

CHEPANG - A SINO-TIBETAN LANGUAGE WITH A DUODECIMAL NUMERAL BASE ?

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In spite of the fact that all other known Sino-Tibetan languages have quinary, decimal or vigesimal numeral systems there is some evidence to suggest that Chepang, a Sino-Tibetan language spoken in Nepal, may originally have had a system with a duodecimal base. Martine Mazaudon first made this claim in a paper on 'Dzongkha Numerals', presented at the XVth International Conference on Sino-Tibetan Languages in 1982, using data that I had supplied in Caughley 1972 (also in Hale 1973). In view of the rarity of such a number base in Sino-Tibetan the question needs to be asked: How valid is the evidence supporting this claim for a duodecimal system?

Although today there appears to be no speaker who knows the Chepang numerals above 'five' (and I have investigated this over virtually the entire language area), there is some interesting evidence for a duodecimal system. This is based on the following facts:

1. For counting above three Chepang speakers normally use the decimally based Nepali system. However, in certain situations, (especially for tallying game such as birds and bats) counting is done by twelves, using a numerically unanalysable root *hale* for 'twelve'. I have recorded several instances of the use of this system, as for example: *yat hale sumjyo?* 'one dozen (plus) three' for 'fifteen'.
2. Along with this (perhaps even underlying it) is their use of the interstices of the fingers for making a tally. When counting the tip of the thumb is placed against each interstice in turn, starting from the base of the little finger and ending at the tip of the index finger. Since there are four fingers, each with three interstices, this means a total of twelve for each hand and makes 'twelve' a natural base for counting. If, as Mazaudon implies (Mazaudon 1982:12),

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Western Tibetan *khal* 'load, bushel, score' is a cognate, then the Chepang word for 'twelve' could conceivably have come from the idea of a 'full' or 'loaded' hand when the limit of fingers is reached (at twelve) in the tally. An alternative possibility is that the Chepang *hale* comes from *ha?* 'light (weight), empty' plus *le?* an emphatic affix, meaning 'the hand is empty' - that is, there are no fingers left to count on. This, however, is purely speculative and would require an accounting for the loss of glottal stop on both the root and the affix.

3. The most intriguing, but still inconclusive evidence, comes from a comparison of Hodgson's recording of Chepang numerals, made more than a century ago (Hodgson 1857), with another system regarded now by Chepang speakers as a mythological spirit system of counting. The present and past (Hodgson's) systems, together with the 'spirit' system, as originally recorded, are as follows:

	Present	Hodgson's	Spirit
one	<i>yat. (jyo?)</i>	<i>yā. (zho)</i>	<i>ya</i>
two	<i>nis</i>	<i>nhi</i>	<i>gi</i>
three	<i>sum</i>	<i>sum</i>	<i>sum</i>
four	<i>ləy</i>	<i>plōī</i>	<i>kləy</i>
five	<i>poŋa</i>	<i>pūma</i>	<i>poŋa</i>
six		<i>krūk</i>	<i>prek</i>
seven		<i>chānā</i>	<i>taguji</i>
eight		<i>prap</i>	<i>hlukum</i>
nine		<i>taku</i>	<i>trak</i>
ten		<i>gyib</i>	

At first sight, the 'spirit' system does not have much in common with the other two, especially above 'five'. Below 'five' the similarity between all three lists is close enough to suggest that the spirit system has at least some connection with real counting systems - it is not purely an independently created system.

The first breakthrough came when I realised that the third from last spirit number, *taguji* as I had recorded it, was actually a conflation of two numbers *tagu* 'seven' plus *ji* 'eight', *hlukum* then meaning 'nine'. Then I noticed that the spirit numbers for 'seven' (*tagu*) and 'eight' (*ji*) showed considerable resemblance to Hodgson's 'nine' (*taku*) and 'ten' (*gyib*). The last three spirit numbers, *hlukum*, *ji*, *trak*, therefore might originally have represented 'ten' 'eleven' and 'twelve', giving the following revised system (Proto-Tibeto-Burman numerals from Benedict (1972:93) are also included):

	Hodgson	Spirit		PTB
		(revised)	(unrevised)	
one	<i>yā</i>	<i>ya</i>	<i>ya</i>	<i>kat/it</i>
two	<i>nhi</i>	<i>gi</i>	<i>gi</i>	<i>g-nis</i>
three	<i>sum</i>	<i>sum</i>	<i>sum</i>	<i>g-sum</i>
four	<i>plōī</i>	<i>kləy</i>	<i>kləy</i>	<i>b-liy</i>
five	<i>pūma</i>	<i>poŋa</i>	<i>poŋa</i>	<i>b-ŋa</i>
six	<i>krūk</i>	-	<i>prek</i>	<i>d-ruk</i>
seven	<i>chānā</i>	-	<i>tagu</i>	<i>s-nis</i>
eight	<i>prap</i>	<i>prek</i>	<i>ji</i>	<i>b-r-gyat</i>
nine	<i>taku</i>	<i>tagu</i>	<i>hlukum</i>	<i>d-kuw</i>
ten	<i>gyib</i>	<i>ji</i>	<i>trak</i>	<i>gip</i>
eleven		<i>hlukum</i>		
twelve		<i>trak/(hale)</i>		

Note that this gives two competing forms for 'twelve' - *trak* and *hale*. Of these two, *trak* most likely belongs to the original number system, with *hale* being a secondary term relating, as mentioned above, to the completion of counting on one hand.

An alternative to the revised system given above would be that the spirit system *hlukum* 'nine' and *trak* 'ten' could have originally been the now missing 'six' and 'seven', displaced in position. The only point against this is that they do not resemble other Sino-Tibetan forms for these two numbers.

Evidence, then, for a unique duodecimal based numeral system in Chepang does exist, but it is tantalisingly incomplete. Unfortunately it may remain so unless a complete list of numbers from one to twelve can be found.

