An Analysis towards the Development of Electronic Bilingual Dictionary (Manipuri-English) -A Report

Sagolsem Poireiton Meitei, Shantikumar Ningombam, Prof. Bipul Syam Purkayastha

Department of Computer Science
Assam University, Silchar-788011

ABSTRACT-*Meaningful sentences are composed of meaningful words; any system that hopes to process natural languages as people do must have information about words, their meaning and relative words in another language. This information is traditionally provided through electronic dictionaries. But these dictionary entries evolved for the convenience of human readers, not for machines. So, machine readable electronic dictionary becomes the central resources for Natural Language applications. Dictionaries and other lexical resources are not yet widely available in electronic form for Manipuri language. And there is no machine readable dictionary that can provide both of lexical resources and conceptual information. This paper describes the ongoing development of an Electronic Manipuri Bilingual dictionary. This implementation will provide a more effective combination of traditional English-Manipuri bi-lingual lexicographic information and their conceptual information*
KEYWORDS:- *Manipuri Language, Bilingual, Dictionaries, Tibeto Burman*

INTRODUCTION

Dictionary is a book in which words are listed alphabetically with their meanings, either in the same language or in another language, and other information about them. Modern dictionaries usually provide phonetic transcriptions, hyphenation, synonyms, derived forms, and etymology. However, a dictionary of a living language can never be complete; old words fall into disuse, new words are constantly created and those surviving frequently change their meanings.

A dictionary can also be a book, which gives information about a particular subject, in which the entries are given in alphabetical order. Example are, biographical dictionary, pronunciation dictionary, dictionary of local dialect, dictionary of proverb, dictionary of terminology, dictionary of history, dictionary of quotations, legal dictionary and computer dictionary etc. Electronic dictionaries are also programs that can be downloaded from the Internet or purchased on a CD-ROM or DVD and installed on a desktop computer or on a lap top, such as an Apple Macintosh or a Windows PC. Other electronic dictionaries can be searched and consulted online on the Internet. The computer-installed dictionaries can often be consulted directly from within any application that uses editable text. Some electronic dictionaries contain only corpora for a single language (monolingual), but others are bilingual dictionaries and translation dictionaries and may also include, medical or legal dictionaries, thesauri,

travel dictionaries, dictionaries of idioms and colloquialisms, a guide to pronunciation, a grammar reference, common phrases and collocations, and a dictionary of foreign loan words

MANIPURI LANGUAGE

Manipuri, locally known as Meiteilon (the Meitei+lon 'language'), is spoken basically in the state of Manipur which is in the north eastern india. It is also spoken in Assam, Tripura, Mizoram, Burma and Bangladesh. Manipuri is the only medium of communication among 29 different mother tongues. Hence it is regarded as lingua franca of Manipur state. Since 20 August 1992 Manipuri become the first TB (Tibeto Burman) language to receive recognition as a schedule VIII language of India. Before this every date, Manipuri has adopted as the medium of instruction and examination. More and above, Manipuri is taught up to Ph.D. level in the Indian Universities. It is also the medium of education in Manipuri Schools. This language has been a major adhesive in the integration of all ethnic groups of Manipur. In the classification of Sino-Tibetan family, Manipuri is placed in kuki-chin Proper separated by Grierson-Konow (1903-1928), in Meitei branch of Kukish Section by Safer (1955, 1966, 1974). Manipuri share genetic features of TB (Tibeto Burman) features including phonemic tones, SOV (Subject Object Verb) word order, agglutinative verb morphology and tendency to reduce disyllabic forms to monosyllabic ones (Delancy 1987). Grierson (1903) in his LSI, Manipuri is briefly described: vowels, consonants, word categories syllable, sentence type etc. however neither of this word is exhaustive in its description.
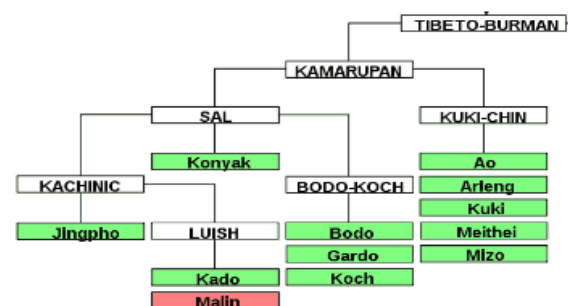

Fig 1: language tree for Manipuri (Meitei+lon)**
**(http://www.translationdirectory.com/articles/article2300.php)

REVIEW OF LITERATURE

The earliest known prototypes of the dictionary were West Asian bilingual word lists of the second millennium BC.

They were Sumerian and Akkadian words inscribed in parallel columns on clay tablets in cuneiform writing and were organized thematically, like a thesaurus. Even after the invention of the alphabet later in the same millennium many centuries passed before alphabetic ordering became a common tool for organizing information. The list came into existence because the Akkadians (Babylonians) had inherited through conquest the culture and traditions of Sumer and used the sets of signs as a means by which their scribes could learn what the classical language of writing was, in effect,. Over two thousand years later in medieval European, the same principle was used when scribes who spoke vernacular languages learned to read and write in Latin; the first European dictionaries were bilingual lists of (difficult) words of Latin explained in the vernacular of the learners in question. A typical work that made Latin words accessible through English glosses was the Promptorium parvulorum sive clericorum (Storehouse for little ones or clerics) of Galfridus Grammaticus (Geoffrey the Grammarian), compiled around 1440.

In India, first Sanskrit dictionary was compiled by Amar Singha in between fourth and sixth century. This dictionary's name was 'Naamlinganushasan', popularly known as 'Amarkosh'. Basically Amarkosh is a synonym dictionary, where all words are listed according gender. All Sanskrit dictionaries, published before nineteenth century including Amarkosh were written in poetry. Some mentionable dictionaries of that period are 'Anekartha-samuchhay' by Shaswata, 'Abhidhanratnamala' (tenth century) by Halayudh, 'Baijayonti' (eleventh century) by Jadavprakash, 'Abhidhanchintamoni' (twelve century) by Hem Chandra, Medinikor's 'Anekarthosanbdokosh' (fourteenth century) etc.The work of Manipuri language may include by Manipuri Sanskrit scholars: kalachan Shastri's (1964) 'Manipuri Byakaran Koumudi', Dwijamani Dev Sharma's (1969) 'Meitei Byakaran, and Nandalal Sharma's (1976) 'meiteilon' and the study of Manipuri by by native speakerstarted from late 70's some are W.Tomchou (1968) 'manipuri Grammer, P.C. Thoudam's (1991) T.D.C.(Three years Degree Course) Remedial Manipuri Grammer and M.S.Ningomba's 'Meitei Lonmit' Ch.Yaswanta Singh's(2000) 'Manipuri Grammer'. Other works include unpublished works of master's, M.Phild Dissertations and Ph.D thesis. The work of Non-Manipuri linguists written in English are Bhat and Ningomba's 'A Manual of Manipuri Grammer (1988) *unpublished.* Bhat's Grammatical Relations: evidence against their Necessity and Universality (1991) and Inder Sing's Manipuri Phonetic Reader (1975).

HISTORY OF MANIPURI- DICTIONARY

The development of Manipuri dictionary started from 1960's. In 1964 the first Manipuri Dictionary "Manipuri to Manipuri and English dictionary "compiled by Shri Ningthoukhongjam Khelchandra was published. The entries in this dictionary are made in Manipuri and definitions are given in both Manipuri and English or in English only in some places. In 2004 "Manipuri to English Dictionary "compiled by Dr. Imoba was published. In 2005 the second edition of "Manipuri to Manipuri and English dictionary "compiled by Shri Ningthoukhongjam Khelchandra was published. In 2006 "Learners' Manipuri-English Dictionary "compiled by Dr. Surmangol Sharma was published. In this dictionary the entries are made in roman transliteration and it is again written in Meitei Mayek (Meitei script) and its meaning is written in English

WRITING STYLE AND GRAMMAR

Grammar, there are two types of roots-the free roots and bound roots. All nouns, in Manipuri, are free roots. There is also no grammatical gender in Manipuri, the human and animate Meitei had its original script named Meitei-mayek which was in use up to the 18th century. However, later the Eastern Nagari or Bengali script adopted for scripting Manipuri. It is also the script used till now. However, efforts to revive the Meitei-mayek are still on. The Grammar of the Manipuri Language is interesting yet simple; the phonological system of the Manipuri language can be basically divided into three levels- Vowels, Consonants and Tones. In Manipuri nouns are addressed according to the masculine or feminine on the basis of the natural sex.

PHONOLOGICAL SYSTEM

The sound system of Manipuri consists of 24 consonants and 6 vowels.

The vowel system

It is said that Manipuri has six vowels. They are shown as below:

Table. 1: chart of vowel phonemes

	front	central	Back
high	i		u
mid	e	ə	o
low		a	

/i/-   (High, front, unrounded)
/e/-   (Mid, front, unrounded)
/o/-   (Mid, back, rounded)
/u/-   (High, back, rounded)
/a/ -   (Low, central, unrounded)
/↔/ -   (Mid, central, unrounded)

The consonant system

The consonant system makes use of the distinction between aspirate and unaspirate, voiced (vd.) and voiceless (vl.) only in the case of stops not in other consonants. Makes use of the distinction stop, nasal, lateral, fricative and approximant (semi-vowels) and

shows consonants primarily in four positions: bilabial, alveolar, palatal, velar and glottal. Manipuri consonant system is given below. Out of 24 phonemes 7 consonants are borrowed phonemes. They are *b, d, g, gh, j, jh* and *r*. So they are found only in loan words (Yashwanta: 9).

	Bilabial		Alveolar		Palatal		Velar		Glottal	
	vl.	vd.	vl.	vd.	vl.	vd.	vl.	vd.	vl.	vd.
Unaspirated	p	b	t	d	c	ɟ	k	g		
Aspirated	pʰ	bʰ	tʰ	dʰ		ɟʰ	kʰ	gʰ		
Spirants					s					h
Nasals		m		n				ŋ		
Lateral				l						
Trill				r						
Approximant		w				j				

Table.2: chart of consonant system

ELECTRONIC DICTIONARY

Now, the computer has made the creation and manipulation of information the central activity of the economy. This era has also been known as the information age. If information explosion is the most pronounced phenomenon of the present era, the Internet is and will remain its greatest enabler. This explosion is triggering a global knowledge revolution.

In the early 1990s computer technology made possible the release of dictionaries on floppy disks or CD-ROM, e g the electronic edition of The Random House Unabridged Dictionary (l993). Electronic dictionaries also became available as part of multi-volume reference book packages such as Microsoft's Bookshelf CD-ROM and as a feature of on line services Computer technology provided new ways to search for and link words and new ways to illustrate them, e.g., prerecorded pronunciations that users can play back By the end of the 1990s many dictionaries were available in various print and electronic editions; the new Encarta World English Dictionary (1999) was released both as a printed book and a CD-ROM.

In many circumstances, reading an electronic dictionary is far superior to reading a traditional paper dictionary book. Some features of electronics dictionary over traditional paper dictionary is stated below:

i) Portability: The wonderful thing about electronic text is that it takes up virtually no room, in both a physical and digital sense. If someone has a storage card, he/she can walk around with at least a dozen books, and probably many more than that

ii) Features: Because electronic books are digital, not only are they super-portable, but they also open up the possibility for some really useful features. Digital formats-assuming copy protection doesn't get in the way-can be duplicated forever without decay or any real expense.

iii) Easy to read: The electronic format offers readers even more benefits over traditional paper books. We will discuss this feature in detail later in this paper.

iv) Durability: The readability of an electronic dictionary won't degrade over time, the pages won't crumble because of high acid content, the binding can never break, and there can be no variations in the ink. Electronic dictionary are often more convenient than their paper based counterparts.

Generally, peoples consult dictionary mainly for two reasons. First to know the meaning of a word. There is other information we need about words that is not usually found in traditional dictionaries but is published m separate volumes Even more types of these resources are turning up in newer electronic versions. Some examples are Thesaurus, Rhyming dictionaries, Crossword puzzle dictionaries.

SELECTION OF SOFTWARE AND IMPLIMENTATION

The software which is proposed for the development of this Bilingual dictionary is: JAVA as front-end and MYSQL database as backend database. Here (Fig.2) shows the context diagram of the data flow diagram (DFD) of the proposed bilingual dictionary. The USER gives the word search to dictionary program which is the source language, the Manipuri word. The DICTIONARY SEARCH program searches the word from the DICTIONARY DATABASE and return the word to the USER if not the valid word is entered in the PERSONAL-DICTIONARY-ENTRY database.
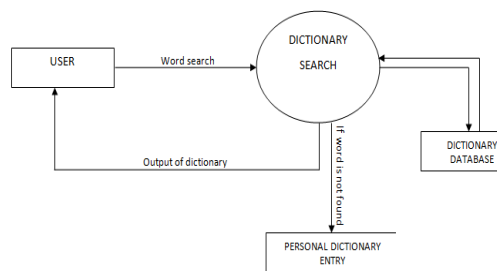

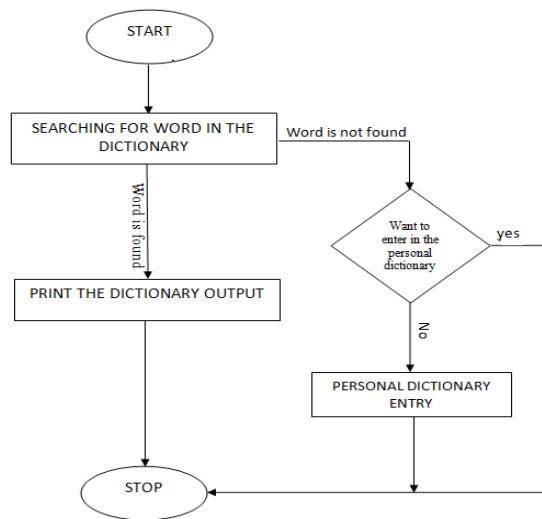Fig.2: Dictionary search DFD(context diagram)

Fig. 3: flow chart

The algorithm of the above (Fig. 3) flow chart is given as.

1. START.
2. Search of the word in the Dictionary (source is the Manipuri word and target is the English).
3. If word is found. Then Print the word and its corresponding information: STOP.
4. If word is not found: and do you want to Entry it in PERSONAL DICTIONARY ENTRY.

    4 (a). If (Option="yes")

        Personal Dictionary entry is   done : STOP

    4 (b). If (Option="no")

      Display a message: Word is   not found: STOP

CONCLUSION

This paper is to prove that the Electronic-Dictionary developed has gained positive remark from computer experts and experienced Manipuri language users. The Electronic-Dictionary adopts the design of an electronic dictionary with user friendly features using interesting and attractive colour display. The paper has also shown that Electronic-Dictionary can help the teaching and learning process of Manipuri language with savvy, smooth and time-saving application. It also has educational values on inspiring the interest of students to learn and helping the instructors to achieve the objectives of lesson. This paper is to be a contribution to the quality of education in Manipuri language corresponding with the development of education technology. Further research should be carried out either directly or indirectly by those who involved in the study of Manipuri language. the proposed algorithm is also include in the (fig.3) This is vital to ensure that Manipuri language is highly valued and continues to be developed in future.

REFERENCES

[1] Bhat, D. N. S.; & Ningomba, S. "Manipuri grammar". Munich: Lincom Europa. (1997).
[2] Chelliah, Shobhana L. Experiencer subjects in Manipuri. In V. M. Manindra & K. P. Mohanan (Eds.), "*Experiencer subjects in South Asian languages*" Stanford: The Center for the Study of Language and Information. (195–211). (1990).
[3] Chelliah, Shobhana L. Tone in Manipuri. In K. L. Adams & T. J. Hudak (Eds.), "*Papers from the first annual meeting of the Southeast Asian Linguistics Society 1991*". Tempe, AZ: Arizona State University. (65–85). (1992).
[4] Chelliah, Shobhana L. "*A grammar of Meithei*". Berlin: Mouton de Gruyter. ISBN 0-19-564331-3. (1997).
[5] Ch. Yashwanta Singh "The Linguistic Situation in Manipur". In LTBA . Vol. 18:1 Spring. (1995)
[6] Ch. Yashwanta Singh "Manipuri Grammer". Rajesh Publlications, New Delhi. (2000)
[7] G.A.Grierson LSI, Vol III. Part III .!st Edition , Motilal Banarasidas. Delhi, (1903).
[8] Singh,Imoba "Manipuri to English Dictionary ".(2004)
[9] Sharma.H. Surmangol"Learners' Manipuri Dictionary", Sangam Book Store, Paona Bazar, Imphal ,(2006).
[10] T. C. Hudson 'the meiteis' Neeraj Publication House, New Delhi,(1975)