

Speech Disguise (Bird Talk) and its Role in Phonological Analyses

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In this article I present an Armenian-based speech disguise which, I assume, provides sound evidence for the internal hierarchical structure of Armenian syllables, certain relations between the subsyllabic constituents in the process of syllabification, as well as prosodic/metrical structure of the language.

However consistently some theorists (Ohala & Kawasaki-Fukumori 1997:343-365; Steriade 1997, 1999:205-242) try to underestimate or even deny the significance of the syllable in phonological analyses; Armenian syllabification facts strongly support the syllable-based analyses. Moreover, the facts discussed in this article pretend to add more evidence to the relevance of the syllable-based phonological and psycholinguistic approaches. Syllables play an important role in phonological awareness, speech processing and reading (Ferrand, Segui & Humphreys 1997:458-470).

Language games and speech disguises (also known as ludlings, from the Latin *ludus* – game and *lingua* – language) are not created independently, in a vacuum. They employ rules and principles mostly characteristic of a source language. Thus, creating various alternations and linguistic contexts that simply cannot or do not normally occur in a language, “they often reveal crucial information about the structure of a language or a language in general” (Walter 2002:178). These particular alternations and theoretical accounts for why they take the forms that they do and how the phonological units are treated in those systems, tell the theorists much about the nonlinear representations, metrical structures, prosodic operations, etc. of the base language. Bagemihl claims that ludlings are an integral part of human linguistic capacity and as such constitute an integral part of linguistic theory (Bagemihl 1995:711).

The speech disguise to be analysed further in this article is especially interesting in a sense that it is not spoken by some particular social or age group. The age of the speakers of this ludling ranges from schoolchildren to elderly people (mostly illiterate). The speech disguise named “Bird Talk” constitutes an important part of the oral culture of this rural community (therefore, manipulation of spelling in their communication should probably be excluded). Bird Talk is based on the normal speech of Armenian; it involves systematic alternation to it consisting of infixation. There are no explicit instructions or “rules” about how to speak this language (note the age and different levels of education of the “learners”). The ludling is acquired simply by being exposed to it and later on involved in communication.

Bird Talk, like the English *Ubbly Dubby* or *Ibenglish*, employs an iterative infixation mechanism (Yu 2008). Affix /əg/ is inserted between the onset and rime (or rhyme). This particular insertion site may be explained by the fact that manipulations that respect the unity of onsets and rimes are more easily learned than those that do not (Treiman 1983:49-74, 1986:471-496). The stress is on syllable following the insertion site. Thus, -əg- is inserted before every nucleus yielding (C) əgV syllables. Those, in turn, are parsed as (C) ə.gV', e.g.

(1)		
Source word		Ludling word
mori (raspberry)		mə.gə-rə.gi
amaR (summer)		ə.gə-mə.gəR

The stress is assigned to the second (final) syllable. As the analysis shows this ludling imposes strict prosodic condition on the output forms. Examples above display a systematic rhythmic alternation of unstressed and stressed syllables. - əg- is inserted into each syllable so as to form a iamb (metrical structure characteristic of non-ludling Armenian):

(2)			
Source word		Ludling word	Iambic foot
hajr ‘father’		hə.gajr	(. *)
jeram ‘flock’		jə.ge.rə.gam	(.*)(.*)
əʁavni ‘pigeon’		ə.gə.ʁə.gəv.nə.gi	(.*)(.*)(. *)

It should be noted that in bisyllabic feet the rimes of the source words occur in a foot-head position. This, I assume, is not accidental. Rimes in Armenian constitute mostly the bigger part of syllables as compared to non-branching onsets (cf. C.VC or C.VCC). Hence, rimes may convey more information about the source word and thus serve as perceptual support for the ‘speakers’. Being in a strong position, i.e. in the foot head, makes the source syllable maximally stand out via stress (Harris 2000: 3):

(3)		
Source word		Ludling word
hart ^h s.nél ‘ask’		hə.gárt ^h s.nə.gél
ajr.vátsk ^h ‘burn’		ə.gáj ^h r.və.gátsk ^h
hajt ^h s.vór ‘applicant’		hə.gáj ^h t ^h s.və.gór
sand.ʁák ‘scale’		sə.gánd.ʁə.gák

The rhythmic alternations of the “disguised” words, i.e. the output representations, are controlled by the constraints on the well-formedness of feet in the language. In general, the left edge of each source syllable must correspond to the left edge of a foot in the output form. As the speech disguise in question demands that the disguised words be parsed into bisyllabic strings of iambs, syllabic foot binarity is satisfied through affixing a monosyllable, e.g. *sur* ‘sabre’ → sə.gúr, *katú* ‘cat’ kə.gá.tə.gú, *jeʁanák* ‘weather’ → jə.gé.ʁə.gá.nə.gák, where the schwa of the affix /əg/ and the vowel of the source syllable rime secure the requirements of bisyllabic feet:

(4)				
Source word	Ludling word	Source syllable(s)	Footing	
súr ‘sabre’	sə.gúr	σ	σ	σ
		N	N	N
		sur	sə . gúr	(. *)

katú ‘cat’	kə.gá.tə.gú	σ	σ	σ	σ	σ	σ
		N	N	N	N	N	N
		ka	. tú	kə.	gá.	tə.	gú (*)(*)

This far the affixation strategy may look quite straightforward and simple. There are, however a couple of points worth discussing:

i. How are the disparities between the underlying and surface forms translated into the Bird Talk?

ii. Are all the phonotactic constraints of source language treated similarly in the speech disguise?

So far, the examples (in (1), (2), (3)) had CV(C) or CVC(C) syllable structure. Let us now consider an underlying CCV(C), and sibilant + stop (ST) VC forms: CCV(C), as discussed earlier in this paper, will be parsed as (a) C.CVC and (b) STVC will take a form of S.T.VC (according to the Minimum Allowable Onset Principle (MAOP):

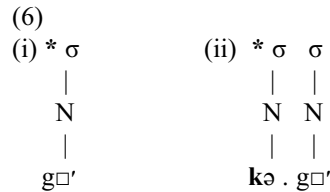
(5)

Source word	Syllable parse	Epenthesis	Ludling word	Gloss
a. CCVC	C.CVC	Cə.CVC	Cə.gə.Cə.gVC	
/k ^h sak/	/k ^h .sak/	[k ^h ə.sak]	k ^h ə.gə.sə.gak	‘purse’
/slak ^h /	/s.lak ^h /	[sə.lak ^h]	sə.gə.lə.gak ^h	‘arrow’
/vtak/	/v.tak/	[və.tak]	və.gə.tə.gak	‘stream’
/fnorh/	/f.norh/	[fə.nor]	fə.gə.nə.gor	‘grace’
b. STVC	STVC	əS.TVC	ə.gəS.Tə.gVC	
/skizb/	/s.kizb/	[əs.kizb]	ə.gəs.kə.gizb	‘beginning’
/zguj/	/z.guj/	[əz.guj]	ə.gəz.gə.guj	‘careful’
/fpar/	/f.par/	[əf.par]	ə.gəf.pə.gar	‘makeup’
/spitak/	/s.pi.tak/	[əs.pi.tak]	ə.gəs.pə.gi.tə.gak	‘white’

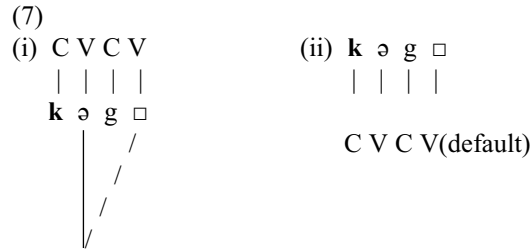
The speakers of Bird Talk, as I assume, use surface representations as input. One good reason for them to do so may be the fact that the underlying forms of source language surface having already undergone the necessary phonotactic changes to satisfy the Universal and language-specific well-formedness conditions.

Manipulating ready-made well-formed syllables of the source language is more reasonable and easier than to undergo several stages from the underlying representations to ludling forms. Thus, starting with the underlying form of e.g. /k.rak/ would require a speaker to insert -əg- in it which would take the form kə.g.rák. Here, apparently the second syllable of kə.g violates foot binarity. The next step for a speaker would be to think of augmentation strategy, that is – to fill the empty nucleus position of kə.g□.rə.gák which is also a potential stress-bearing nucleus position.

Thus, kə.g□ is an ill-formed ludling syllable with respect to two factors:
 (i) the g□ syllable misses the obligatory nucleus constituent;
 (ii) kə.g□ violates the foot binarity:



Another problem for a speaker to deal with this source syllable is to think of how to fill the nuclear position: the augmentation of the nucleus can be achieved either by copying the nucleus vowel of the affix (schwa in this case) or by inserting some form of default vowel segment:



To avoid all these stages, a Bird Talk speaker simply takes the surface form of a source syllable and makes the necessary extensions. The surface epenthetic schwa does a great deal of work here: all nuclei surface filled:

(8)

Underlying form	Epenthesis (Surface form)	Ludling form	Gloss
/k.rak/	[kə.rak]	kə.gə.rə.gak	'fire'
/s.xal/	[sə.xal]	sə.gə.xə.gal	'mistake'

STV(C) forms are manipulated the same way as the CCV(C) forms, that is – the disguised forms deal with the surface representations only; eg.: /skahak/'cup' → /s.kə.hak/ → [əs.kə.hak] → the affix əg is attached as the rule of the ludling predicts ə.gə's.kə.gá.hə.gák.

The speakers of Bird Talk are incredibly good at dealing with initial coda sibilants. This is also obvious in their connected speech:

(9)

Underlying source sentence	a./du mi sks-ir/	b./ed mard-n spa tfe/
Surface syllabification	[du.mis.kə.sir]	[ed.mard.nəs pa.tfe]
Bird Talk translation	də.gú.mə.gís.kə.gə'sə.gír	ə.géd.mə.gárd.nə.gə's.pə.gá.t ə.gé
Gloss	'You do not start'	'That man is not an officer'

Besides, it is the oral speech that is being manipulated which in turn is identified with surface forms, in other words, the ludling manipulates the phonetic forms of the words. Hence, underlying silent or/and geminate segments are ignored, e.g.

(10)

Underlying form	Phonetic form	Ludling form	Gloss
/af.xar.hik/	[af.xa.rik]	ə.gaf.xə.ga.rə.gik	‘secular’
/tʃa.na.par.hord/	[tʃa.na.pa.rord]	tʃə.ga.nə.ga.pə.ga.rə.gord	‘traveller’
/uɛʁaki/	[u.ɛa.ki]	ə.gu.ɛə.ga.kə.gi	‘simply’
/tarrakan/	[ta.ra.kan]	tə.ga.rə.ga.kə.gan	‘elementary’

The next point to be discussed is whether all the phonotactic constraints of the Armenian source language are treated similarly in the Bird Talk.

As a matter of fact, Bird Talk employs well-formed source language syllables, inserting a VC(əg) affix into licit (C)(C)V(C)(C) syllables which in turn yield absolutely legal CV.CV(C)(C) or V.CV(C)(C) sequences:

(11)

Syllable type	Source word	Affix /əg/	Bird talk word	Gloss
CV	bu	bə.gu	bə.gú	‘owl’
VC	iʒ	ə.giʒ	ə.gíʒ	‘viper’
C.CV	kə.tsu	kə.gə.tsə.gu	kə.gə'.tsə.gú	‘hot’
VCC	ajt	ə.gajt	ə.gájt	‘cheek’
CVC	sar	sə.gar	sə.gár	‘mountain’
C.CVC	xə.rat	xə.gə.rə.gat	xə.gə'.rə.gát	‘advice’
CVCC	mirk ^h	mə.girk ^h	mə.gírk ^h	‘fruit’
C.CVCC	bə.rindz	bə.gə.rə.gindz	bə.gə'.rə.gíndz	‘rice’

A similar treatment does not hold, though, for source syllables containing initial consonant clusters with a glide segment in them, like *kjank^h* (life), *bjur* (many), *njut^h* (material), *gjuɛ* (village), *skjuɛ* (squirrel), *djurin* (easy), etc. While Cj clusters in Armenian do not violate Minimum Allowable Onset Principle (MAOP):

(12)

djurin ‘easy’			
* σ	σ	σ	σ
Λ	Λ	Λ	Λ
O N O N O	O N O N O		
Λ			
d j u r i n	d ^j u r i n		

Bird Talk does not tolerate even a palatalised onset consonant. (Note that it does not treat final CC clusters any differently from the source syllables). Leaving the rime constituents intact, the rules of Bird Talk first split the Cj cluster (Idsardi 2005) then the epenthesis strategy of the source language is adopted and exploited on a form which the ludling treats as an initial C.C cluster (C.j). It surfaces epenthesised – Cə.C (sə.jun

“column” by analogy with, e.g. srah-sə.rah “hall”. This very CəCVC form serves as input for ludling word formation:

(13)

Source word	Ludling parse	Epenthesis	Ludling word	Gloss
CjVC(C)	C.jVC(C)	Cə.jVC(C)	Cə.gə.jə.gVC(C)	
hjur	h.jur	hə.jur	hə.gə.jə.gur	‘guest’
dzjun	dz.jun	dzə.jun	dzə.gə.jə.gun	‘snow’
kjank ^h	k.jank ^h	kə.jank^h	kə.gə.jə.gank^h	‘life’

Syllables with SCj clusters are converted into Bird Talk in following steps:

1. S is assigned to a coda ə.gəS,
2. The legal source onset Cj is split into two ‘syllables’ C.CVC = C.jVC,
3. The onset and infix segments are mapped onto a well-formed bisyllabic foot,
4. The rightmost rime is treated as usually.

Let us see how this procedure works on actual examples:

(14)

Source word	skjur ‘squirrel’	sp ^h jurk ^h ‘diaspora’
1. Assign initial S to coda	əs.kjuR	əs.p ^h jurk ^h
2. Split the Cj cluster	əs.k(ə).juR	əs.p ^h (ə).juRk ^h
3. Form a bisyllabic foot	ə.gəs. kə.g(ə)	ə.gəs.p ^h ə.g(ə)
4. Treat the remaining syllables	jə.gur	jə.gurk ^h
Ludling word	ə.gəs. kə.gə.jə.gur	ə.gəs.p ^h ə.gə.jə.gurk ^h

Crucially, as it appears, the reason for fracturing the legal onset segments is not phonologically conditioned. To a question why the Cj onset is disfavoured as a solution in the game, one of the ludling “speakers” explained that the fracturing the beginning of the source CC words makes the ludling word more difficult to decode. This claim by a naive speaker (i.e., someone without linguistic training) is compatible with the hypothesis that in speech perception syllable onsets “provide privileged entry or reference points for segmentation and lexical access” (Content et al 2001:197). Hence the aims of a speech disguise to conceal a conversation from outsiders. The speakers split the initial consonant segments – even those permitted in non-ludling Armenian – to make the process of lexical access as complicated as possible. The present results provide further evidence for the view that syllables in Armenian have a hierarchical structure.

The examination of the rules of the speech disguise, in general, testify to the fact that even illiterate people may have an incredible command over the language they speak, manipulate syllables and employ syllabification strategies as well as acquire a speech disguise without even consciously knowing the “rules” (Denham 2005).

The analysis of the Bird Talk – an Armenian speech disguise – turns out to be quite an interesting and specific way to learn about the native Armenian speakers’ intuitions about their language structure (syllables, syllable-internal hierarchical relations, metrical properties), and which is even more interesting to find out about the native speakers’ unconscious awareness of perceptual processes and manipulating them.

The very fact of inventing and passing on ludlings in oral cultures is enough to suppose that both universal and language-specific rules and principles have control over the forms the ludling takes. The metrical spell-out of this particular ludling quite obviously contains the foot structure and the stress of the Armenian word.

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Գաղտնալեզուն («Ծտի լեզուն») ու նրա դերը հնչույթաբանական վերլուծության մեջ

Գաղտնալեզուներում արձանագրվող որոշակի հերթագայություններն ու տեսական բացատրություններն այն մասին, *թե ինչու են գաղտնալեզվի կառույցներն ընդունում հասկապես այս կամ այն ձևերը, և թե ինչպիսին են լինում հնչույթաբանական մոտեցումները այդպիսի համակարգերում*, տեսաբաններին շատ բան կարող են հուշել հիմք-լեզվի ոչ-գծային արտահայտությունների, չափական կառույցների, առոգաբանական գործողությունների և էլի շատ այլ լեզվաբանական իրողությունների մասին: Հայերենում գաղտնալեզվի՝ «Ծտի լեզվի» հնչույթաբանական վերլուծությունը հետաքրքիր ու բացառիկ միջոց է ծանոթանալու, հաղորդակից լինելու բնիկ խոսողների լեզվական բնագղներին: Այսպիսով, գաղտնալեզվի «կանոնների» քննության մեջ, ընդհանուր առմամբ, արտացոլվում է այն իրողությունը, որ նույնիսկ անգրագետ, անգրաճանաչ մարդիկ կարող են զարմանալիորեն լավ տիրապետել լեզվի կառույցներին, հմտորեն բանեցնել վանկի բաղադրիչներն ու ենթաբաղադրիչները, ավելին՝ կիրառել վանկատման բարդ մեխանիզմներ՝ առանց երբևիցե գիտակցորեն տիրապետելու քերականության համապատասխան կանոններին: