

24.900: Fieldwork on the Mongolian language

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1 Introduction

Mongolian is the primary language of almost three million people living in the Central Asian country of Mongolia. It belongs to the Mongolian language family, which includes twelve other languages spoken in the region. My source for this assignment is Enkhmunkh (Enky) Zurgaanjin. He is from the capital city, Ulaanbaatar, and speaks the Khalkha dialect. A brief bio:

Enky is a member of the Class of 2009 in the EECS department. Notably, he is the first Mongolian citizen to attend MIT.¹ After spending the first sixteen years of his life in Mongolia, Enky moved to the UK to finish his last two years of high school. Even after coming to MIT in 2005, he has spent a quite a bit of time in his home country, having organized a college-preparatory program for Mongolian high school students in summer 2006; and, more recently, having worked as an ambassador for the Media Lab's One Laptop per Child project to Mongolia. During the interview, when asked to assess his knowledge of the language, he described himself as "pretty darn good."²

I was fortunate enough to become friends with Enky during our 18.02 and 18.03 sessions during freshmen year. He graciously took time from his 6.170 work in order to help me complete this assignment!

2 Vocabulary

In this section we list about seventy Mongolian pronunciations of simple words. They are given in the format: (Index, English term, Mongolian pronunciation in IPA).

<i>Numbers</i>		
1	One	niŋ
2	Two	hɔjɥɥɥɥ
3	Three	gɔɔɔv
4	Four	dɔɔɔv
5	Five	tav
6	Six	zɔɔɥɥɥɥ
7	Seven	dɔɔɥ
8	Eight	næm
9	Nine	jɥs
10	Ten	ɑɔ

¹Source: <http://web.mit.edu/newsoffice/2005/international-0921.html>

²Actually, I suggested these words. He merely agreed with them!

<i>Family</i>		
11	Mother	ɛʃ
12	Father	av
13	Son	hu
14	Daughter	ɑʔkəŋ
15	Grandfather	ɔvɔ
16	Grandmother	ɛmɛ
17	Grandson	ɑʃ
18	Granddaughter	zɛ
19	Yurt	gɒɪ
20	Family*	gɒɪbul

(*) The interview took the following pattern. I would read the English word, after which Enky would pronounce the word in Mongolian. Following this, I would attempt to “calibrate” my interpretation by repeating the pronunciations. For most sounds I was able to reproduce them to the satisfaction of Enky. However, the consonant that was the most troublesome was the /l/ at the end of a word. In particular, I’d consistently hear a distinct /ʃ/ consonant concluding Enky’s pronunciations, as in /*gɒɪbulʃ/ ‘family’. When I repeated the words to Enky, however, he was not happy with my addition of extraneous /ʃ/ consonants. After a while, feeling defeated, I read the word as if I were simply reading English (notably, without the /ʃ/). Enky claimed that this reading was perfect! We spent some time discussing and pronouncing /l/’s, only to conclude that I could not distinguish Enky’s pronunciations of /*gɒɪbulʃ/ and /gɒɪbul/. This was very strange.

<i>Animals, etc.</i>		
21	Dog	nɔhɔ
22	Cat	mɒɪ
23	Horse	ɑt ^h o
24	Horseman	ɑt ^h otʃiŋ
25	Pig	gɛxhɑj
26	Chicken	tɛxhə
27	Cow	oxhu
28	Fish	zaxhas
29	Pork	gɛxhɑjmax
30	Chicken (food)	tɛxhejnax
31	Beef	oxhɪmax
32	Seafood	zaxhas
33	Apple	ɑlm
34	Carrot	luvan

<i>School</i>		
35	School	sə.ɪɡoʃ
36	Pencil	hɑ.ɹʊndɑ
37	Book	nɒm
38	Library	nɒmənəsəɪ
39	Physics	fɪsɪk
40	Chemistry	hɪm
41	Engineering	ɛnʒɪniə
42	Math	mæt ^h əmət ^h ɪk
43	Algebra	ɑlɡɪbrʊ
44	Angle	ɒntsʊɡ
45	Triangle*	ɡɒrɒvɪltʃɪm
46	Square*	dʊrʊvɪltʃɪm
47	Pentagon**	təvɒnəntsʊɡ
48	Circle	təɪɡ

(*) Two notes about the Mongolian pronunciation for the words ‘triangle’ and ‘square’:

1. The consonant /tʃ/ in /ɡɒrɒvɪltʃɪm/ ‘triangle’, and /dʊrʊvɪltʃɪm/ ‘square’ could have very well been a /z/ or a /ʒ/. The sound seemed like a mixture, and was difficult to assess.
2. In pronouncing the word /dʊrʊvɪltʃɪm/ ‘square’, Enky frequently omitted the consonant /v/ in the middle. It was only after I pointed out that he was not being consistent with the pattern established with /ɡɒrɒv/ ‘three’ and /ɡɒrɒvɪltʃɪm/ ‘triangle’ that he corrected himself, only to again omit the /v/ in the future! It seems as if in normal speech the /v/ in these words can be dropped.

(**) Note: /təvɒnəntsʊɡ/ ‘Pentagon’ = /təv/ ‘five’ + /ɒntsʊɡ/ ‘angle’. Very logical.

<i>Nations</i>		
49	Country	ʊls
50	China	hɪt ^h ɛd
51	Korea	sɑlɹɪŋɡɔs
52	Rainbow*	sɑlɹɪ
53	Japan	ʃɑpɒn
54	Russia	ɒɹɪəs
55	Mongol**	mɒŋɡɒl
56	America	ɑmɛɹɪk

(*) Although ‘rainbow’ is not a country, it appears in this section because it is a free morpheme appearing as a root in the Mongolian word for Korea. Enky began to tell me a story relating Koreans and rainbows... I don’t recall! You’ll have to ask him!

(**) Another instance of a word ending in /l/ that gave me so much trouble!

<i>Miscellaneous</i>		
57	Fiction	tuɪ
58	Opera	duɪ
59	Foundation (of a building)	suɪ
60	House	bɑfɪm
61	Water	os
62	Swimming Pool*	osnɪsɑŋ
63	Ignite	as
64	Television	zɔɪɛt
65	Picture	zɔɪɛg
66	Radio	ɪɛdɪo
67	Robot	ɪɔbɔt
68	Computer	kɑmpjʊtɔ
69	“What’s up?”	u bɛn
70	Greeting when picking up phone	bɛno
71	Moon	sɑɪ
72	Yellow	ʃɑɪ

(*) Note the use of /-sɑŋ/ to turn /os/ ‘water’ into /osnɪsɑŋ/ ‘swimming pool’. Compare this to the words /nom/ ‘book’ and /nommsɑŋ/ ‘library’. The suffix /-sɑŋ/ is a morpheme in Mongolian that has possible meanings: “collection,” or, “a lot of”. This hypothesis was confirmed by Enky.

3 Vowels of the language

The main vowels of English are well represented in the Mongolian data. Mongolian also seems to make frequent use of the /ʊ/, a high back unrounded vowel. This was rather convenient for me, being familiar with a language (Korean) which also utilizes this vowel.

/i/	front, high, tense	at ^h otʃɪŋ	‘horseman’
/ɪ/	front, high, lax	nɪg	‘one’
/ej/	front, middle, tense	tɛxhejnax	‘chicken (food)’
/ɛ/	front, middle, lax	hɪt ^h ɛd	‘China’
/æ/	front, low, lax	næm	‘eight’
/ʌ/	central, middle, lax	gʌɪ	‘yurt’
/ə/	central, middle, lax	ɑmɑɪk	‘America’
/ʊ/	back, high, lax, rounded	dʊ.ʊv	‘four’
/ʊɪ/	back, high, unrounded	hɑ.ʊmɔdɑ	‘pencil’
/o/	back, middle, tense	gɔ.ɪov	‘three’
/ɔ/	back, middle, lax	ɔvɔ	‘grandfather’
/ɑ/	back, low, tense	ɑt ^h o	‘horse’

4 Consonants of the language

For this section, I referred to the entries of the English IPA consonants table (pg. 36 of the textbook), looking for applicable entries in the Mongolian data. Unfortunately, due to the larger number of consonants (than vowels), I do not have examples corresponding to each English consonant. Furthermore, it was difficult to interpret certain consonants (for example, see the discussion of /l/ and /tʃ/ in Section 2).

/b/	labial, stop, voiced	algibuɪ	'algebra'
/m/	labial, nasal, voiced	nom	'book'
/f/	labiodental, fricative, voiceless	fɪsɪk	'physics'
/v/	labiodental, fricative, voiced	ɑv	'father'
/t/	alveolar, stop, voiceless	tɛxhə	'chicken'
/d/	alveolar, stop, voiced	dʊrʊv	'three'
/s/	alveolar, fricative, voiceless	səɪɡɔf	'school'
/z/	alveolar, fricative, voiced	zɔɪɛt	'television'
/n/	alveolar, nasal, voiced	mongol	'Mongol'
/l/	alveolar, liquid, voiced	ɡɑɪbul	'yurt'
/ɭ/	alveolar, liquid, voiced	ɑɪɔ	'ten'
/ʃ/	alveopalatal, fricative, voiceless	ʃɑɪ	'yellow'
/ʒ/	alveopalatal, fricative, voiced	ɛnʒɪmɪɪ	'engineer'
/tʃ/	alveopalatal, affricate, voiceless	ɡɔɪɔvɪltʃɪm	'triangle'
/j/	palatal, glide, voiced	ʃɑpɔn	'Japan'
/k/*	velar, stop, voiceless	kɑmpjʊtɔ	'computer'
/g/	velar, stop, voiced	təɪɡ	'circle'
/x/**	velar, fricative, voiceless	oxhu	'cow'
/ŋ/	velar, nasal, voiced	ɑtʰɔtʃɪŋ	'horseman'
/ʔ/	glottal, stop, voiceless	ɑʔkən	'daughter'
/h/	glottal, fricative, voiceless	nɔhɔ	'dog'

(*) I was informed by Enky that /k/ is not a native consonant in the Mongolian language, and that its presence in words indicates the word's foreign origin, i.e. /ɑmɛɪk/ 'America.' Interestingly, this also means that /mætʰɛmætʰɪk/ 'math' and /fɪsɪk/ 'physics' are also foreign words. Strangely enough, the Mongolians have their own word /hm/ for 'chemistry' even though they lack a native term for math!

(**) Here is another consonant that is not used in English. I may have made a mistake in transcribing this sound as /x/. However, I have studied German in high school which makes very frequent use of this sort of sound. The pronunciations that Enky made reminded me very much of this consonant in German.

5 Phonology

5.1 If the language seems to have both /l/ and /ɭ/, are they different phonemes or allophones of the same phoneme?

Unfortunately, I could not find any minimal pairs that will allow us to easily distinguish whether /l/ and /ɭ/ are distinct phonemes. However, a brief comparison of the immediate environments of /l/ and /ɭ/ reveal similarities. In particular, both are frequently found between two vowels.

Consider the entries (22) /mɔɪ/ 'cat' and (55) /mongol/ 'Mongol'. The two consonants both occupy identical terminal positions in the word; as well as being preceded by a common vowel /o/. From this (somewhat) near-minimal pair, and the similarity of the environments in which the two sounds are found elsewhere, we conclude that /l/ and /ɭ/ are distinct phonemes in Mongolian.

The answers to the following two problems are cleaner.

5.2 Does the language distinguish voiced from unvoiced stops? Aspirated from unaspirated? If Yes, are these distinctions predictable or phonemic?

Consider the minimal pair: /tuɪ/ 'fiction' and /duɪ/ 'opera'. Since the two lexical entries are distinct, and the only phonetic distinction is the voice-property of the initial consonants, the voiced/unvoiced distinction must be phonemic.

While my data on aspirated and unaspirated consonants is very limited, /t^h/ is seen in entries (23), (24), (42), (50). Interestingly, in these cases, the /t^h/ is contained in between two vowel neighbors. Discounting entry (68) /kʌmpjutɔ/ 'computer' on the grounds that it is of foreign origin, we note that whenever an unaspirated /t/ appears, it is *never* surrounded on both sides by vowels!

While in no way conclusive, the data collected here seems to suggest the possibility that aspiration of /t/ may be predictable in Mongolian.

5.3 Does the language use both /s/ and /ʃ/? If so, are they separate phonemes or allophones of the same phoneme?

Take the minimal pair: /sʌɪ/ 'moon' and /ʃʌɪ/ 'yellow'. From this, it is clear that /s/ and /ʃ/ are distinct phonemes.