Kansas Working Papers in Linguistics

edited by

Mary Sarah Linn
Giulia R. M. Oliverio

Partial funding for this journal is provided by the Graduate Student Council through the Student Activity Fee.

Volume 17, Number 1
1992

Reprinted December 1992

Kansas Working Papers in Linguistics
Volume 17, Number 1
1992

THE BRAHMI FAMILY OF SCRIPTS AND HANGUL: Alphabets or Syllabaries?

Christopher Wilhelm

ABSTRACT: A great deal of disagreement exists as to whether the writing systems of the Brahmi family of scripts and the Hangul script of Korea should be classified as alphabets or syllabaries. In fact, each system exhibits a significant amount of characteristics of both types, and neither label entirely does either of them justice.

Linguists studying the writing systems of the world have traditionally classified them according to three categories, those of logographic, syllabic, and alphabetic scripts. The Brahmi writing systems found throughout the Indian subcontinent and Southeast Asia as well as the Korean Hangul script, however, both defy classification. The two have in common a mixture of syllabic and alphabetic characteristics that has spawned vigorous disagreement among the scholars discussing them. For example, Lambert (1953) refers to the Devanagari script used to write Sanskrit and its daughter languages as a syllabary, Shamasastry (1906) as an alphabet, Coulson (1976:3) describes it as 'halfway in character between an alphabet and a very regular syllabary,' while Cardona (1987) simply calls it a script and avoids the issue in his overview of Sanskrit. An examination of the various alphabetic and syllabic aspects of these writing systems is therefore in order, and indeed the results of such an investigation would seem to indicate that neither label fully does justice to them.

The Brahmi family of scripts, so named for their descent from the Brahmi script which is first attested in the third century B.C.,[1] are distinctive in having in common, to a greater or lesser extent, a number of characteristics that begin to surface in their progenitor. Foremost of these is what Masica (1991:136) hails as 'The great innovation of the Brahmi script, its indication of vowels other than A ([ə]) by modifications added to the basic consonant symbols.' The vowel corresponding to [ə] itself is regarded as assumed or

Kansas Working Papers in Linguistics, Volume 17, Number 1, 1992, pp. 55-78

inherent to each consonant in its most basic form, and any vowel pronounced after the consonant is represented by a marker appended in some fashion to the consonantal symbol. Vowels also tend to have distinct allographs when they occur in an initial position. A consonant standing alone must be so indicated by a special diacritic, and consonants otherwise not followed by any vowel, as in consonant clusters, tend to appear in some altered or abbreviated form.

Descendants of the Brahmi script are most commonly associated with the Indic and the Dravidian languages of India. They are also represented in the two primary members of the Tibeto-Burmese family, as well as in significant members of the Khmer and Kam-Tai families. Brahmi-derived scripts have also made their way to such scattered locales in time and place as Sumatra, the Philippines, and the extinct Tokharian language.[2] The most widely known member of this family of scripts, however, is the Devanagari script, most particularly as it is employed in writing Sanskrit. It was also at the hands of the grammarians who adapted Devanagari to the writing of Sanskrit that the aforementioned qualities peculiar to Brahmi writing systems become perhaps most pronounced. While an analysis of Brahmi scripts should consider a representative sampling of them, Sanskrit Devanagari is generally taken as the most representative case, and is therefore the best point at which to begin.

The characters of the Devanagari script are elegant not only in appearance but also, in Sanskrit at least, in operation as well.As mentioned above, Devanagari consonantal characters are considered to include in their basic, 'unmarked' form the vowel [a], corresponding to [ ] in Sanskrit and most of its daughter languages, pronounced after the articulation of the consonant itself. Thus, the characters for Sanskrit's voiceless unaspirated plosives, क , च , ट , त , and प , stand for the syllables [ka], [ca], [ṭa], [ta], and [pa], respectively. When the consonant has no following sound, as utterance-finally or in isolation, a diacritic known as a virāma is placed to the lower right of the character, so that च् and ट् indicate [c] and [ṭ] alone.

The vowel [a] is overtly indicated only in an initial position, by the character अ . All other vowels and diphthongs have one allograph used initially, and another, smaller one when pronounced following a consonant. These latter allographs may be attached to

the consonantal sign at almost any portion of it, such as to the right, as for ता [tā], ती [tī]; below, as in तु [tu], तू [tū], तृ [tṛ]; above, as in ते [te], तै [tai]; above and to the right, as for तो [to], तौ [tau]; and even to the left of the consonantal symbol, as in ति [ti]. The signs for these vowels in an initial position, on the other hand, are आ [ā], इ [i], ई [ī], उ [u], ऊ [ū], ऋ [ṛ], ए [e], ऐ [ai], ओ [o], औ [au].[3] When consonantal [r], र् , an alveolar flap, is followed by [u] or [ū], these, too, appear to the right of the consonantal sign, seemingly turned ninety degrees: रु , रू .

Two diacritics frequently modify vowels. The anusvāra (अं) indicates vowel nasalization and is customarily transcribed, e.g., -am. The visarga (अः ; h) is an aspirated echo of the vowel it modifies (Coulson 9).

Although Devanagari does not readily lend itself to the representation of consonant clusters, such clusters are quite common in Sanskrit. These are represented by ligatures known as conjunct consonants, wherein two or more consonantal characters are modified to fit together in a larger conglomeration. The two most common means of effecting these combinations are horizontally, which generally involves deleting the vertical stroke where present for non-final members of the clusters, as in स्त [sta], from स [s] and त [ta], or ब्य [bya], from ब् [b] and य [ya]; and vertically, as in ङ्ग [ṅga], from ङ् [ṅ] and ग [ga], or द्व [dva], from द् [d] and व [va]. Some combinations may be made in either fashion, as in च्च or च्च [cca], although the advent of printing has made the former method more desirable. These conjuncts can appear quite formidable and bewildering; Coulson presents approximately 250 of them (22-4) and does not state whether this list is exhaustive, and he and Lambert both offer examples of clusters of four consonants: ण्ड्र्य [ṇḍrya] (Coulson 23) and ष्ट्र्य [rṣṭya] (Lambert 35). Two conjuncts, क्ष or क्ष [kṣa] and ज्ञ [jña] bear little or no resemblance to the signs for their component members (ष् [ṣ], ज [j], ञ [ñ]).

Conjuncts involving the flap [r] are of particular interest. [r] following a consonant is represented by a short diagonal mark to the lower left of the consonantal character, as in क्र [kra]. However, when [r] precedes a consonant, it is indicated by a small hook above and as far to the right of the character as possible, as in र्त [rta]. In syllables involving the diacritic anusvāra,

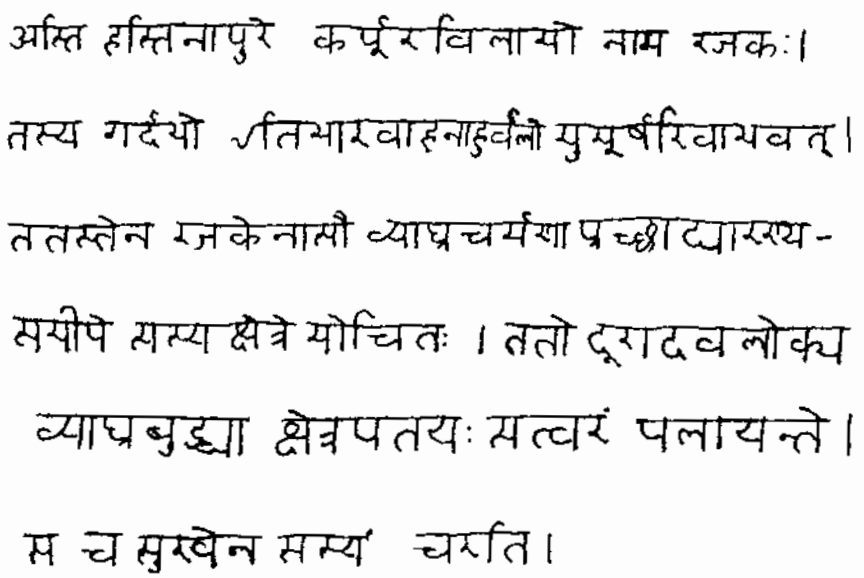
this hook appears even to the right of it, as in यज्ञार्थं [yajñārthaṃ], 'for sacrificial purposes.'

A question commonly invoked in determining whether a script might be considered alphabetic or syllabic is whether or not its most basic unit corresponds more or less with the phoneme; that is, whether it approaches an ideal principle of 'one sign per phoneme.' (Gaur 1985:119; see also Kim 1987:888-9). However, this principle would seem to be for the most part irrelevant in Sanskrit Devanagari. Two points support this view. The first is what Masica (146) refers to as 'phonemic overkill' in the inventory of characters. He argues that the visarga is in fact an allophone of /s/ (स), and argues that the velar and palatal nasals (ङ and ञ) were 'largely predictable' in their distribution. It is true that they virtually never appear apart from a homorganic obstruent, and this would tend to indicate that they are less than full-fledged phonemes in Sanskrit and may have been included in the script to provide symmetry by nasals with the velar and palatal series of stops along with those of the retroflex, dental, and labial series (ण, न, म respectively).

The second of these points is embodied in the phenomenon of sandhi. Devanagari was adapted to Sanskrit with the goal of reproducing as faithfully as possible exact pronunciation (see Coulson 31-2), and the term sandhi, meaning 'juncture,' refers to all of the assimilation in voicing and place of articulation among consonants and the coalescence and glide formation among vowels at word boundaries and between lexical stems in compounding. A word-final segment analyzable phonemically as /t/ may be written, with pronunciation in mind, as त, द, च, ज, ट, ड [ḍ], न, or ल [l], depending on the initial sound of the following word. Words are not separated from one another within clauses in written Sanskrit unless the first word ends in a vowel and the second begins with a consonant, or the first word ends with a visarga and the second begins with a voiceless consonant, or unless the regular and predictable sandhi rules result in hiatus between two vowels. In attempting to separate strings of words into their component members, students of Sanskrit must work their way backward through these sandhi rules. The rules for sandhi given their predictability and their application across word boundaries, bear a striking resemblance to the post-lexical rules of the theory of lexical phonology (see J. T. Jensen 1990:84-7, 174-6). It must be concluded from the practices of regular

Sanskrit orthography that the script was not adapted to the language with units corresponding to phonemes in mind. The implications of this fact would seem to be that, while the orthography was organized to capture each sound as it passes from the lips of the speaker, these individual sounds were not considered meaningful in and of themselves. One is therefore left with no unit of analysis between the phonetic segment and the syllable conceived as a vowel preceded by any number of consonants (see Coulmas 1989:41-2).

A sample of written Sanskrit, accompanied by a transcription and translation, follows (adapted from Katzner 174):



Asti hastināpure karpūravilāso nāma rajakaḥ. Tasya gardabho >tibhāravāhanāhurbalo mumūrṣarivābhavat. Tatastena rajakenāsau vyaghracarmaṇā pracchādyāraṇya samīpe sasyakṣetre mocitaḥ. Tato dūrādavalokya vyāghrabuḍḍhyā kṣetrapatayaḥ satvaraṃ palāyante. Sa ca sukhena sasyaṃ carati.

In Hastināpura there was a washerman named Vilasa. His donkey was near death, having become weak from carrying excessive burdens. So the washerman covered him with a tiger-skin and turned him loose in a cornfield near a forest. The owners of the field, seeing him

> from a distance, fled away in haste, under the notion that he was a tiger.

Most of the modern Indic languages employ Brahmi scripts, and indeed most of these scripts are fairly closely related to Devanagari. Aside from some relatively minor languages, however, only Hindi, Marathi, and Nepali are generally written in the Devanagari script. Masica explains this great number of different scripts by noting that there was no unifying political or religious force, such as the Roman Empire and Catholic Church in western Europe or the Koran in the Islamic world, over most of Indian history (137), so that the sundry language communities tended to develop their own scripts. Then, 'What may have been the high water mark of script differentiation unfortunately coincided with the introduction of printing, which had a tendency to freeze and accentuate many minor differences (144).' He also observes that in the linguistic hodgepodge that is India, languages are under tremendous pressure to maintain a distinct identity, so that 'there is a widespread feeling that a self-respecting language should have its own script. (27).' Even Hindi and Nepali have some divergent orthographic customs for the script they share (145). For the purposes of this discussion, the Devanagari of Hindi and Marathi will be considered, along with the closely related but visually more distinct Gujarati script and the somewhat less closely related Bengali script.

The Devanagari characters as used for Hindi and Marathi are essentially identical to those of Sanskrit.[4] The most significant innovation in shape involves the importation of non-Indic segments such as the Arabic [q] and [f] from Arabic as well as Persian and English. In these cases a subscript dot is added to the characters phonetically closest to the new sounds. Thus क [ka] becomes क़ [qa] and फ [pʰa] becomes फ़ [fa].

There are, however, two more fundamental changes in the script, pertaining to the manner in which it is mapped onto the spoken language. The first of these renders the script less imposing in appearance. Sandhi rules are no longer taken into consideration, so that separation between words is always maintained. Such rules are not effective within words, either; the modern languages under discussion allow two consecutive vocalic syllable nuclei within a word, with the second represented by the initial allograph, as in कई [kaï] 'several,' or बुआ [buä], 'paternal aunt.' In Sanskrit,

any such sequence would have been coalesced together, or reduced to a glide-vowel sequence. While individual words in Hindi and Marathi are easily distinguishable, the pronunciation of these words is rather less accessible to the non-native reader than in Sanskrit. In some, but not all environments, the inherent vowel [a] is deleted. In these instances, a consonantal character stands for its corresponding segment alone, and no additional diacritic is necessary. The most easily predictable environment is word-finally, as in पर [par] 'but,' or क्षण [kṣaṇ] 'moment.' Word-medial environments are less obvious. The best discussion of this phenomenon is in Ohala (1983). She argues that he most basic environment for deletion of the inherent vowel is VC_CV (121). This is fairly readily apparent where the two vowels are overtly marked, as in कोहनी [kohnī] 'elbow,' or चुनना [cunnā] 'to choose.' More troublesome are cases where one or both of the the vowels are also the inherent vowel. Ohala argues that the deletion rule then applies right to left from a morpheme boundary. She bases her conclusion on such data as the following:

> The rare word pronounced [godnəśīn] 'adopted' is derived from /god+nəśīn/ 'lap+sitter' but is written in Devanagari as गोदनशीन (godənəśīn). If a speaker knows the word is /god+nəsin/ he will not pronounce the द (d) of /god/ as a CV syllable (i.e., [də]), but will correctly render it as simply the consonant [d]; he will also retain the /ə/ in /nəsin/. However, if he doesn't know the true morpheme boundary then he applies his ə-deletion rule from right to left and pronounces it as [godənsin] (124).

Conjunct consonants do occur in Hindi, but they are rare relative to Sanskrit. Lambert indicates that they do not occur across morpheme boundaries (77); when they do appear, they are often in environments where ə-deletion cannot be predicted by Ohala's rule, such as word-initially: स्नेह /sneh/ 'love.' However, they also quite frequently occur where ə-deletion is predictable, as in कच्चा /kacca/ 'raw, uncooked,' टैक्सी /ṭaiksi/ 'taxi,' or जन्मदिन /janmadin/ 'birthday.' Many of these are geminates, and Lambert takes pains to make clear that ə-deletion cannot occur in loanwords from other languages, particularly Sanskrit (78-83). Nevertheless, while anyone who has internalized Ohala's rule should be

able to read written Hindi (and also Marathi and Gujarati, as Lambert's discussion of inherent vowel-deletion for these languages in virtually identical for those languages; see 62, 96-7, 139-40), it clearly cannot be a reliable guide in spelling a word one knows only from hearing it pronounced.

A sample of written Hindi, reflective of the differences in Devanagari from its use in Sanskrit, follows with a transcription and translation (adapted from Katzner 176):

गोबर न और कुछ न कहा। लठी कन्धे
पर रखी और चल दिया। होरी उसे जाते
देखता हुआ अपना कलेजा ठंढा करता रहा।
अब लडके की सगाईने देर न करनी चाहिए।

Gobar na aur kuch na kahā. Lāthī kanghe par rakhi aur cal diyā. Horī use jāte dekhtā huā apnā kalejā ṭhanḍha kartā rahā. Ab laṛke kī sagāī ne der na karnī cāhie.

Gobar said nothing more. He put his staff on his shoulder and walked away. Hori looked with pride at the receding figure of his son. He was growing into a fine young man.

The Gujarati script is fairly close in appearance to the Devanagari. It differs chiefly in the absence of the distinctive headstroke. The phonotactics of Gujarati are quite similar to those of Hindi, except that consecutive vowels are not allowable within a word. A sample of written Gujarati follows, accompanied by a translation and transcription, adapted from Katzner (188):

માનવીના હૈયાને નંદવામાં વાર શી!
અધ બોલ્યા બોલ હૈ

Mānvīnā haiyone nandvāmā̃ var śī!
adhbolyā̃ bolke,
thoke abolke,
pocāsā haiyāne pī̃jvāmā̃ vār śī!

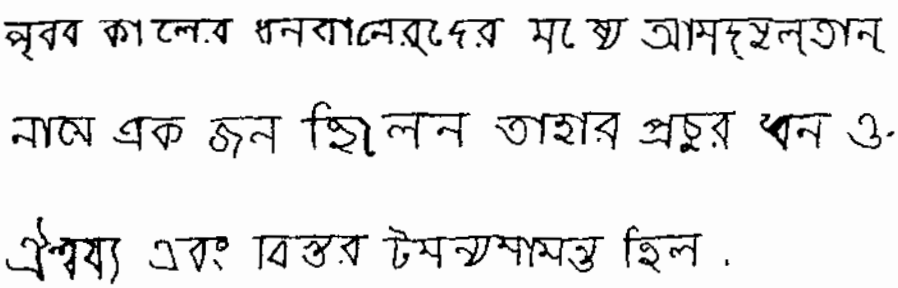
How little it takes to break the human heart!
A word half spoken,
A word unspoken,
How little it takes to bleed that heart!

The appearance of the the Bengali script is quite different from that of the Devanagari; broadly speaking, its characters can be described as tending toward a rather triangular shape. The Bengali language itself differs from the majority of Indic languages in that its vowel corresponding to अ has drifted in articulation to [ɔ]. This then is its inherent vowel, and so the consonantal character ত is taken to stand for [tɔ]. The vowels ঐ and ঔ , corresponding to Devanagari ऐ and औ ([ai] and [au]), are pronounced [oi] and [ou]. One noteworthy feature of the Bengali script is that, in addition to ি [ti], other non-initial vowels are written before the consonantal character: ে [te], ৈ [toi]. Two others are written to either side of it: ো [to], ৌ [tou]. Signs for other non-intial vowels are not greatly different from their Devanagari counterparts

Unlike Hindi words, whose pronunciations are predictable from their written form but not the reverse, in Bengali neither is fully predictable, since inherent vowel-deletion is not regular. Thus, the written form মত , orthographically [mɔtɔ], may denote either /mɔt/ 'idea, opinion,' or /mɔto/ 'similar, like' (Lambert 185). Further compounding difficulties, as is apparent from the latter example, the inherent vowel may also be pronounced [o], so that it overlaps with ও [o]. Ray et al. (1966:15) states that there 'are no simple rules' for this alternation of ɔ/o/∅, and Lambert (185) asserts that the proper realization can be understood 'only by a knowledge of spoken Bengali.'

A sample of written Bengali, with a transcription (albeit without taking into account the shift in

pronunciation of the inherent vowel) and translation follows (from H. Jensen 379-80):



Purbbakakler dhanbanermadhye, Amad Sultan name ek jan chilen. Tahar pracur dhan o aswarjya ebambistar sainyasamanta chila.

Among the rich in the old days was a man called Amad Sultan. He possessed great wealth and also a numerous army.

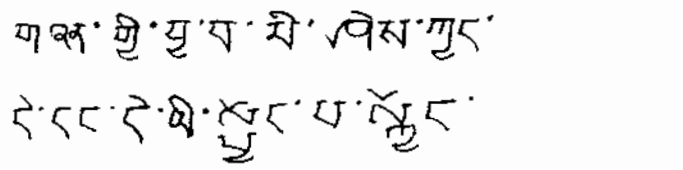
Certain features of some non-Indic Brahmi scripts are worth noting, at least in passing. Of note in the Tamil script is the pulli. This is a raised dot corresponding in function to the Devanagari virāma, but, unlike its counterpart, as Stevens (1987:734) observes, 'The use of the pulli is instrumental in the correct representation of consonant clusters: இப்ப represents ippa 'now,' not *ipapa.' Thus, in Tamil conjunct consonants are unnecessary.

The Thai script offers an example of diacritics used to indicate a fairly complex tone system. A consonant sign falls into one of three classes, and this class in conjunction with any of four diacritics or the absence of one determines the tone for that consonant's syllable (Hudak 1987:766). Thai also appears to be unusual among Brahmi scripts in that consonantal characters have no inherent vowel; น stands simply for /n/. Vowel indicators may appear below, above, to the left, to the right, or on both sides of the consonant: นุ /nu/, นิ /ni/, นา /na/, โน /no/, เนา /nao/. The representation of /nai/ is particularly complex: ไนไน (H. Jensen 391).

In any comparison between the Brahmi family of scripts and the Korean Hangul script, that of the Tibetan language is particularly worthy of note as it is often mentioned as possibly having had some influence on

the shaping of Hangul (Gaur 85, Diringer 1968:354, Lee 1983:7). In this connection perhaps its most significant feature is the tsheg, a syllable-ending point. Otherwise, a narrow space separates each consonant character. Beyond this, it is fairly similar to the Devanagari script in appearance. In contrast with Devanagari, however, Tibetan syllables contain a staggering number of apparently superfluous consonantal signs called pre-, super-, sub- and postscripts, relics of the changes in spoken Tibetan since the script was invented, 'with auxiliary significance or none (Miller 1956:6),' which 'allow for variety in the writing of one and the same phonetic shape;' these 'just have to be memorized word by word: there is no rule to guide in their usage (8).' The Tibetan script does have largely the same system of vowel indication as the Devanagari.

A sample of written Tibetan follows, with an accompanying transcription and translation (from H. Jensen 384-5):



gzan- gyi- bya- ba- mi- šes- kyan
de- dan- de- yi spyod- pa skyon.

Even if you don't understand your neighbor,
make allowances for him and his peculiarity.

There is no lack of scholarly opinion concerning the question of whether members of the Brahmi family of scripts should be considered alphabetic or syllabic. Agreement alone is lacking on this topic. Masica refers to the scripts used for modern Indic languages as alphabets (145), while Snell & Weightman (1989:5) introduce Hindi Devanagari as a syllabary. Kachru (1987:474) also writing on Hindi, states that the script is 'syllabic in that every consonant symbol represents the consonant plus the inherent vowel /ə/,' but then on the next page the characters of the script are listed under the heading of an alphabet. Klaiman (1987:493), writing on Bengali, describes its script as 'organised according to syllabic rather than segmental units,' and Ray et al. declare that 'It is a syllabary, modified somewhat towards becoming an alphabet' (12). Lambert maintains that all of the Indic scripts set forth in her

work are syllabaries. Hudak (764) refers to the Thai script as an alphabet, and Miller (1) calls the Tibetan system of writing 'an alphabetic script on syllabic principles.' Wheatley, writing on the Burmese Brahmi script, declares that the inherent vowel 'sometimes leads to Indic writing systems being incorrectly labeled "syllabic"' (1987:844), but Steever, discussing Tamil's Indic script in the same volume refers to it as a syllabary (1987:734).

Disagreement among scholars of writing in general on the typological classification of Brahmi scripts arises in large measure from their differing definitions of alphabetic and syllabic systems. Gaur stresses that 'in alphabetic scripts... vowels and consonants have equal status' (119) and, since this is clearly not the case for Brahmi scripts, they are classified as syllabic. Gelb (1965) is on the whole unwilling to commit himself. He declares, 'The main characteristic of the alphabet is the existence of special signs for both consonants and vowels' (184), but then observes that in Indic writing systems the vowel indicators are 'attached to the respective syllabic signs' (187). He describes the inherent vowel as an 'abnormal development' (239) and relinquishes the question by calling for 'sharper typological definitions' for future discussions (188).

DeFrancis (1989) draws a sharp distinction between syllabic scripts such as that of Japanese which

> represent syllables by means of unitary syllabic signs, and Indic scripts which are 'syllabic' only in the quite different sense that they represent phonemes by means of non-unitary signs - graphemes representing phonemes - which are grouped together to form a syllabic bundle. Such scripts must still be classified as basically phonemic systems. (193)

DeFrancis equates such phonemic systems with alphabetic writing. Coulmas essentially agrees, arguing that the Indic scripts are 'not syllabic because the other [non-inherent] vowels are indicated by systematically modifying the basic consonant sign with additional diacritical marks' (183). He goes on to observe, 'The unit of writing, the syllable, is not the same as the unit of underlying analysis, the phoneme.' For both

Coulmas and DeFrancis, then, it is this unit on analysis that establishes a script's typological status.

H. Jensen and Diringer both gravitate toward the alphabetic viewpoint. Jensen writes regarding the classification of Brahmi scripts as syllabic:

> There is some justice in this point of view; on the other hand, however, two things must be emphasized, first that there are no syllable-signs for [e.g.] ki, ku, ke, ko, etc., on the contrary, in these cases a vowel sign is added, and the sign concerned thus has to lose its a and and become a pure consonant-sign; and secondly that when several consonants come together... the many ligatures themselves... show that the signs are first and foremost pure consonant-signs and that the inherence of an a represents, not something essential, but a peculiarity. (362-3)

Diringer, too, argues the individual representation of sounds in the absence of an inherent vowel gives the Brahmi scripts an alphabetic classification: 'Syllabic forms of writing... are ultimately based on the fact that the smallest unit into which any spoken word or series of sounds can be subdivided is the syllable' (1962:23). Later, however, he comes to view the inherent vowel as a flaw in the writing system and therefore calls the Devanagari script a 'semi-syllabary.' (1968:283)

Both alphabetic and syllabic arguments regarding the typological classification of Brahmi scripts unquestionably have merit. With the exception of post-consonantal /ə/, every phoneme receives an explicit segmental representation and, as the scripts were originally conceived at least, /ə/ could invariably be considered as present in the absence of any other mark. Still, it should be borne in mind that the existence of this inherent vowel is not some sort of aberration, but has been a part of these scripts from their origin. In the modern Indian languages, the scripts could be construed as moving in a more alphabetic direction, since in certain environments, even an unmarked consonantal character stands for itself alone. On the other hand, before the reader can analyze the script into its individual phonemic, or, in the case of Sanskrit, phonetic segments, words must first be broken

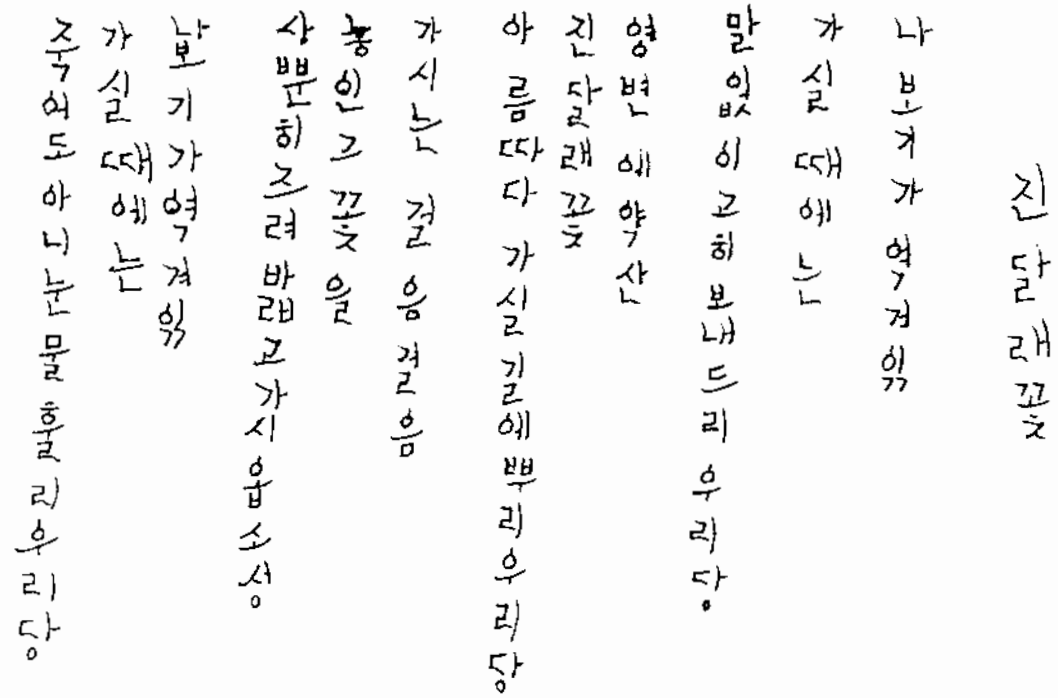
down into the syllable-based units of which they are composed. In contrast, in an unambiguously alphabetic script words are constructed directly from their member segments, and these segments always appear in the same linear order relative to pronunciation. In Brahmi scripts, within syllabic units, although every individual segment may be in evidence, the reader must have at least some ability to arrange these items into the proper order of pronunciation, as the signs अर्थिन themselves may appear in virtually any order within their syllabic bundles. In the Sanskrit word [art^{h}in] 'wanting, petitioning,' the sequence r-t^{h}-i appears in reverse order relative to the left-to-right direction of the script. The assessments of Coulson and Diringer that the Devanagari script is neither wholly alphabetic nor wholly syllabic may therefore be said to possess considerable insight, for neither classification does the writing script complete justice.

The Korean Hangul writing system has been widely praised for the logic and straightforwardness with which it was devised. Gale (1912:14), for example, writes, 'In simplicity, the Korean [script] has perhaps no equal, easy to learn and comprehensive in its power of expression.' Although it has forty signs corresponding to individual sounds, many of these are formed by regular principles from the more basic signs. The basic consonantal signs are: ㄱ /k/, ㄴ /n/, ㄷ /t/, ㄹ /l/ ([r] initially), ㅁ /m/, ㅂ /p/, ㅅ /s/, ㅇ /ŋ/ (∅ initially), ㅈ /c/, ㅎ /h/. Aspirated plosives are indicated by adding a stroke to the symbols for the unaspirated ones: ㅋ /k^{h}/, ㅌ /t^{h}/, ㅍ /p^{h}/, ㅊ /c^{h}/. Laryngealized ('double') consonants are indicated by doubling the signs for their non-laryngealized counterparts: ㄲ /k'/, ㄸ /t'/, ㅃ /p'/, ㅆ /s'/, ㅉ /c/.

In like manner, there are eight basic vowel signs: ㅣ /i/, ㅡ /ŭ/ ([ɨ]), ㅓ /ə/, ㅏ /a/, ㅜ /u/, ㅗ /o/, ㅔ /e/, ㅐ /æ/. Symbols for two other 'pure vowels' (N. K. Kim 889), /ü/ and /ö/, are formed by adding ㅣ to the signs for their back counterparts and are alternately analyzed as /we/ and /wi/ (Lukoff 1982:xvi). Combinations of six of these vowels with y-glides, considered diphthongs, are formed, again, by one additional stroke: ㅕ /yə/, ㅑ /ya/, ㅠ /yu/, ㅛ /yo/, ㅖ /ye/, ㅒ /yæ/. Combinations with w-glides are analyzed as diphthongs with either /u/: ㅞ /we/, ㅝ /wə/; or with /o/: ㅘ /wa/, ㅙ /wæ/. One other diphthong combines /i/ and /ŭ/: ㅢ /ŭi/.

These individual signs are grouped together to form syllable-based blocks, again according to regular principles. The vowel-sign always occupies the central position, thus becoming the 'nucleus' for the syllabic group. Then, depending on whether the vowel-sign is vertical or horizontal, the syllable-initial consonant is indicated either above or to the left of it: 누 /nu/, 자 /ca/. This initial position is never left empty; if there is no syllabic onset, a silent ㅇ appears in the initial position: 이 /i/, 요 /yo/. The final position may be left empty; when it is filled, it always appears at the bottom of the block, beneath the other two signs: 정 /cəŋ/, 돌 /tol/, 원 /wən/. These syllabic blocks have customarily been written vertically, although they sometimes are arranged horizontally to accommodate printing.

A sample of written Korean follows, accompanied by a transcription and translation (adapted from Katzner 220):



cin- tal- ræ- k'oc^{h}

na po- ki- ka yək- kyə- ik'
ka- sil t'æ- e- nŭn

mal- əps- i ko- hi po- næ tŭ- ri u- ri- ta.

yəŋ- pyən e yak- san
cin- tal- ræ- koc^{h}
a- rŭm- t'a- ta ka- sil kil- e p'u- ri- u- ri- ta.

ka- si- nun kəl- ŭm- kəl- ŭm
nuh- in kŭ k'oc^{h}- ŭl
sa- p'un- hi- cu- ryə palp- ko ka- si- op- so- sə.

na po- ki- ka yək- kyə- ik'
ka- sil t'æ- e- nun
cuk- ə- to a- ni nun- mol hul- ri- u- ri- ta.

The Azalea

When you take your leave,
Tired of seeing me,
Gently and silently I'll bid you go.

From Mount Yag of Yongbyon
An armful of azaleas I shall pick,
And strew them in your path.

Go now, I pray, with short steps!
Let each footstep gently tread
The flowers which I have strewn for you.

When you take your leave,
Tired of seeing me,
Though I should die, I shall not weep.

The pronunciation of the individual signs is not unvarying. For example, the alternation of /l/ with [r] has been noted, unaspirated stops are voiced word-medially, and in a syllable-final position ㅅ /s/ is pronounced [t] and the laryngealization contrast is neutralized. All of these alternations, however, are completely predictable in any given environment, a fact which has by no means been lost on those analyzing the Hangul script. Taylor (1980:68), discussing the script's alphabetic aspects, comments, 'In Hangul the ideal of one symbol for one phoneme is almost realized.' Coulmas writes, 'Of all the systems that were actually invented as writing systems, the Korean script comes closest to treating distinctive

features as the basic units of representation' (120). DeFrancis goes even further, declaring, 'Korean as written today is more accurately designated as morphophonemic. That is to say, changes in pronunciation are generally not indicated in the spelling if they can be predicted from the environment' (193). In Hangul, every spoken segment is accounted for in the script, and the phonetic value of any given sign can be ascertained from its environment. Such characteristics would not only tend to indicate that the Hangul script is an alphabet, but a very good one at that.

Taylor, however, stresses the syllabic aspects of the script as well,[5] finding certain advantages to the fact that the primary visual object is a syllable rather than a phoneme:

> Sequencing and grouping sounds can be stages in word identification. Problems associated with these stages can be minimized in a syllabary where the syllabic breaks within a word are immediately apparent and a word requires only a short array of letters... Another advantage of a syllabary is that a syllable is a stable and concrete unit to compare with a phoneme. Often a consonant phoneme by itself cannot be pronounced or described until it is paired with vowels to form a syllable. Not surprisingly, a syllabary is easier to develop and to learn than an alphabet. Young children find it easier to segment words into syllables than into phonemes.(70)

Coulmas, too, notes the advantages of the script's syllabic arrangement after observing its phonemic accuracy (120), and does not venture to classify it as either alphabetic or syllabic. Among other commentators, Gaur emphasizes the syllabic organization of the Hangul (84-5), although few scripts better meet the criterion of approaching the ideal of one sound per phoneme (119). In DeFrancis' view, Hangul is no more syllabic than he sees the Indic scripts as being (193); he goes so far as to assert, 'Korean can be called syllabic only in the same sense that English can be called logographic because it groups its letters into words' (192). This, however, would seem to overlook Taylor's arguments regarding the different approach to

the script necessitated for the reader by this different arrangement. H. Jensen calls Hangul a 'pure alphabetic script' (211), while Diringer describes it as 'practically an alphabet' (1968:352).

One apparent source of disagreement is terminological. To DeFrancis, Lukoff, and N. K. Kim, the component members of the syllabic blocks are letters of an alphabet, while for Taylor the blocks themselves are the letters, and J. P. Kim (1983) seems to use the term interchangeably. Kim does also use the term 'syllabigraph' to refer to these units; he credits typographic designer Ann Sang-oo for coining this word, 'for lack of an existing one to express the way Korean units are constructed... Hangul combines the features of an alphabet and syllabary' (22).

A factor which may impel scholars to typologize such a script as an alphabet is that such prominent theorists of the subject as Gelb (201) and H. Jensen (52-3) explicitly regard alphabetic scripts as more evolved and therefore more advanced. To acknowledge the syllable-based aspects of a script might therefore seem to diminish its prestige by implying that it is somehow more 'primitive.' In this connection, it is worth noting, with Gaur, that some scripts do not shed their syllabic characteristics to evolve into full-fledged alphabets simply 'because syllabic scripts are an excellent vehicle for the representation of a large number of languages' (119). It also remains true that the Korean script is a work of genius by whatever name one chooses to refer to it. DeFrancis aptly describes King Sejong, the script's reputed inventor who ruled during the fifteenth century, as 'a monarch who, if rulers were ever measured by anything besides military exploits, would surely rank among the foremost of those who have appeared on the stage of history' (188). In any event, while the Hangul writing system's phonemic representation is nothing short of remarkable, its syllabic orientation, as is true of the Brahmi scripts, is significant enough that it cannot be ignored.

Neither Hangul nor the Brahmi family of scripts may be classified as either alphabetic or syllabic with complete accuracy. One might therefore pause to consider where they fit relative to one another on a continuum between the two script types. A particularly striking contrast between the two writing systems is the inherent vowel of the Brahmi scripts as opposed to what in Hangul might be considered an 'inherent initial consonant.' No syllabic block may appear with its

initial position unfilled; if there is no pronounced syllabic onset, ㅇ /ŋ/ is written but remains silent. Gale in fact notes that the script originally also had three other silent initials: ㆆ , ㅇ , ㅿ , but that ㅇ was eventually substituted for them (44). As a result, every written Korean syllable must include an onset of some sort and a vocalic nucleus, although the coda remains optional. In Brahmi scripts such as Devanagari, however, the consonantal character conceived as the most significant element of a syllable may appear in certain circumstances with no following vowel if a virāma is attached.

This indeed is the fundamental difference between the two; in Hangul the vowel which modern theory refers to as the syllabic nucleus occupies the central and most prominent position, while in the Brahmi scripts, it is the consonant immediately preceding this vowel that is considered the basis upon which the rest of the syllable is built. Immediately preceding consonants, conjoined to this segment, are considered part of this syllable, as Lambert (76) explicitly states. Also indicative of this is the fact that, if in Devanagari the vowel [i] is pronounced after a consonant cluster such as [str-], the vowel-sign is written before the entire cluster: स्ति. Hangul holds a more "modern" conception of the syllable. It is also more regular and more linear in its organization of the syllable; consonants preceding the vowel are always written above or to the left of it, while those following are always below it. Brahmi vowel diacritics, on the other hand, may appear in any direction from the consonant, and even, in the Thai and Bengali scripts, on two sides of it. It may therefore be concluded, on the whole, that while neither Hangul nor the Brahmi family of scripts is completely alphabetic, Hangul comes much closer to fitting this description.

Nevertheless, the relative typological similarity between the two writing systems, coupled with the recent origin of the Korean script, inevitably raises the question of whether any of the Brahmi scripts might have had some influence on the shaping of Hangul. Of course, by far the greatest outside influence on Korean culture was China, and the Hangul syllabigraphs certainly bear a greater casual resemblance to Chinese characters than to those of any of the Brahmi scripts. DeFrancis affirms, 'What Sejong did was to adapt the Chinese principle of equidimensional syllabic blocks by grouping the letters that comprise a Korean syllable into blocks separated from each other by white space' (191). The fact

remains, however, that Hangul is much closer typologically to the Brahmi writing systems than to that of Chinese. H. Jensen reports that before the invention of Hangul Koreans had obtained some utility from various Chinese methods of rendering unfamiliar sounds by adapting existing characters to syllabic usage and assumes that the Koreans thereby became aware of the syllabic principle (179, 211). Gale (1912) argues that one particular set of syllabic characters was in turn inspired by the Devanagari script (42, 48-9). An indirect relationship at least is thus demonstrated.

Moreover, a number of scholars, among them Gaur (85) and Lee (6-7) suggest that the Sanskrit and Tibetan languages as well as the scripts with which they were written would quite likely have been known to literate Koreans, and Lee points to these as likely sources for the alphabetic aspects of Hangul. H. Jensen also mentions a Korean writing system known as the P̲um̲so̲ script, developed before the time of Sejong, which is used 'in Buddhist ceremonies of prayer and sacrifice for the transcription of foreign Sanskrit words' (216). This script was apparently fairly closely modeled on the Tibetan script. DeFrancis, too, names India as a likely, if perhaps indirect, source of alphabetic principles (186). Indeed, unless we are to believe that Sejong and his assistants conceived of representing a single sound with each sign entirely on their own, it is most difficult to imagine from what other source they might have learned of this principle.

Finally, one other question remains from the anomalous typological status of these two writing systems, one of which represents a very significant portion of the world's languages and population, while the other, although isolated, nevertheless presents linguists with an impressive specimen of phonemic analysis. The failure of most commonly accepted definitions for syllabic and alphabetic systems of writing to include such important scripts and script families would seem to suggest that a new typological category is needed to fill this void. Suggestions such as 'alphabetic syllabary,' 'alphabet on syllabic principle,' or 'semi-syllabary' might not be the worst compromise, for the time being at least, as they take into account the elements found in these writing systems. Despite the differences that do exist between Hangul and the Brahmi scripts, they clearly belong together in such a category.

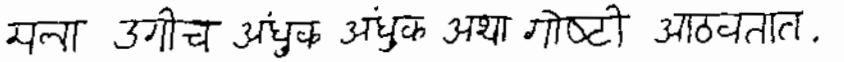
NOTES

1. Although there is no definitive evidence the majority of scholarly opinion is reasonably confident that the Brahmi script was derived from or at least inspired by a West Semitic source; see especially Shapiro 1969, Masica 1991:133-4, H. Jensen 1970: 368-70, and Diringer 1962:144-5. In rather greater doubt is its precise date of origin. Diringer places it in the seventh century B.C., While H. Jensen (363) asserts that 'literary evidence shows it to have been in widespread general use in the fifth century B.C.' Masica, on the other hand, argues strongly that the script was still quite young in the time of Asoka, after whom the inscriptions bearing the first clear example of the Brahmi script are customarily named.

2. For a comprehensive inventory of Brahmi scripts, see H. Jensen 361-404, or Diringer 1968:257-351.

3. The vowel characters based on that of [a] are variously written either as represented or as म , मा , मो , मौ . Lambert identifies those found in the text with Bombay printing houses and the Marathi language, preferring the latter for Sanskrit and Hindi (21, 102). In practice, however, associations are less rigid; Coulson as well as Snell & Whitman (1989) use the Bombay characters for their respective textbooks on Sanskrit and Hindi, and Katzner's (1977) sample of Hindi includes the Bombay characters, while the Marathi sample includes the other set. The Bombay characters will be used in this discussion as they seem both more esthetically pleasing and easier to produce.

4. One noteworthy development mentioned by Masica 150 and Lambert 103 is an effort in Marathi to regularize initial vowel signs so that they consist of the basic अ plus the post-consonantal allographs: अि [i], अी [ī], अु [u], अू [ū], अृ [ṛ], अे [e], अै [ai]. However, this has not gained widespread currency and is certainly not in evidence in the following sample, necessarily brief and tentatively transcribed due to the poor quality of the printed original, adapted from Katzner 189:



Malā ugīc ādhuk ādhuk aśā goṣṭī āṭhvatāt.

I have a sort of hazy recollection of certain events.

5. The subject of Hangul's logographic aspects is briefly entertained in Taylor's article as well (73). This is based largely on the fact that some Korean words are monosyllabic, so that one syllabic block stands for one word, such as 닭 /talk/ 'hen.' This, however, might more appropriately be ascribed to the script's syllabic aspects.

REFERENCES

Cordona, George, "Sanskrit," in The World's Major Languages, Bernard Comrie, ed. Oxford: Oxford University Press, 1987. pp. 448-469.

Coulmas, Florian, The Writing Systems of the World. Cambridge, MA: Basil Blackwell, 1989.

Coulson, Michael, Teach Yourself Sanskrit. Teach Yourself Books: Hodder and Stoughton, 1976.

Diringer, David, The Alphabet. London: Hutchinson & Co., 1968.

-----, Writing. London: Thames and Hudson, 1962.

Gale, J. S., "The Korean Alphabet." Transactions of the Korea Branch of the Royal Asiatic Society, vol. IV, part I., 1912, pp. 13-61.

Gaur, Albertine, A History of Writing. The British Library, 1984.

Gelb, I. J., A Study of Writing. Chicago and London: University of Chicago Press, second edition, 1963.

Hudak, Thomas John, "Thai," in Comrie pp. 757-776 (see Cordona).

Jensen, Hans, Sign, Symbol, and Script. George Unwin, trans. London: George Allen and Unwin, Ltd., 1970.

Jensen, John T., Morphology. Philadelphia: John

Benjamins Publishing Co., 1990.

Kachru, Yamuna, "Hindi-Urdu," in Comrie pp. 470-489 (see Cordona).

Katzner, Kenneth, The Languages of the World. London: Routledge & Keegan Paul, Ltd., 1977.

Kim, Jin-Pyong, "The letterforms of Han'gul - Its origin and transformation," in Korea Journal 23 (1983), pp. 9-22.

Kim, Nam-Kil, "Korean," in Comrie pp. 881-898 (see Cordona).

Klaiman, M. H., "Bengali," in Comrie pp. 490-513 (see Cordona).

Lambert, Helen Marjorie, Introduction to the Devanagari Script for students of Sanskrit and Hindi, Marathi, Gujarati, and Bengali. London: Oxford University Press, 1953.

Lee, Ki-Moon, "Foundations of Hunmin Chongum," in Korea Journal 23 (1983), pp. 4-8.

Lukoff, Fred, An Introductory Course in Korean. Seoul: Yonsei University Press, 1982.

Masica, Colin P., The Indo-Aryan Languages. Cambridge: Cambridge University Press, 1991. (esp. Ch. 6 on writing systems)

Miller, Roy Andrew, The Tibetan System of Writing. Washington, D.C.: American Council of Learned Societies, 1956.

Ohala, Manjari, Aspects of Hindi Phonology. Delhi: Motilal Banarsidass, 1983.

Ray, Punya Sloka; Hai, Muhammad Abdul; and Ray, Lila. Bengali Language Handbook. Washington, D. C.: Center for Applied Linguistics, 1966.

Shamasastry, Rudrapatna, The Origin of the Devanagari Alphabets. Varanasi, India: Bharati - Prakashan, 1973 (first published 1906).

Shapiro, Michael C., "On the original direction of the Brahmi script." Papers from the Fourth Regional Meeting of the Chicago Linguistic Society, pp. 208-

224.

Snell, Rupert, and Weightman, Simon. Teach Yourself Hindi. Teach Yourself Books: Hodder and Stoughton, 1989.

Steever, Sanford B., "Tamil and the Dravidian Languages," in Comrie pp. 725-746 (see Cordona).

Taylor, Insup, "The Korean Writing system: An alphabet? A syllabary? A logography?" in Processing of Visible Language 2, Paul A. Kolers, Merald E. Wrolstad, and Herman Bouma, eds. New York: Plenum Press, 1980.

Wheatley, Julian K., "Burmese," in Comrie pp. 834-854 (see Cordona).