

Issues in orthography development and reform¹

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Abstract

There are various competing and sometimes incompatible requirements for an orthography: phonological adequacy, simplicity, areal appropriateness and transfer to literacy in a national language, appropriate technology, sufficient materials and community ownership. In designing new orthographies, linguists and communities take these considerations into account. However, many successful orthographies do not meet many of these criteria.

Concerning phonological adequacy, many existing orthographies have problems in representing suprasegmentals such as tone, and some types of segments such as glottal stop. This does not prevent speakers from using them happily. Even in orthographies that have resources for representing tones, especially when diacritics are used, these are often omitted.

Concerning simplicity, it is assumed that most new orthographies will be alphabetic rather than logographic ('pictographic' or character-based systems) for reasons of simplicity but this is not necessarily so. In China a variety of orthographies have been developed or reformed using the character principle.

Although orthographies become archaic through time, an established literary tradition often prevents reform, and diglossia may eventually develop. This may produce barriers to literacy, especially for second language learners. There may also be competing literary traditions associated with particular religions or political entities. If transfer is considered essential, language groups who live in several different countries will not be able to have a single orthography that provides transfer to all the various national languages.

We sometimes forget that most of the languages still requiring new orthographies are spoken in communities without electricity, let alone computers with internet connections and the capacity for complex fonts. Materials development and dissemination must take account of available technology as well as community needs and motivation for learners.

Another thing we sometimes forget is that developing an orthography implies choice of a standard. How widely to use that standard is a sensitive issue and views on this may change through time.

The overriding principle should be that the community must be happy with and in control of its orthography. Orthography development or reform must NOT be undertaken lightly and should involve the entire speech community. Materials for teaching the orthography are essential and there should be a variety of things for people to read.

This paper presents several brief case studies from China and surrounding countries. One concerns Yi, which has a cluster of traditional logographic orthographies reformed in different ways during the 1970s and 1980s. The other is Lisu, a transnational minority (Bradley 1983) of China, Burma, Thailand and India with several competing scripts.

YI

The Yi are a composite national minority of 7.8 million in China, with very small numbers also in extreme northern Vietnam and Lao. As in the case of many other such nationalities in China, the degree of internal linguistic diversity is very great: there are six main language clusters with at least a hundred distinct groups speaking more or less mutually unintelligible speech varieties. Within four of these clusters, there are ancient literary traditions. These are the Nosu (Northern Yi), over 2.5 million, mainly in Sichuan but also in parts of northwestern Yunnan; the Nasu (Eastern Yi, over a million in northeastern Yunnan, western Guizhou and northwestern Guangxi); the Nisu (Southern Yi, over

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750,000 in south central Yunnan, extending into Vietnam); and the Sani (about 120,000 in Shilin and surrounding counties just southeast of Kunming in central Yunnan, part of what is called Southeastern Yi in China). For details of the distribution and linguistic classification of the Yi, see Bradley (2001).

These four orthographic systems are historically linked and Nosu, Nasu and Nisu in particular share many characters. Prior to 1950, the only literate people within these communities were traditional priests who learned the script from a father or uncle and inherited or recopied their manuscripts from him. These books were mainly for religious celebrations, divination, healing and keeping family genealogies. Another use was on graves and on ritual tablets for family altars. Among the Sani, but not the other groups, traditional romantic stories were also written down. The dissemination of these scripts was restricted to a small part of the community and within each family lineage individual differences in the form of characters developed: rotation of characters, addition or omission of strokes, completely new characters, elimination of characters and their replacement by full or partial homophones, and so on.

One striking difference between the Nosu characters and the other three systems is that the Nosu characters have been rotated 90 degrees clockwise, and were written from left to right. Nasu, Nisu and Sani characters, like Chinese until relatively recently, were written vertically from the top. Sani and Nisu books start at the top left, while Nasu books start at the top right, like Chinese, or sometimes at the top left. In materials published since 1950, all four scripts are written left to right starting at the top left, but the Nosu characters remain rotated compared to the others. Manuscript books continue to be written in the original way. Another feature of all Yi scripts is that there was very frequent use of characters representing full or near-homophones to represent words for which there was no character or in place of another less frequent character. This is particularly frequent for words homophonous apart from tone but also extends to words with similar initials, and sometimes even to words with similar vowels.

Nosu syllabic script

One of the most frequent paths away from a logographic system is to a syllabic system based on using a single existing character for all homophones, regardless of meaning. These originally character-derived syllabic symbols can later be modified and simplified, as in the case of the various stages and versions of Japanese **kana**. To maintain phonological adequacy, a syllabic system may need to be modified through time, just as an alphabetic system. This is an advantage of logographic systems: they do not require reform due to sound change and they do not necessarily require a single spoken standard.

Nosu has recently followed this syllabic path. In 1978 a syllabic system with 819 syllabic symbols and one diacritic for a sandhi tone was introduced and this has had official approval since 1980. This is based on the Shynra (in **pinyin** represented as Shengza) dialect as spoken in Xide County, the central area of Liangshan Prefecture in southern Sichuan, with about 1.5 million speakers out of the total of 2.5 million who speak some kind of Northern Yi. Each of the syllabic symbols is derived from one traditional character, which originally was used primarily with only one meaning. An amazing outpouring of work has been done in this writing system, including textbooks from primers up to university level, dictionaries, grammars, collections of traditional texts and stories, translations of material from Chinese and new original literature. Literacy is high in the core Nosu area, and the written language is widely used in public life, alongside Chinese. There is also a **pinyin** version of Nosu parallel to the syllabic script, with limited uses parallel to those of Chinese **pinyin**. Speakers of other varieties included within Northern Yi, such as northern Yinuo and Lindimu/Tianba and southern Suondi and Adur, must learn Shynra to become literate. This is not an easy task as Shynra is quite different from these speech varieties.

When Chinese sources discuss Yi orthography, they tend to refer only to this one script. It is indeed the most successful and the most widely used and is based on the Yi language with the largest number of speakers. In addition to Sichuan, it is used in northwestern Yunnan among Nosu speakers. Nosu leaders from Sichuan are attempting to have its use made general for all Yi, including those who

speaking languages that are much more different from Shynra than the other Northern Yi varieties. A meeting in Sichuan in 2001 agreed to implement this but no steps have been taken in that direction in Yunnan or Guizhou where the competing Yi orthographies discussed below are in use.

Other Yi scripts: Nasu, Nisu, Sani and Yunnan reformed

The Nasu are scattered in north central and northeastern Yunnan and in northwestern Guizhou. There are many named subvarieties. Their likely origin was the Eastern Cuan kingdom, centred at the northern end of Dian Lake at modern Kunming, still the capital of Yunnan. This area was conquered by the Bai of Nanzhao in the 9th century AD, and the Nasu have become widely dispersed since then. There were various later Nasu kingdoms, notably Wusa, Wumeng and Mangbu in northwestern Guizhou and some early Nasu inscriptions have been discovered on stone and on bronze bells, mostly in northeastern Yunnan. In Guizhou, where the Nasu are the only type of Yi, the authorities decided in the early 1980s to codify the traditional Nasu characters and introduce their wider use. Publication of teaching materials started in 1982, and the final version of the codified script was approved in 1985. This script follows the principle of Chinese characters: each character has a meaning, and is pronounced according to the local speech of each area. Materials recognise ten types of Nasu pronunciation, but the speech of Bijie and Dafang counties is listed first as the default. A large body of traditional Nasu materials, especially from Guizhou and also from Yunnan, has also been published by the Guizhou Nationalities Press.

The likely point of origin of the Nisu script is the Western Cuan dynasty, which was centred at the southern end of Dian Lake, near modern Jinning, up to the 9th century AD. The dissemination of this script, which has gone out of use in many Nisu areas, is now limited to scholarly and some traditional religious circles. Nevertheless, there has been very extensive recent publication, including an imminently forthcoming dictionary. Institutional support comes from local governments in the Nisu areas including Honghe Prefecture and Yuxi City. It is interesting to note that the internal differences within the Nisu script are somewhat less great than those within traditional Nasu or Nosu and more on the scale of those within the much smaller, more compact and less dialectally differentiated Sani community. This could be due to greater attempts at codification during the Western Cuan dynasty, less internal diversity in the origins of the remaining Nisu orthographic alternatives, or both.

Sani, despite its small speaker population and compact distribution, still shows considerable internal differences in its characters, in three main traditions: eastern (now known as Guishan from a place name in southeastern Shilin County and regarded as the ‘standard’ in China), northwestern (used around the Stone Forest) and southwestern, all in Shilin (formerly Lunan) County and extending a bit into adjacent counties. There are two codifications. One was done a hundred years ago by French Catholic missionary Paul Vial, based on a subvariety of southwestern Sani used around Luomeiyi town. The other, developed after 1950, was based on eastern Sani at Guishan as studied by Ma Xueliang and various Sani linguists. In addition, the Sani linguist Huang Jianming has extensively studied the orthography and other aspects of his own variety, another subtype of southwestern Sani. Other than this, most post-1950 publications including a dictionary and a large number of transcribed and translated texts such as the well-known Ashima story, is in the eastern Sani of Guishan. Comparison of the three traditions of Sani orthography shows very substantial internal similarities, but much greater difference from any of the written subtypes of Nasu all around Sani to the north or to Nisu further to the southwest. These differences may be due to the fact that Sani is not linguistically very close to the Nosu/Nasu/Nisu core of Northern Loloish (Bradley 1979), that the core population of the Sani group was probably transported from the area of Dali Prefecture as war captives a millennium or so ago and that they may have subsequently created their own writing on the model of the Nasu and Nisu scripts, but independently enough that a large proportion of characters are different. Sani makes very extensive use of characters for homophones and near-homophones. Indeed the 1984 dictionary attempts to regularise and extend this to restrict the number of characters, with only 10 per cent of syllables having more than one possible character. This constraint is not reflected in the manuscripts still used by Sani traditional priests which follow the individual characteristics of their own lineage of priests and may use a larger inventory of characters.

Given this diversity of scripts for the Yi of Yunnan Province, the authorities decided to create Yunnan Reformed Yi. It was intended for use by all Yi in Yunnan except for the Nosu, the Western and Central Yi groups which had no traditional writing systems, as well as for Nasu, Nisu and Sani; Nosu in Yunnan have been using the Nosu syllabary since the mid-1980s. A committee with representatives from each literary tradition worked from 1982 to 1985 to select 1,700 characters. By 1990 a further 500 were chosen, basically by majority rule, among the four scripts, but with some preference for Nasu whose users were somewhat overrepresented on the committee, some Nisu, fewer Sani, and very few Nosu characters. This script was approved during a conference in 1987 and implemented through publication of various textbooks and other materials starting in 1989. A computer font was introduced in 1997. It was taught from the late 1980s until 2001 at the Yunnan Institute of Nationalities and in special classes for Yi cadres in the early 1990s. The script was also introduced in schools in a number of areas and used for public signage and other symbolic uses, especially in Chuxiong Prefecture. In principle, as in the case of the Guizhou Nasu script, people were meant to use their own local pronunciation. However, the morphosyntax of written Yunnan Reformed Yi basically follows the Nasu of Luquan and Wuding counties and it was always taught at the Yunnan Institute of Nationalities with this type of Nasu as the default pronunciation. This striking instance of creating a completely new composite orthography from a number of existing alternatives, what Fishman (2000) has called *Einbau*, has not been very successful. Even its advocates have difficulty reading it and several members of the committee which created it now prefer to use their original scripts. It nevertheless remains the official approved script for Yi in Yunnan.

The traditional Yi systems were in limited use by a very small number of people and, in fact, the modern language policy in China has led to their much wider dissemination. This is particularly true for the Nosu syllabic system. However, due partly to the great differences between the reformed scripts and the traditional ones, many Yi scholars and nearly all Yi religious practitioners reject the new scripts. Since the Yunnan reformed Yi script has no natural constituency, being a composite created in the 1980s, it has been particularly susceptible to this rejection, and may go out of use eventually. The unreformed subtypes of Nosu, Nasu, Nisu and Sani may persist for some time yet; the 'standard' varieties of Guishan Sani, Luquan and Wuding County Nasu, and a more or less homogenised Nisu based mainly on Xiping and Shiping County forms are better documented and will probably continue in limited use. Of the new systems, the Nosu syllabic system and the Guizhou character system are much more successful.

LISU

The Lisu are a group of nearly 950,000 people, including about 650,000 in China, over 250,000 in Burma, 35,000 in Thailand and 1,200 in India. Since they live in several countries with very different national languages and orthographies, areal appropriateness and transfer to national languages could not be achieved while unifying the group with one writing system.

In fact, the earliest 'Lisu' orthography was created for Lipo, also sometimes known as Eastern Lisu, a distinct language spoken in north central Yunnan and extreme southern Sichuan in China by a separate population of about 300,000. This was a script derived from those developed for the Miao in Guizhou by Samuel Pollard starting in 1904 (Enwall 1996), sometimes said to be syllabic but actually alphabetic. It has large consonant symbols, some from the roman alphabet, some apparently derived from Pitman shorthand, and some others newly invented, and smaller symbols for vowels. The placement of the vowel symbol relative to the consonant symbol indicates the tone: in Lipo, above for high tone, top right for mid tone, middle right for rising tone and bottom right for low tone. A.G. Nicholls and G.E. Metcalf of the China Inland Mission, working at Sapushan north of Kunming, developed this Lipo script in about 1910. The first publication was in 1912. Lipo is a separate language not mutually intelligible with Lisu and the Pollard scripts are a separate tradition never used to represent Lisu itself, so the Pollard script will not be discussed further here; for more details see Bradley (forthcoming).

The first real Lisu orthography was also developed by missionaries; in this case, a China Inland Mission member from Scotland, J.O. Fraser, a Karen evangelist from Burma, Ba Thaw, and initially

an American Baptist missionary working in Burma, J.G. Geis. Firstly, during 1914 Fraser and Metcalf agreed that Lisu and Lipo required distinct writing systems. Fraser, Ba Thaw and Geis met in north Burma at Christmas 1914 to develop a common writing system for the Lisu, whom they were evangelising both in China and in Burma. After a preliminary version using the lower-case roman alphabet plus a few diacritics, used in a catechism, was published in Burma in 1915 by Ba Thaw, Ba Thaw went to China in 1916 and 1917 and by 1918 Fraser and Ba Thaw had devised the final version of what is now usually called the Fraser script, using solely roman capitals, upright and some inverted. As in many Indic scripts, there is an inherent vowel, in Lisu /â/, when a consonant is written without any other vowel. As in Burmese and Karen, tones are represented by postscript punctuation markings, though more consistently than in Burmese. Thus this is a blend of conventional romanisation, Burmese orthographic conventions, and the new idea of using inverted letters; for example, upright A represents /p/, and inverted B represents /pæ/. The use of inverted letters did not cause major printing problems when materials could be typeset from movable type, but naturally did require special typewriters, produced by welding the necessary inverted letters onto the lower-case half of the necessary keys. No Lisu linotype or other advanced printing technique superseding movable type was ever in use prior to the advent of computers and printing from camera-ready copy.

This orthography is now also called Old Lisu in China, by contrast with New Lisu, the 1950s romanisation designed for transfer to **pinyin**. The first publications using the Fraser script were Mark, published in Shanghai in 1921, and the first in a long series of combined catechism and primer, O a Oa Eb e /mâçç ÷içç miçç tæo™; ©Σ™; / ‘M I (spells) MI book’, published in Rangoon in 1922; the latter is still in print in various versions, in Burma, Thailand and China. This orthography has become the main vehicle of Lisu literary efforts, which now include many different versions and editions of the Scriptures, hymn books, commentaries as well as newspapers, magazines and so on. It is widely used among Christian Lisu, the majority of the Lisu in China and Burma, all in India and part of those in Thailand.

From 1923 Wa Renbo, a Lisu traditional priest in Weixi County in northwestern Yunnan in China, created a syllabic Lisu script. This used some Chinese characters, often not in their Chinese semantic or phonetic values, but mainly a large number of invented symbols. It did not have enough syllabic symbols for all possible syllables so in most cases, the same syllabic symbol is used to represent various distinct syllables with different tones and even with slightly different initial consonants or vowels. In this it is similar to the Yi logographic scripts although they have a larger inventory of symbols. This script did not spread and although some books have survived and recently been edited and published (Wa 1999), it has effectively gone out of use. As an indigenous Lisu writing system, it is always mentioned in the literature on the Lisu in China, since it had nothing to do with Christian missionaries.

The main competing Lisu script was devised in the mid to late 1950s by Chinese linguists working with Lisu colleagues, and, as noted above, is based on the principles of transfer to **pinyin**. As such, it fulfils the criterion of appropriateness and transfer to the national language for the Lisu in China, though of course not those elsewhere. This script went through various versions: firstly, in 1957, one which contained a few Cyrillic letters, during the period when Russian influence was still strong; secondly, in early 1958, one which represented Chinese loanwords in exactly their standard **pinyin** form; and finally, later in 1958, the final implemented version which represents Chinese loans in a somewhat more integrated Lisu form. This so-called New Lisu script was widely promoted and was the main medium of government publication and education in Lisu up to the early 1980s, when the Lisu local governments of Nujiang Prefecture and Weixi County decided to revert to the Old Lisu or Fraser script which Christians had continued to use in church. There is still some publication in New Lisu, mainly written by non-Christians, and the Yunnan University of Nationalities continues to teach exclusively ‘New Lisu’ in its Department of Minority Languages.

For a detailed discussion of the Fraser script, see Bradley (1979: 57-62). For a comparison of the Fraser and New Lisu scripts, see Bradley & Kane (1981). The following table shows the two systems. It should be noted that the Fraser script represents a newly-devised compromise speech variety, an

example of what Fishman (2000) calls *Einbau*; while the New script represents a simplified version of the speech of Fugong County in southern Nuijiang Prefecture, a subvariety of Northern Lisu. Fugong speech has no contrast of retroflex versus alveopalatal affricates and fricatives before /â/ as found in some other types of Lisu and distinguished in the Fraser script; however a series of retroflexes are used in the New script redundantly before the vowels /Ω u o/ and in some recent Chinese loans. The New script fails to distinguish /y/ versus /u/, /e/ versus /ø/ and /Σ/ versus /F/, which contrast in Fugong as elsewhere. Table 1 compares the two systems.

The most interesting and relevant difference is in the representation of tones. Fraser script uses postscript punctuation, while New Lisu uses postscript consonants to represent tone. However there is a very strong and highly variable tendency to omit tone marking when writing the Fraser script. (For a fuller discussion, see Bradley, Hope & Fish forthcoming.) Even in New Lisu, the final *-x* representing the mid creaky tone is very often omitted. One important principle, which designers of orthographies should keep in mind, is that the use of diacritics for tones makes them less equal than segments and speakers will often omit them.

This tendency to omit tone marking in the Fraser script shows a great deal of individual difference within Lisu; some people try to omit as much as possible, others try to write them all or nearly all. Even in highly formal written contexts such as published Scriptures, most of the tone marking can be omitted. For example, in the four most recent editions of the New Testament from 1978 onward, John 1: 1-5 has 88.9, 87.2, 84.4 and 82.1 per cent of tones omitted; in most cases the tones actually marked in each edition are slightly different. In private letters, depending on the writer, omission can be even greater. One letter which I received recently has 96.6 per cent of the tones omitted, but this is extreme. This omission of tone marking was normal from the very beginning: the 1921 catechism has no tones at all marked in its title!

Due to the difficulty of using the Fraser script in email and the desire to have a writing system which can use something other than capital letters, a reform of the Fraser script have recently been proposed (Morse & Tehan 2000). The proposed move to ‘advanced Lisu’ is in a series of five steps, the first of which is to have digraphs in place of the inverted letters, and the last of which is to change the tone marking from postscript punctuation to postscript consonants. Alas, the proposal suggests different postscript consonants from the perfectly adequate New Lisu system, and introduces some wrinkles based on internal peculiarities of Fraser Lisu; the use of postscript *-x* to indicate the declarative postposition /÷âçç/, for example, and the possibility of writing the vowel /â/ as *a* instead of leaving it as the inherent vowel. While various stages of this ‘advanced’ Fraser script are used by some Lisu, mainly for email, and a couple of primers and some Scripture portions have been published in it, this does not appear to be replacing the traditional Fraser script.

Overall, then, there are three main Lisu orthographic traditions: Fraser (with its initial and recent ‘advanced’ forms), Wa Renpo and New Lisu (with its initial alternative forms). Apart from its minor inadequacies in representing vowels, New Lisu fulfils most of the criteria for a good orthography: it provides for transfer to standard Chinese, the national language of the country where two-thirds of the Lisu live; it represents tones in a way which is not likely to lead to their omission and it uses normal alphabetic letters and so causes no font problems. However it is based on one northern variety and is associated with post-1950 developments in China, has some problems of phonological adequacy, and has been rejected by most literate Lisu. Fraser Lisu does not provide transfer to anything, other than learning the capital letter versions of most of the roman alphabet – sometimes in odd values, such as *F* for /ts/. It deals with tones in a way that has led to extreme variation in their omission. Using punctuation for tones requires the use of other devices for punctuation, and using only capital letters necessitates a special convention for proper names. Inverted capital letters have caused problems from the beginning, initially with typewriters, then with printing once movable type was superseded, and now with email. Nevertheless, Fraser script is what literate Lisu people prefer, and it now has been in use for nearly 90 years.

What this shows us is that linguists cannot and should not try to force a community to reform or replace an existing orthography. Moves in this direction may divide the community and would require a major effort, beyond the means of many small communities, to convert and republish all necessary existing materials. A community, and especially its elite, can become attached to an orthography, no matter what problems it may have. The Chinese experiment with New Lisu from the 1950s onward illustrates this clearly. On the other hand, the Fraser script is associated with Christianity, and so most non-Christian Lisu have very ambivalent feelings about it. At least in China, non-Christians still have the resource of New Lisu available. There is much more of a problem in Thailand, where Christianity among the Lisu is a post-1970 phenomenon, and acquiring literacy in Lisu is closely associated with conversion.

One continuing problem for the Lisu orthography is a lack of non-Christian materials to read. In China this has been overcome through the efforts of the Yunnan Nationalities Press which has been printing all kinds of books in Lisu since the late 1950s. Up to 1983 this was mainly in New Lisu, but also in Old Lisu from 1978 onward. Another technical problem is the lack of an agreed standard computer font for Lisu, and the recent rejection of a proposal for a Unicode for Lisu. Unlike some of the reformed Yi scripts, there has not been a problem of acceptance of the literary standard, even though it is artificial.

Conclusion

In summary, the two case studies presented show that the ideal principles that we aim at for orthographies can be violated in a successful system. Almost anything goes!

The phonological adequacy of extended logographic systems like most of the traditional Yi scripts is fairly loose, as characters are frequently used for near-homophones, ignoring tonal and even segmental differences. Indeed, these systems actually exploit phonological similarity to avoid multiplying characters. This is even more extensive in the Wa Renpo syllabic system for Lisu. Another frequent problem is that in alphabetic systems using diacritics for tone, such as Fraser Lisu, these diacritics are very often omitted.

We can hardly speak of simplicity or appropriate technology in independent logographic systems with thousands of characters like the Yi ones, or the Fraser script for Lisu which uses inverted roman capitals. The Pollard systems for Lipo and other languages of southwestern China present an even greater challenge, being basically alphabetic but almost completely non-roman, and with their iconic way of representing tones by placing the vowel in different places relative to the consonant, which also made printing fiendishly difficult.

In a way, the move from logographic to syllabic systems, as in the case of the Nosu or Northern Yi in the 1970s, is a major simplification and formalisation of the traditional use of Yi characters to represent homophones. It is also a step in the direction of phonological adequacy, since in such a system it is only exact full homophones which are written alike. However this carries another kind of problem—the imposition of a standard with a standard pronunciation and its further development through *Ausbau* in preference to other varieties.

The issue of choice of standard can also be approached in a more creative way. Firstly, for Yi in Guizhou, as we have seen, the logographic system permits the same characters to be pronounced according to any local speech variety's own phonology – as indeed can Chinese characters. For Fraser Lisu and for Yunnan Yi, a more inclusive *Einbau* approach was taken, creating a new literary variety not based on any existing standard. In the case of Lisu, this has worked remarkably well, re-unifying the speech community in the face of developing dialect differences which were leading toward mutual unintelligibility. In the case of Yunnan Yi, success is less certain.

Areal appropriateness in fact might argue in favour of a logographic system for languages of China such as Yi, but not a system so different from Chinese itself. However the Yi leaders and intellectuals have remained very strongly attached to their scripts, rejecting all attempts to replace them with

romanisations after 1950. Unlike the Yi systems, early fully logographic versions of Japanese, Korean, Vietnamese and Zhuang among other scripts used Chinese characters and a few added characters formed on the same principles, so the transfer could also be very high, unlike for Yi.

Technology is a tool which has very valuable uses but we must not assume that everyone has internet access and computers with unlimited memory, font and other capacity. While fonts have been created for the various Yi and Lisu scripts, there is no single standard, their dissemination and use is quite limited, and almost no one can use them for email. Furthermore, apart from the syllabic version of Nosu, none have a Unicode standard.

Materials for the speech community can be created internally but most people naturally have other higher priorities, such as economic security, health, and educational and social advancement within their nation state. This is one area where technology and outside assistance can be very helpful: a small group within a community, given training and resources, can rapidly produce and thereby preserve collections of traditional or new stories, songs and other literature.

The speech community owns its language and has every right to control its orthography. If there is no existing writing system, or if the community as a whole agrees that a reformed or completely new system is necessary, then of course linguists working with them should make suggestions following the principles discussed here. But an existing writing system, no matter how problematic it may seem to an outsider linguist, can be perfectly adequate for the needs of a community.

References

- Anonymous. 1922. O a Oa Eb e [M I spells MI book]. Rangoon: American Baptist Mission Press.
- Ba Thaw. 1915. *Wu-s t'o-r'—e kw n nyi —â m ba p'o ga —â m jy-k'a (Catechism in Lisu)*. Rangoon: American Baptist Mission Press.
- Bradley, D. 1979. *Proto-Loloish*. London and Malmö: Curzon Press.
- _____. 1983 Identity: the persistence of minority groups. In J. McKinnon & W. Bhruksasri (eds) *Highlanders of Thailand*, 46-55. Kuala Lumpur: Oxford University Press.
- _____. 2001. Language policy for the Yi. In S. Harrell (ed.) *Perspectives on the Yi of Southwest China*, 195-213. Berkeley: University of California Press.
- _____. Forthcoming. *Lipo Dictionary*.
- Bradley, D., with E.R. Hope & J. Fish. Forthcoming. *Southern Lisu Dictionary*.
- Bradley, D. & D. Kane. 1981. Lisu orthographies. *Working Papers in Linguistics, University of Melbourne* 7: 23-38.
- Enwall, J. 1996. *A Myth Become Reality: History and development of the Miao written language*. 2 v. Stockholm: Institute of Oriental Languages, University of Stockholm.
- Fishman, J.A. 2000. Why English will not be the only language in the world. Plenary lecture at Australian Linguistic Institute, Melbourne.
- Morse, D.L. & T.M. Tehan. 2000. How do you write Lisu? In N. Ostler & B. Rudes (eds) *Endangered Languages and Literacy*, 53-62. Proceedings of the Fourth FEL Conference, University of North Carolina, Charlotte, 21-24 September 2000. Bath: Foundation for Endangered Languages.
- Wa Renbo. 1999. Guang Naba, Mu Yuzhang & Xu Hongde (eds), *Jitian Guge (Ancient Songs of Heavenly Worship)*. 2 v. Kunming: Yunnan Nationalities Press.

Table 1: Fraser and New Lisu Orthographies

Fraser					New					IPA								
A	D	M	J	J\ G]	b	d	z	zh	j	g	(Ø)	p	t	ts	tʰ	t°	k	÷
B	E	N	K	K\ H	p	t	c	ch	q	k	pæ	tæ	tsæ	tʰæ	t°æ	kæ		
@	C	L	I	I\ F	bb	dd	zz	rr	jj	gg	b	d	dz	dʰ	d°	g		
Y		R	[[\ W	f		s	sh	x	h	f		s	ʰ	°	x		
Z		T	S	\ g	v/w	ss	r	y	e-	v	z	ʰ	j	°	~h			
O	P		P\ U	V	m	n		ni	ng	h-n	m	n		—	≥	~h		
	Q					l						l						
a	d	d	e	c	i	u	i	e	u	i	y	Ω	Σ	u				
—	`		f	b	ei	ei		e	o	e	ø		F	o				
^			(Ø)		ai			a		æ			å					

Tones	Fraser	New	pitch/phonation
Tone 1	.	-l	55
Tone 2	,	-q	35
Tone 3	..	(Ø)	44, creaky
Tone 4	.,	-x	33
Tone 5	:	-t	21
Tone 6	;	-r	21, final glottal stop