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Subgrouping in Tibeto-Burman

Can an individual-identifying standard be developed?
How do we factor in the history of migrations
and language contact?*

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This paper is an attempt to apply insights and methodologies from Nichols (1996) to help us resolve problems in determining genetic relatedness among Sino-Tibetan languages and in our efforts at reconstructing protolanguages of different time depths. The results from the application of Nichols's methodology are explained with reference to what we know about the migrations of the Sino-Tibetan peoples.

1. Introduction

Two problems cloud our understanding of subgrouping in Tibeto-Burman. One is the lack of consistent and clear standards and principles for subgrouping. Subgrouping is often based on certain features that the languages are said to share, or on a few shared lexical items, or even on the fieldworker's intuitions, or on how remote speakers feel different languages are (the degree of mutual intelligibility). As discussed in Nichols (1996), in order to use the comparative method to establish genetic relatedness, it is necessary to find correspondences that statistically have an extremely low probability of occurring as a matter of coincidence: that is, correspondences that have a one in one hundred thousand chance of occurring accidentally. In the Indo-European languages, the morphological paradigms can serve this purpose. In monosyllabic, morphology-poor languages, achieving this standard is more difficult but not

* Johanna Nichols's work has always had a big influence on my own, as can be seen clearly in this article, and I am also grateful for her support and encouragement as a member of my Ph.D. committee back in the 1980s. I am happy I am able to contribute to this volume to show my respect, admiration, and affection for her. I would like to thank Tiancheng Li and Meifang Gu for their help with the statistics used in this paper.

impossible. What is needed is for cognate elements (words or morphological markers) to be organized into paradigm-like sets and for the sets as sets (not individual items) applied rigorously to determine relatedness. That is, the *sets* are reconstructed and used as individual-identifying evidence of relatedness, because the particular combination of cognate elements as an internally structured set would give us the level of probability we need. I will attempt to create an example of such a set using the person-marking and reflexive/middle-marking and certain other distinctive features found in a subset of Tibeto-Burman languages that can be taken together to identify the individual protolanguage from which those languages descended, and so identify that subset of languages within Tibeto-Burman as a valid genetic grouping.

The second problem was raised in a study of the migrations of the Sino-Tibetan speaking people (LaPolla 2001). If we look at the various proposals for subgrouping in Tibeto-Burman, almost all include geographic designations such as “Western Himalayan” and “Eastern Himalayan.” The debate about the use of the term “Kamarupan” (see, for example, Burling 1999; Matisoff 1999) hinges partly on the validity of using geographic terms. These designations assume that either the languages involved have always been at that location or that all the languages developed from a single ancestor who migrated to that location at some time in the past. Yet we know that there have been waves of migration, particularly into and/or through certain regions, and so there is a suspicion that the languages were not originally closely related but have come to seem similar because of long-term contact. Even for groupings that are not given geographic names, geographic factors seem to have played a role in determining which languages are seen as part of that grouping. For example, the split between the Bodish branch (Tibetan and the Tamang-Gurung-Thakali-Manang group of languages) and the rest of Tibeto-Burman was due to the early migration of those who became the Bodish speakers west and then south throughout Tibet and down into Nepal, Bhutan, and India (unlike the speakers of the rest of the Tibeto-Burman languages, who either stayed in northwestern China or migrated down the river valleys east of Tibet into Southeast Asia; see LaPolla 2001 for details). But some of the languages classified as Bodic by Shafer (1966), such as the Kiranti languages and the Western Himalayan languages of Uttar Pradesh, show individual-identifying correspondences with languages that clearly did not come down with the Bodish migration, such as Rawang. The only possible conclusion is that those so-called (non-Bodish) Bodic languages did not come down from the north but came across from the (south-)east, and show similarities with the Bodish languages because of contact rather than genetic inheritance.¹

1. Other evidence points to this conclusion as well. See the papers from the conference *Origins and Migrations Among Tibeto-Burman Speakers of the Extended Eastern Himalaya*, organized by Toni Huber and Stuart Blackburn, Institute for Asian and African Studies, Humboldt University of Berlin, 23–25 May 2008.

2. Type-identifying versus individual-identifying evidence

Nichols (1996) is a discussion of what types of evidence we need to show relatedness between two languages. Nichols argues that the evidence that has been used in the history of Indo-European linguistics for showing relatedness is not individual word correspondences but “whole systems or subsystems with a good deal of internal paradigmaticity, ideally multiple paradigmaticity, and involving not only categories but particular shared markers for them” (p. 48). The reason for this is that there is very little likelihood of these paradigms appearing in different languages purely by chance, and so that paradigm can be said to have developed only once, and, therefore, any languages that share that paradigm must have developed out of the single language in which that paradigm developed. That is, the paradigm identifies a unique individual protolanguage. This type of evidence Nichols calls “individual-identifying” evidence, and she opposes it to “type-identifying” evidence – features such as configurationality, a particular word order, or the simple presence of a particular category such as gender or ergativity, evidence that may identify a type of language but not a unique individual proto-language. Nichols establishes the statistical threshold for individual-identifying evidence at one out of one hundred thousand. That is, the probability of a particular set of evidence appearing by chance in two or more languages should be less than one in one hundred thousand. This level is achieved by most of the evidence used for relatedness in Indo-European linguistics. Nichols (1996:49–52) gives four examples of such evidence, two grammatical and two lexical: the paradigm of *good* and *better* in English and its sister languages, the paradigm of gender marking in Indo-European languages, the word for ‘widow’, and the structured system of numbers. The word for ‘widow’ is individual identifying because the chance of a language having four consonants² reflecting the four PIE consonants *w, *y, *dh, and *w in that order is $.05 \times .05 \times .05 \times .05 = .000000625$, or less than one in one hundred thousand. In Sino-Tibetan we cannot achieve this level of probability with single words, due to the fact that the protolanguage was mono- or sesquisyllabic, and there is also the factor of borrowing, so we must depend on paradigm-like sets of words and grammatical forms. It is paradigmaticity in particular that helps us reach the individual-identifying threshold, as the probability for the set as a whole is determined by multiplying the probabilities of the individual forms and categories by each other. For example, the paradigm of *good* and *better* achieves a probability of occurrence of .000000125, less than one in one million (that is, each word has a probability of .0005, assuming twenty consonants and five vowels per language – $.05 \times .2 \times .05$ – but then because these two words form

2. Nichols assumes each language has twenty consonants, a worldwide average, so the probability of any one consonant out of the twenty appearing is .05.

a paradigm, these two probabilities are multiplied together and by the probability of the two forms being a paradigm: $.0005 \times .0005 \times .5$. In some cases, structured sets of vocabulary items can achieve the individual-identifying level, such as the set of basic numbers. The probability of having a set of numerals from “one” to “five” where the first two consonants form the pattern given in (1) is $.98 \times 10^{-13}$ (Nichols 1996: 52).

- (1)
- | | | |
|---|--------------------|------------------------------|
| 1 | y, n | $.05 \times .05 = .0025$ |
| 2 | d, w | $.05 \times .05 = .0025$ |
| 3 | t, r | $.05 \times .05 = .0025$ |
| 4 | k ^w , t | $.05 \times .05 = .0025$ |
| 5 | p, n | $.05 \times .05 = .0025$ |
| | | $.0025^5 = .000000000000098$ |

To use sets of lexical items as individual-identifying evidence, the set must be paradigmatically structured, and the entire set has to be attested in each language.³ Without this, lexical comparison cannot be used as evidence of relatedness among isolating languages:

Any claim of genetic relatedness among isolating languages that relies simply on lexical comparison – without (tonal or other) arbitrary lexical classification and without paradigmatic lexical sets attested as whole sets in each language – probably cannot be regarded as individual-identifying and thus as consistent with the comparative method, no matter how numerous the compared lexemes.
(Nichols 1996: 64)

Therefore, if we want to find solid individual-identifying evidence in Sino-Tibetan, we should look for paradigm-like sets or create sets of features. In Sino-Tibetan, many of the basic numerals have only a single consonant, and so the probability would be somewhat lower than the set of Indo-European numerals, and there is also the problem that a set of numbers like this is precisely something that could be borrowed as a set.⁴ Therefore we would need to use the numbers together with other features to create a set that as a set is individual identifying. For example, we might be able to use the numerals plus the voiced (or unaspirated) versus voiceless (or aspirated) opposition in initial consonants (as well as cognacy) marking intransitive versus transitive or simplex versus causative, the *s- causative prefix, the *-t transitivizing suffix, and the *-n and *-s

3. See Ikeda (2007) for an attempt at this using six words that are shared by all languages classified uncontroversially as Qiangic languages, and only those languages, as a set and the application of this set to the question of whether Tangut should or should not be considered a Qiangic language. That is a small set, but the results were interesting, and this method has also been used by Chirkova (2008) in discussing the affiliation of Shixing.

4. Aside from the possibility of borrowing, we also need to understand the phenomenon of parallel development. See for example LaPolla (1994, 1995).

formative suffixes if a survey of the languages showed each of these features did appear in all assumed (i.e. uncontroversial) major groups as a set of features; the set could then be used to determine whether a language (or language group) is or is not Sino-Tibetan.

Nichols's main goal in her paper is to set up a clear criterion for determining whether some feature is or is not useful in determining the relatedness of languages, and she provides examples to show how the evidence garnered to support the Nostratic hypothesis does not reach the standard of individual-identifying evidence. One question that comes up in the application of this criterion, given a piece of evidence (such as a grammatical subsystem) that reaches the individual-identifying threshold and a set of languages that are assumed to be related, is, "In how many daughter languages or branches must the system be attested in order for it to confirm genetic relatedness?" (Nichols 1996: 60). Nichols's answer to this question is the following:

If it is the sole individual-identifying evidence for relatedness, then obviously it must be firmly attested in EVERY daughter branch (at the highest level at which daughter branches can be identified and reconstructed). ... If it is not the sole evidence but simply one of several pieces, then its distribution among the daughter branches can be evaluated as a binomial distribution: ten out of twelve or nine out of ten is significant, six out of ten or three out of four is not, etc. ... Since most deep protolanguages will have only a few first- and second-order surviving daughter branches (Nichols 1990), in practice this means that unanimous firm attestation among the daughter branches must be required of each piece of individual-identifying evidence.

(Nichols 1996: 60–61; emphasis in original)

In this passage, Nichols is talking about the level of attestation required of a piece of individual-identifying evidence for it to be considered evidence of genetic relatedness. That is, if we find a particular individual-identifying set of features in all the recognized branches of a family, then that set can be used as a test for membership in the family. There is a second use, though, to which we can put this criterion. We can apply this same level of probability in determining whether some feature should be reconstructed to the deepest-level protolanguage or to some lower level of the family tree. That is, if we want to reconstruct some feature to Proto-Tibeto-Burman, given our minimum statistical threshold for individual-identifying evidence, we can easily decide whether the feature should or should not be reconstructed to the Proto-Tibeto-Burman (or Proto-Sino-Tibetan) level. For example, person marking in Tibeto-Burman only appears in about half of the branches of Tibeto-Burman and so does not reach the level required to be reconstructable to Proto-Tibeto-Burman (LaPolla 1992). If it is to be reconstructed at all, it would have to be at some lower node in the tree, the daughter branches of which would all have to attest a cognate pattern of person marking. Turning this around, we can then use this piece (or set) of individual-identifying evidence to identify a particular subgroup within Tibeto-Burman.

3. Tibeto-Burman

If we take the system of verbal suffixes related to the hierarchical person-marking system of Proto-Dulong-Rawang as an example,⁵ we can calculate the probability that another language will have the same system as follows. The Proto-Dulong-Rawang system has a first-person singular suffix **-ŋ*, a dual marking suffix **-si*, a first-person plural suffix **-i*, and a second person plural suffix **-n*. Assuming the other language has a person-marking system,⁶ the probability of finding exactly a velar nasal suffix for first-person singular marking and **-si* as a suffix for dual marking is $.05 \times .5 \times (.05 \times .2) = .00025$, or two in ten thousand.⁷ Add to this the second-person plural suffix, and we bring the probability down to $.000008975 (.05 \times (.05 \times .2) \times .05 \times .0359)$,⁸ or roughly nine in ten million. Adding the first-person plural suffix brings this down to $.000000195 (.05 \times (.05 \times .2) \times .05 \times .2 \times .0039)$, or one in one hundred million. Even assuming a somewhat higher probability because we assume that the Proto-Tibeto-Burman first-person pronoun was **ŋa* and the second-person pronoun was **na(ŋ)*, and that the person marking would derive from the free pronouns, this is still well within the individual-identifying range. That is, the probability of finding an unrelated language (and we should say “noncontiguous unrelated language” to minimize the possibility of borrowing) with this system is less than one million to one. One language that has been suggested but never proven to be related to Dulong-Rawang is the rGyalrong language of northwest Sichuan province of China (e.g. Chang & Chang 1975; Ebert 1987, 1990; Thurgood 1985a, 1985b; LaPolla 2003). If we compare the Proto-rGyalrong person-marking system, as reconstructed by Qu (1983), with that of Proto-Dulong-Rawang, we find that there is a close, but not exact, match (2).

(2)		1SG	2PL	DUAL	1PL
	Proto-rGyalrong	<i>*-ŋ</i>	<i>*-ñ</i>	<i>*-tsh</i>	<i>*-i</i>
	Proto-Dulong-Rawang	<i>*-ŋ</i>	<i>*-n</i>	<i>*-si</i>	<i>*-i</i>

5. The Dulong varieties are spoken in northwest Yunnan province, China, and the Rawang varieties are spoken across the border in Kachin State, Burma. See LaPolla (2010) for an explanation of the hierarchical person-marking system as manifested in Matwang Rawang.

6. This is actually a probability that should also be factored into the overall probability, but as we do not have a representative number of languages with which to calculate it, we will have to simply calculate assuming we are dealing only with languages that have person marking.

7. Using the same metric of an average of twenty consonants (.05) and five vowels (.2), we get (.05) for **-ŋ* and $(.05 \times .2)$ for **-si*, then we multiply this by (.5) because there are two items.

8. This is the chance of having the three forms code 1sg, 2sg, and dual, respectively $(.33 \times .33 \times .33)$. When we add in the 1pl marker below, the chances of the four forms coding exactly 1SG, 1PL, 2SG, and dual goes down to .0039).

Even when we factor in the similarity rather than exact match, the probability that we could get this sort of matchup in two noncontiguous languages by chance is still well within the individual-identifying range, and so we can be certain that Dulong-Rawang and rGyalrong are related at some level.⁹ But this is only a single piece of evidence. To be really certain of relatedness, we could expand the set of evidence by adding other, unrelated features to the set. One feature we can add to the set is the Dulong-Rawang reflexive/middle suffix **-si* (distinct from the dual suffix; LaPolla 2004), bringing the overall probability for having both the person-marking paradigm discussed earlier and the reflexive suffix **-si* down to .00000000016, or one in one hundred billion ($.05 \times (.05 \times .2) \times .05 \times .2 \times (.05 \times .2) \times .00032$). The actual number here is not as important as the fact that the probability of the two languages having such similar sets of morphology by chance is infinitesimal.

We know that the majority of Tibeto-Burman languages do not manifest this system, so it cannot be used as individual-identifying evidence for membership in the Tibeto-Burman family, but we can use it as very strong evidence of genetic relationship at some lower level. What I would like to suggest is that noncontiguous languages that can be shown to manifest this system must be considered a single genetic grouping distinct from groups that do not manifest it, because the odds of their sharing such a system by chance are infinitesimal.¹⁰ And there is no evidence that the languages that do not manifest the system had the system at one time and then lost it.

rGyalrong does not manifest the reflexive suffix **-si*, but there are Tibeto-Burman languages that manifest both the person-marking system and the reflexive suffix, such as the Kiranti languages of eastern and central Nepal and the Western Himalayan languages of Uttar Pradesh (Darma, Chaudangsi, Byansi, Rongpo, Raji) and Himachal Pradesh (Kinnauri) in Northeast India.

9. A side note on the Qiangic languages: I had at first hoped to show that the set of directional prefixes could be used as a major piece of individual-identifying evidence for the Qiangic languages, but the pattern of correspondences does not lend itself to reconstruction. I also tried to see whether Qiang and other languages in the group could be shown to be related to rGyalrong, based on the person marking, but could not find a sufficient pattern of correspondence. Much more work must be done on this group before anything conclusive can be said about it (see Chirkova 2012 for critical comments about the viability of this group).

10. An earlier version of this paper was presented at the 33rd International Conference on Sino-Tibetan Languages and Linguistics, Bangkok and Trang, October 2–6, 2000, and some of those who heard it felt the numbers were too high. However, even if one quibbled with the formulation of the exact number for the probability, it is clear that regardless of what that number might be, it will be well over one hundred thousand to one, and so the sets of features involved can be used as individual-identifying evidence, which is my point here.

In Dulong-Rawang (data from my own fieldwork), the pattern is relatively straightforward, except for the form of the second-person plural marker, where we have *-n*, *-juuŋ* and *-nuuŋ*. Because *-juuŋ* is a pronominal plural marker (*əŋ* ‘3SG pronoun’; *əŋ-juuŋ* ‘3PL pronoun’), and *-n* occurs by itself in some dialects, it seems the form *-nuuŋ* may be a fusion of an original second-person marker and a plural marker. For this reason, I have reconstructed **-n* for the 2PL marker (3).

(3)		1SG	1PL	2PL	DUAL	REFL
	Rawang (Matwang)	-ŋ	-i	-nuuŋ	-ci	-ci
	Rawang (Daru)	-ŋ	-i	-nuuŋ	-si	-si
	Dulong (1st township)	-ŋ	long vowel ¹¹	-juuŋ	-cuu	-cuu
	Dulong (3rd township)	-ŋ	-i	-n	-cuu	-cuu
	Dulong (4th township)	-ŋ	-i	-n	-cuu	-cuu
	Nujiang dialect	-ŋ	-	-ŋuuŋ	-cuu	-cuu
	Proto-Dulong-Rawang	*-ŋ	*-i	*-n	*-si¹²	*-si

Ebert gives the following description of the Kiranti verb:

The Kiranti finite verb is characterized by a complex system of person and number affixes. Some widespread Tibeto-Burman suffixes are well preserved in Kiranti: *-ŋa* first person singular, *-na* second person singular, *-i* first and second plural (the latter also *-nin*), *-u* third patient, *-ci*, *-si* dual. S[outh] E[ast] languages also have prefixes with parallels in other Tibeto-Burman languages, like *ke-*, *ta-*, *a-* for second person, *i-* for inverse, *i-*, *a-* for ‘marked scenarios’ (inverse configurations and second person participation). (Ebert 2003: 509)

A reconstruction for Proto-Kiranti is given in van Driem (1990). I add the example of Dumi (van Driem 1993), to show the pattern in an attested language (4).

(4)		1SG	1PL	2PL	DUAL	REFL
	Proto-Kiranti	*-ŋ	*-i	*-ni	*-ci	*-nsi
	(e.g. Dumi)	-ŋ	-i(inclusive)	-ini	-si	-(n)si

The last group is the Western Himalayan languages. The data in (5) are from S. R. Sharma (1994, 2003a, 2003b); Krishan (2003a, 2003b, 2003c); and D. D. Sharma (1988; see p. 150 on the reflexive/intransitivizer; the forms given here are for present tense agreement).

11. This vowel length has been shown to be a morphologization of what was originally just a phonetic lengthening of the root vowel when the suffix **-i* was added. That is, **-i* caused vowel lengthening in the root, which then became phonemized when the suffix was lost. See Luo & Yang 2007 for details.

12. **si* rather than **cuu* is reconstructed because it is easy to explain the changes from **s > c* and **i > u*, but it would be much harder to explain changes in the opposite direction. These changes can also be shown to have happened generally in the relevant varieties using comparative dialect evidence.

(5)		1SG	1PL	2PL	DUAL	REFL
	Kinnauri	-g	-č	-č/-ñ	-č/-ñ	-si
	Rongpo	-ŋ	-ni	-ni	-	-s
	Byangsi	-ō(yε)	nye	-ni	-ci	-ci
	Darma	-ō(yε)	-	-ni	-	-ci
	Chaudangsi	-ō(yε)	-	-ni	-	-ci
	Raji	-ō	-i (pl)	-i (pl)	-	-
	Manchad	-g	-ñi	-ñi	-shi	-
	Tinan	-g	-ñi	-ñi	-shi	-
	Proto-W. Himalayan	*-g/ŋ	*ni	*-ni	*-si	*si

Readers familiar with these languages are probably thinking to themselves, “Why didn’t he include the second-person singular suffix **-n*?” The answer is that we started with Dulong-Rawang, and Dulong-Rawang does not manifest the **-n* suffix for second-person singular, only for second-person plural, and we are looking at this from the point of view of the probability of other languages having the system found in Dulong-Rawang.

(6)		1SG	1PL	2PL	DUAL	REFL
	Proto-Dulong-Rawang	*-ŋ	*-i	*-n	*-si	*-si
	Proto-Kiranti	*-ŋ	*-i	*-ni	*-ci	*-nsi
	Proto-W. Himalayan	*-g/ŋ	*ni	*-ni	*-si	*si

The odds of achieving this close of a correspondence between unrelated noncontiguous languages is almost infinitesimal, but there is other evidence that we can add to this, to strengthen the argument. One feature that is shared among the three groups (although not attested in every language) is having a cognate word **ruŋ* that means both ‘sit’ and ‘live, dwell, (come to) be at’, for example, Rongpo (Western Himalayan) *huŋ* ‘to sit, to live, to be’; Belhare (Kiranti) *yuh* ‘sit; come to be at a place’; Dulong *rùŋ* ‘sit; live in a place’.

Another feature that might show a closer relationship among rGyalrong, Kiranti, and Dulong-Rawang than the three of these have with the Western Himalayan languages is the prefix that marks a situation in which one of the arguments is a speech-act participant, but the actor is not the speaker (in the quote from Ebert, quoted earlier, characterizes it as being “for ‘marked scenarios’ (inverse configurations and second person participation)”: for example, Situ rGyalrong *w(a)-* (Xiang 2008: 211), Caodeng rGyalrong *o-* (Sun & Shi 2002), Ribu rGyalrong *a-* (Xiang 2008: 211), Lavrung *a-* (Huang 2007: 69ff.; rGyalrong group); Rawang *è-*, Dulong *nə- ~ ε-* (Dulong-Rawang); and Khaling *i-*, Dumi *a-*, Bantawa *i-* (Ebert 2003; SE Kiranti). We don’t find clear cognacy of the vowel used for this marking, but its use is idiosyncratic enough that the likelihood of parallel development is rather low, and so *when used with other features as part of a set*, this feature can help us to identify a single parent language.

The point again is to take whatever features we choose to use together as a set, to get the level of probability of the set as a whole.

How do we explain these findings? I believe we must turn to the migrations as an explanation. As I discussed in LaPolla 2001 (see also LaPolla 2006), it seems there were two major routes of migration for the ancient “Qiang” or Tibeto-Burman speakers: one path went west into Tibet and then south, and the other went southwesterly down along the eastern edge of the Tibetan plateau and across Burma into Northeast India and then up into Nepal. This latter route is the one I believe the ancestors of the Dulong-Rawang, Kiranti, and Western Himalayan peoples took.¹³ Certain features developed in different groups as they separated at each point in the migrations, such as the innovation of the reflexive/middle marker after the split between rGyalrong and the rest of the languages and the innovation of the Kiranti first-person exclusive velar suffix in the pronouns and person marking (see LaPolla 2005); and, in the case of the Western Himalayan languages, some aspects of the system were simplified, such as with the loss of the “marked scenario” prefix. The point of all of this is that we need to keep in mind the fact that there has been wave after wave of migration, and we should not assume that all people in a particular area are necessarily related, even if they appear similar. Particularly for languages in known paths of migration, we must find clear evidence of relatedness.

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13. In LaPolla (2003, 2006), I argued that these languages form a higher-level grouping with rGyalrong, which I have called the “Rung” languages, because this grouping is similar to (but not identical with) a proposal by Thurgood (1985). Proto-Rung is argued to have split off from a higher-level grouping with Proto-Qiangic; then after this split, there were splits within Rung due to migrations down to the southwest and then west, forming the groupings known as Dulong-Rawang, Kiranti, and Western Himalayan, as some people stayed in a particular place while some continued westward. The development of the reflexive suffix **-si* would have been after the migrations of the speakers of what became Dulong-Rawang, Kiranti, and Western Himalayan from the rGyalrong area.

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