A MATTER OF TYPOLOGY: ALPHASYLLABARIES AND ABUGIDAS

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> The typology of writing systems includes such well known cate-
> gories as the alphabet (e.g., that of English), the syllabary (e.g., Japa-
> nese *kana*), and the logosyllabary (such as Chinese characters). An ad-
> ditional type, exemplified by writing systems of India and Ethiopia,
> shows features of both the alphabet and the syllabary; it has sometimes
> been called an alphasyllabary, sometimes an abugida (borrowing an
> Ethiopic term). These types can be distinguished in several Asian writ-
> ing systems, depending on whether priority is given to the presence of
> an inherent vowel or to the graphic arrangement of symbols.

The writing systems of Asia can be classified into various types, such as the
LOGOSYLLABARY of Chinese, the SYLLABARY represented by Japanese kana, and
the ALPHABET represented by Korean han'gŭl. However, as has been pointed out
by McCawley 1997, these typological categories need not be mutually exclusive.
Thus the Korean alphabet also resembles a syllabary, in that the arrangement of
the alphabetic symbols corresponds to syllable-sized units, but Korean has also
been called a FEATURAL system, in that the shape of the alphabetic symbols re-
flects their analysis in terms of phonological features.

Table 1. Sample of the Devanagari script

Consonants:		क	ख	ग	घ	च	छ	ज
		k	kh	g	gh	c	ch	j
Vowels:	अ	आ	इ	ई	उ	ऊ	ए	ऐ
	a	ā	i	ɪ	u	ū	e	ai
C+V:	क	का	कि	की	कु	कू	के	कै
	ka	kā	ki	kɪ	ku	kū	ke	kai
Syllable-final C:	छ, क्क	kk		क	k# (final)			

In South and Southeast Asia, many of the major writing systems share a characteristic that has caused them to be called alphabets by some writers, but syllabaries by others. The systems involved are those descended from the Brahmi script used in the Buddhist inscriptions of the Indian Emperor Ashoka, in the 3rd century BCE (Salomon 1996). In modern times, these include scripts such as Devanagari (used for Sanskrit, Hindi, and Marathi) and other scripts of South Asia such as Gurmukhi (used for Panjabi), Gujarati, Bengali, Oriya, Tamil, Telugu, Kannada, Malayalam, and also Sinhala (of Sri Lanka). Related systems are the scripts of Tibetan and of Southeast Asian languages such as Burmese, Thai, Lao, and Cambodian, as well as scripts used for regional languages of Indonesia and the Philippines (Court 1996, Kuipers & McDermott 1996).

The ambivalent nature of these scripts can be illustrated from the Devanagari script, as shown in Table 1 (cf. Bright 1996). Like alphabets, this script distinguishes two types of symbols, consonants and vowels. But each vowel symbol has two shapes; one of these, the 'independent' vowel symbol, is used principally in initial position. By contrast, a spoken sequence of consonant + vowel is written with a consonant symbol to which the vowel is added in what l call a 'diacritic' form, i.e., one which departs from the linear succession of the basic symbols, namely the consonants. In European scripts, most diacritic symbols are written above or below basic letters (as in é, è, ç); but in the South Asian scripts, depending on the vowel, a diacritic may occur as a satellite appearing above, below, leftward, or rightward of a consonant. In some scripts, a vowel is even written with a combination of diacritics on two sides, e.g., in Tamil and Burmese (see Table 2).[1]

Table 2. Multiple diacritics

Tamil:	ka	க	kā	கா	ke	கெ	ko	கொ
Burmese:	ka	က	ki	ကိ	ku	ကု	kou	ကို

Two other features of Devanagari should be noted: First, the spoken vowel short *a* is considered 'inherent' in each consonant symbol, as can be seen in Tables 1–2 from the fact that the symbol for the consonant *k* also represents the sequence *ka*. Another way to describe this is to say that, after a consonant, the symbol for *a* has a 'zero' alternant. Second, to represent a syllable-final consonant, a consonant symbol is either written in a 'conjunct' form (typically reduced in size), or else with a diacritic beneath it which 'kills' the inherent vowel *a*.

The basic linear unit in this type of writing system is referred to in Sanskrit as an *akṣara* — what McCawley 1997 has called a 'graphic syllable'. This most often consists of a consonant symbol with inherent vowel *(ka)* or attached diacritic vowel *(ku),* but it may also be an independent vowel symbol (like *u*), or a conjunct consonant plus a vowel *(kla, klu),* or a consonant symbol with 'killed' inherent vowel *(k)*. The term *akṣara* is usually translated as 'syllable', but note that it does not necessarily correspond to a syllable of speech; a sequence like

akka would consist in writing of two *akṣara*s, *a* plus *kka,* but the pronunciation would probably be analysed in terms of the syllables /ak/ + /ka/. Nevertheless, the number of written akṣaras in a Sanskrit word usually corresponds to the number of spoken syllables.

The Indic writing system has, then, frequently been referred to as a sylla-bary. However, it is clear that it has a different structure from that of well-known syllabaries such as Japanese *kana* or the Cherokee writing system invented by Sequoyah. Combinations of Indic *k* + vowel all have the graphic element *k* in common; but as seen in Table 3, such combinations in *kana* or in Cherokee show no shared elements. This fact makes the term 'syllabary' unsatisfactory for de-scribing the Indic script.

Table 3. Typical syllabaries

	ka	ki	ku	ke	ko
Japanese	力	メ	ク	ケ	コ
Cherokee	Ƽ	ゾ	J	ト	A

The Indic system has also been referred to with the term 'alphabet'. This, of course, is the word normally applied to writing systems in which consonants and vowels have equal prominence in the sequence of symbols. But the term seems inappropriate for the Indic type of script, where the vowel *a* is typically inherent in a consonant symbol, while other vowels have reduced 'diacritic' shape — which, when placed on the left side of a consonant (cf. *ki* and *ke* above) may even depart from the left-to-right linear order of symbols. As it happens, a writing system of a similar type is used for the languages of Ethiopia, although it is of more recent origin there (Getatchew 1996). A new term seems needed to describe this type of script. Since such systems have something in common both with al-phabets (independent writing of at least some phonological segments) and with syllabaries (recognition of the CV unit), it has been called a 'neosyllabary' (Février 1959), a 'pseudo-alphabet' (Householder 1959), a 'semisyllabary' (Dirin-ger 1968), and a 'syllabic alphabet' (Coulmas 1996:229). Among South Asian specialists, it is now often referred to as an 'alphasyllabary' (Salomon 1996:376, Bright 1996:384) — not to suggest that it is a type of syllabary, or some kind of hybrid, but only that it shares some features of both alphabets and syllabaries.

In the typology of writing systems presented by Daniels (1996a:4), a differ-ent terminology is proposed. Alongside the familiar term 'alphabet', used for a system in which consonants and vowels have equal treatment, he offers the term *abjad* for a system in which the characters denote only or primarily consonants, as in the writing of Hebrew or Arabic; vowels are indicated optionally or occa-sionally by 'points', i.e., diacritic-like symbols above and below the consonants. (As the term 'alphabet' is derived from Greek, in which the sequence of symbols begins with 'alpha, beta', so 'abjad' is based on Arabic, in which that sequence begins with symbols corresponding to A, B, J, D.) In addition, Daniels offers the

term *abugida* for the Indic/Ethiopic type of script, in which 'each character de- notes a consonant accompanied by a specific vowel [i.e., the inherent vowel], and the other vowels are denoted by a consistent modification of the consonant sym- bols.' This term is based on the first four consonants and the first four vowels in a traditional Ethiopic order (used in certain religious contexts; Getatchew 1996:570).

In the reference volume *The World's Writing Systems,* co-edited by Daniels & Bright 1996, the term 'alphasyllabary' is used in the chapters for which I was responsible, and 'abugida' in those for which Daniels was responsible. My posi- tion was that, although I recognized the aptness of Daniels's term, I felt a new term was unnecessary, since 'alphasyllabary' was familiar in the South Asian field. However, the following commentary was provided by Daniels (1996a:4, fn.):

> Bright's *alphasyllabary* ... is apparently not intended as an equiva- lent of these functional terms [alphabet, abjad, abugida], but refers to the formal property of denoting vowels by marks that are not of the same status as consonants, and do not occur in a linear order corre- sponding to the temporal order of utterance.

I understand, then, that Daniels prefers a typology based on the 'functional' cri- terion of correspondence between sound and symbol, in particular the impor- tance of the 'inherent' vowel and its replacement by other vowel symbols. But my own preference, which he calls 'formal', is for a typology which gives more attention to the graphic arrangement of symbols. For this purpose, I accept the terms 'alphabet' and 'abjad' as Daniels defines them; but in defining the al- phasyllabary, I focus on the predominantly 'diacritic' status of the vowel sym- bols. It is understandable that some reviewers of the book have found the use of 'abugida' and 'alphasyllabary' to be problematic, as well as the related use of the term 'diacritic' (Segert 1996:408, Anderson 1997:307, Sproat 1998:130).[2]

To evaluate the alternative criteria employed by Daniels and myself, it may be useful to look at some other, less well-known writing systems of Asia. One of these is the 'Phags-pa script, developed by a Tibetan monk in the 13th century on the order of Kubla Khan, the emperor of China. The plan was to have an offi- cial script which would be used for all the major languages of the Chinese empire, including Tibetan, Uyghur, Mongolian, and Chinese. (As we know, the plan was not successfully implemented, but some texts have survived in the 'Phags-pa script, especially in the Mongolian language.) The monk modeled his script after the Tibetan alphasyllabary, but he designed it to be written vertically, after the Chinese custom; and he invented new symbols for certain sounds which did not exist in Tibetan, but did occur in Chinese and Mongolian (van der Kuijp 1996:437-40). The inherent vowel *a* of the Indic scripts and of Tibetan is retained in 'Phags-pa. (Some scholars think that King Sejong of Korea, the inventor of the han'gŭl script, was inspired by 'Phags-pa, but this view is not usually accepted in Korea; cf. Kim-Renaud 1997, Ledyard 1998.)

Other writing systems besides 'Phags-pa have adapted the model of Indic script for writing non-Indic languages in vertical columns, e.g., Lepcha in Sikkim (India), and Hanunóo in the Philippines. This seems to me a relatively superficial change, not crucial to the typology of the scripts concerned. However, the 'Phags-pa script makes an additional change: The vowel symbols which are 'diacritics' in Tibetan — above, below, or alongside the consonant symbols — come to have a single uniform position, following (i.e., beneath) the consonant with which they are associated. This can be illustrated by the Tibetan word *rdo-rje* 'diamond', written in Tibetan script and in 'Phags-pa as shown in Figure 1.[3]

Tibetan: The consonant cluster *rd* is written as a conjunct

The combination with *o* is written as

The cluster *ŋ* is written as a conjunct

The combination with *e* is written as

The entire word is written as

'Phags-pa: The cluster *rd* is written as a conjunct

The combination with *o* is written as

The cluster *ŋ* is written as a conjunct

The combination with *e* is written as

The entire word is written as

Figure 1. Tibetan and 'Phags-pa writings of *rdo-rje* 'diamond'

How is 'Phags-pa to be classified? By Daniels's definitions, since there is an inherent vowel *a*, and other vowels are written with consistent modifications of the consonant symbols, this script should be an abugida. However, the overt vowel symbols have become uniform linear symbols, and for this reason I would consider 'Phags-pa an alphabet — although an unusual one in that the vowel *a* is represented as zero. (Note that there are no initial vowels in Tibetan script, but glottal stop is a common initial consonant.)

Another writing system which may be hard to classify is the Pollard Script, which was invented early in the 20th century for the tonal Hmong languages of southern China, by Samuel Pollard, a Methodist missionary (Daniels 1996b:580). In this script, consonants are represented by 'big letters', vowels by diacritics, and tone by the position of the diacritic relative to the consonant; see the sample in Table 4.

Table 4. Sample of Pollard Script

⎤̌	kú
⎤ˇ	kŭ
⎤˅	kū
⎤˅	kù

Since the Pollard script has separate symbols for consonants and vowels, and has no INHERENT vowel, this is an alphabet, not an abugida, by Daniels's definitions (p.c.); but since vowels and tones are written with 'diacritic', nonlinear symbols, I myself would classify it as an alphasyllabary. It is interesting to compare another missionary script of southern China, invented around 1915 by J. O. Fraser for Lisu, another tonal language (Daniels 1996b:581). In this system, consonants and vowels are written with letters of the same size (many borrowed from the roman alphabet); tone is written after each syllable by symbols resembling European punctuation marks (see the sample in Table 5). Both Daniels and I would call this an alphabet. Although the tone symbols are smaller than those for the consonants and vowels, I would not consider them 'diacritics', since they occur in a uniform linear order.

Table 5. Sample of Fraser script

PA.	pá (high tone)
PA,	pã (mid rising)
PA.,	pà (mid tone)
PA..	pā (mid tense tone)
PA:	pà (low tone)
PA;	pa (low tense tone)

An even more unusual script is Pahawh Hmong, a system invented between 1959 and 1971 for the Hmong language, as spoken in Laos, by Shong Lue Yang, a native speaker without formal education (Smalley et al. 1990, Ratliff 1996).

Table 6. Sample of Pahawh Hmong (all syllables with mid level tone)

	v	s	l
a	va U̇ᴄ	sa U̇ᴀ	la U̇ɯ
i	vi Ȧᴄ	si Ȧᴀ	li Ȧɯ
u	vu Ṅᴄ	su ṄA	lu Ṅɯ

In pronunciation, each syllable consists of a consonant, a following vowel, and a tone; but in the script (written from left to right), it is represented by a symbol representing the 'rime' (the combination of vowel and tone), followed by a symbol representing the initial consonant. Furthermore, a consonant symbol by itself im-

plies an inherent vowel (but it is the diphthong *au,* not *a*!), and a vowel symbol by itself implies an inherent consonant (namely *k*). For a sample, see Table 6.

Because of the inherent vowel, Daniels (p.c.) classes this as an abugida. My own preference is to call it an alphasyllabary of an unusual sort: the symbols for rimes can be considered diacritics which always occur on the LEFTHAND side of the associated consonant (like some of the vowel symbols in the South Asian scripts). This view mitigates the paradox of saying that, although Pahawh Hmong is read from left to right, the elements within the syllable are read from right to left. Rather, we can say that the script is read from left to right in terms of its basic units, the consonants; but that these are 'modified' by the leftward diacritics that represent the rimes.

In fact, another Hmong script, also invented by a native speaker — called the Sayaboury script after its place of origin — has very recently been reported by Smalley & Wimuttikosol 1998. This script is clearly an alphabet, with uniform signs for initial consonant, vowel, and tone of each syllable (in left-to-right order); it may indeed have been inspired by a widely used roman script for Hmong, in which tone is indicated by a distinctive letter at the end of each syllable. But the Sayaboury script is unusual in one respect: Each of the 13 vocalic nuclei of the language (including diphthongs) is written with a digraph, i.e., with an arbitrary combination of two symbols. However, the individual symbols only occur in these combinations, never in isolation. Sample combinations of vowels and tones are shown in Table 7.

Table 7. Hmong vowels and tones in the Sayaboury script

	a	i	e
high tone	á 𝜛𝜆ǀ	í 𝜛 𝜛ǀ	é ⲅⲅ̸ǀ
falling	â 𝜛𝜆Υ	î 𝜛𝜛Υ	ê ⲅⲅΥ
low tone	à 𝜛𝜆Ⱶ	ì 𝜛𝜛Ⱶ	è ⲅⲅⱵ

There are rumors of other locally invented scripts in Southeast Asia (Gérard Diffloth, p.c.) — an area with a strong tradition that every language should have its own writing system. When and if such other scripts come to light, we may be obliged to reconsider still further our typologies of the world's writing systems. But of course such classifications are not an end in themselves; they can only be justified by whatever insights they may give us into more general questions, such as these: What inventory of structural features — lexical or phonological, functional or formal — is possible in human writing systems? How may such features be combined with one another, as Korean han'gŭl combines alphabetic, syllabic, and featural characteristics? What typical changes can be traced in the historic evolution of scripts, and in their borrowing by one people from another? What are the psycholinguistic implications of different types of scripts for acquiring literacy, and for reading or writing efficiently, in languages with diverse types of morphological and phonological structures? What can our understanding of dif-

ferent scripts contribute to the practical problems of script design for preliterate communities? At this point, the theoretical concerns of grammatology and the practical concerns of promoting literacy come under a single roof.

NOTES

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¹ A diacritic is typically understood as 'a mark added to a character to indicate a modified pronunciation' (Daniels & Bright 1996:xli) or 'a mark added to a basic letter to alter its pronunciation' (Coulmas 1996:126). However, these definitions do not incorporate the idea of departing from the 'succession of the basic symbols,' which now seems to me important. Thus, when the German umlauted vowels are written *ae, oe, ue,* I would consider them as digraphs; but when they are written *ä, ö, ü,* I would regard them as using diacritics.

² As Daniels has reminded me (p.c.), West Asian scripts like Arabic and Hebrew are sometimes written in 'fully pointed' form, with all vowels spelled out, e.g., for the use of beginning students. I would regard such usage as alphasyllabic, but Daniels would call it alphabetic (and presumably would not consider the 'points' to be diacritics in this case).

³ Each 'graphic syllable' of Tibetan is written with a dot at the righthand shoulder.

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