese and a language of the Sudan, one from Dahomey, Ewe for example, both use short, mostly monosyllabic words, whose meanings vary depending on their tones, and their grammar is based on word order and the use of particles. But this does not imply that Chinese and Ewe are related; the phonological shape [*détail concret*] of the morphemes [*formes*] do not match. Only the congruence of the phonological means of expression [*procédés matériels d’expression*] is probative...what proves relationship is the congruence of the phonological shape [*détail matériel*] of the means of expression (Meillet 1914/1948:90)³

When an eminent Americanist, Mr. Kroeber, in his article in *Anthropos*, VIII (1913:389ff) entitled “The determination of linguistic relationship”, protested the use of general similarities [*concordances générales*] in morphological structure to establish the genetic relationships of languages, he was entirely correct. Only it is not proper to conclude additionally that genetic relationships should be established considering vocabulary instead of morphology...Grammatical congruence [*concordances grammaticales*] and only grammatical congruence furnishes rigorous proof, but [only] on the condition that one use the phonological shape [*détail matériel*] of the morphemes [*formes*] and that one establish that particular grammatical morphemes [*formes grammaticales*] used in the languages under consideration go back to a common origin. (Meillet 1914/1948:91)⁴

³“Le chinois et telle langue du Soudan, celle du Dahomey ou ewe, par exemple, peuvent se servir également de mots courts, en général monosyllabiques, faire varier la signification des mots en changeant l’intonation, fonder leur grammaire sur l’ordre des mots et sur l’emploi de mots accessoires; il n’en résulte pas que le chinois et l’ewe soient des langues parentes; car le détail concret des formes ne concorde pas; or, seule la concordance des procédés matériels d’expression est probante...ce qui prouve une parenté, c’est la concordance dans le détail matériel des moyens d’expression”

⁴“Quand, dans son article de *Anthropos*, VIII (1913), p. 389 et suiv., intitulé *The Determination of Linguistic Relationship*, un américaniste éminent, M. Kroeber, a protesté contre l’emploi des concordances générales de structure morphologique pour établir des parentés de langues, il a eu entièrement raison. Seulement il n’est pas licite de conclure de là que les parentés doivent s’établir par la considération du vocabulaire, non par celle de la morphologie...Les concordances grammaticales prouvent, et elles seules prouvent rigoureusement, mais à condition qu’on se serve du détail matériel des formes et qu’on établisse que certaines formes grammaticales particulières employées dans les langues considérées remontent à une origine commune”

In the second passage Meillet responds to Kroeber (1913), which in turn is a defense of Kroeber and Dixon's (1903) nongenetic classification of the languages of California. Kroeber's paper argues against the use of 'features of structure' (Kroeber 1913:389) or 'grammar, or internal structure or form' (ibid.) in genetic classification ('relationship'; ibid.). Kroeber even anticipates Greenberg's critique of prior African classifications:

As long as eminent ethnologists persist in regarding Hottentot as originally a Hamitic language merely because it expresses sex-gender, they will fail to recognize the general principle that such structural peculiarities of speech have spread over long distances and to unrelated groups of speech. (Kroeber 1913:391)

In fact, Kroeber and Dixon (1903) is an early example of areal-typological research, complete with maps showing the distribution of typological traits in California. However, both Kroeber and Dixon (1903) and Kroeber (1913) fail to distinguish substantive traits from purely typological traits (for examples, see Kroeber and Dixon 1903:16-17 and Kroeber 1913:399), and so Kroeber wrongly rejects all grammatical evidence in considering genetic relationship, as Meillet notes.

Meillet in fact expands on his passing remark from 1914 in his 1924 Oslo lectures (Meillet 1925:22-27/1966:36-41); his argument is cited below:

Morphology, that is, the set of processes by which words are modified and grouped to form sentences, is the most stable thing in languages. But it is necessary to distinguish here between the general processes [*procédés généraux*] and the specific details of the forms [*le détail des formes*]...it is not with such general features of structure [*traits généraux de structure*], which are subject to change completely in the course of several centuries and moreover do not have very numerous variations, that one can establish linguistic relationships...a language with an involved and complex morphology, containing a large number of specific facts [*faits particuliers*], lends itself well to the proof of relationship...The more singular [*singuliers*] the facts are by which the agreement between two languages is established, the greater is the conclusive force of the agreement. (Meillet 1925:22, 25, 26, 27/1966:36, 39, 40, 41)⁵

Nevertheless, Meillet is not entirely clear or consistent in his position. The adjectives *concret* and *matériel* clearly indicate phonetic substance, but *particulier* and *singulier* do not. At the beginning of the Oslo lectures, Meillet gives the example of the French, Italian and Spanish numerals to illustrate the form-meaning similarities and sound correspondences that for him demonstrate genetic relationship. But he then adds:

Where apparent similarities have indicated the right path, it often happens that some *singular* detail [*détail singulier*] brings confirmation. It is significant, for example, that there is a distinction between the masculine

⁵“La morphologie, c'est-à-dire l'ensemble des procédés par lesquels on modifie et on groupe les mots pour constituer des phrases, est ce qu'il y a de plus stable dans la langue. Mais il faut distinguer ici entre les procédés généraux et le détail des formes...Ce n'est...pas avec de pareils traits généraux de structure, sujets à changer du tout au tout en l'espace de quelques siècles, et du reste comportent seulement des variations peu nombreuses, qu'on peut établir des parentés de langue...Dès lors une langue à morphologie touffue et complexe, comprenant un grand nombre de faits particuliers, se prête bien à la démonstration des parentés...Plus sont singuliers les faits dont on constate entre deux langues la concordance, et plus grande est la force probante de la concordance.”

and feminine for *un, une* and not for the other numerals. (Meillet 1925:3-4/1966:16; emphasis original)⁶

A sex gender distinction between forms for ‘one’ is a typological trait, yet Meillet uses the same term here that he uses in the previously cited passage, and even in the 1914 passage (*détail*, contrasted with [*procédés*] *généraux*), to supposedly distinguish form-meaning similarities from typological similarities. One would not assume a language is Romance because it has a sex-gender distinction in ‘one’ but not higher numerals, but no substantive similarities or correspondences among the numerals. Nor would one exclude a language from Romance if it had substantive similarities and correspondences among the numerals but lacked a gender distinction in ‘one’. The only relevant data is whether there are significant substantive similarities and correspondences.

Meillet is also ambivalent about the role of individual form-meaning similarities or correspondences and ‘systems’. The passages discussing this question appear to fall mostly on the side of the systems (compare Nichols 1992, discussed above):

It means nothing to posit only partial comparisons: each linguistic fact [*fait linguistique*] is part of a system where everything holds together. We must not compare one fact of detail [*fait de détail*] with another fact of detail, but one linguistic system with another system. (Meillet 1925:12-13/1966:25-26)⁷

The observation of singular facts [*faits singuliers*] does not excuse one from examining the whole of the morphology. Every morphology constitutes a complete system...Particular features [*Les particularités*] are the decisive means of proof. But the proof is not definitely established until one has confronted morphological system with morphological system [of two putatively related languages] and until one has seen how it is possible to pass from the initial system to the later systems. (ibid., 29/43-44)⁸

But this singularity [*singularité*; of the history of each word and each form] has its place in systematic wholes, and anyone who considered isolated facts [*faits isolés*] without representing them in these systems would run the risk of committing errors even worse than those committed by the linguist who exclusively considers systems and does not study with a very sure critique each of the special facts [*faits particuliers*] from which these systems are made. (ibid., 70-71/89)⁹

⁶“Là où les ressemblances visibles ont indiqué la bonne voie, il arrive souvent que tel détail *singulier* apporte une confirmation. Il est significatif par exemple qu’il y ait une distinction du masculin et du féminin pour *un, une* et pas pour les autres nombres.”

⁷“Ce n’est rien que de poster des rapprochements partiels: chaque fait linguistique fait partie d’un ensemble où tout se tient. Il ne faut pas rapprocher un fait de détail d’un autre fait de détail, mais un système linguistique d’un autre système.”

⁸“L’observation des faits singuliers ne dispense pas d’examiner l’ensemble de la morphologie. Toute morphologie constitue un système complet...Les particularités sont le moyen décisif de preuve. Mais la démonstration n’est définitivement acquise que lorsqu’on a confronté système morphologique à système morphologique et qu’on a vu comment il est possible de passer du système initial aux systèmes ultérieurs.”

⁹“Mais cette singularité a sa place dans des ensembles systématiques, et qui envisagerait les faits isolés sans se les représenter dans ces ensembles risquerait de commettre des erreurs pires encore que le linguiste qui envisage exclusivement des ensembles et n’étudie pas avec une critique assez sûre chacun des faits particuliers dont sont faits ces ensembles.”

It is not always clear what Meillet intends by ‘systems’. He appears to mean something more than simply the accumulation of independent form-meaning similarities among grammatical forms, since he contrasts ‘particular features’ with ‘morphological system’ in the second passage quoted above. (Perhaps significantly, Meillet uses *singulier* and *particulier*, not *matériel* or *concret*, to refer to the former in these passages.) But as we argued above, insistence on morphological systems is essentially a typological trait (presence vs. absence of various morphological contrasts in declension and conjugation).

Nevertheless, Meillet elsewhere shows that the ‘system’ need not survive in completeness for a genetic relationship to be maintained:

One must add that the use of *de* may disappear from a French dialect or that of *-s* from an English dialect without these dialects ceasing to be French or English. Only positive facts have a conclusive value. (Meillet 1925:25/ 1966:40)¹⁰

Hence, Meillet is here also equivocal on the role of typological traits in establishing genetic families, placing great emphasis on ‘systems’ but then admitting that systems may break down in particular languages without destroying the genetic unity of a family.

It may be that the notion of an absolute unity and cohesiveness of the grammatical or structural system of a language, emphasized by Meillet in these passages, is the reason why typological traits persist in being used to establish genetic relationship. This is certainly implied in the arguments presented by Goddard and Nichols. The terms ‘grammar’ and ‘structure’ conflate typological traits and substantive traits, as we have seen. In all of the examples given in this paper, both typological and substantive traits in ‘grammar’ have been appealed to. Yet the distinction between substantive and typological traits is a crucial one for genetic linguistics. Typological traits commonly diffuse and are ‘limited in number’ (as Meillet notes; cf. Greenberg 1953/1971:16), and are therefore unreliable for genetic classification. Substantive grammatical traits are highly (though not completely) resistant to borrowing and are often among the strongest pieces of evidence for a genetic classification.

The fact that there is not even a widely accepted term for substantive traits for historical comparison, as well as the conflation of typological and substantive traits documented in this paper, is a manifestation of the fact that this conflation has not been completely recognized. Furthermore, the notion of a strict unity of a system leads to the view that all properties of such a system—both typological and substantive—must be present to establish the genetic unity of a group of languages. But this view is incorrect. Typological traits can vary within and across language families, but substantive traits provide the basis for establishing genetic classifications of languages. The presence of typological similarities between two languages do not support a hypothesized genetic relationship between them, either by themselves or in conjunction with substantive similarities. Nor do typological differences weaken a hypothesized genetic relationship. Substantive traits alone must be used to establish (or question) a genetic classification of languages. Typological and substantive traits must be kept strictly separate in the establishment of genetic families.

¹⁰“Il faut ajouter que l’emploi de *de* peut disparaître d’un parler français ou celui de *-s* d’un parler anglais sans que, pour cela, des parlers cessent d’être français ou anglais. Seuls, les faits positifs ont une valeur probante.”

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