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Sonority Sequencing Principle in initial cluster consonant in Sistani Dialect

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Abstract

This research aims to study the phonotactics of Sistani Dialect, to show sonority sequencing principle is being verified. For this purpose, all consonant sequences in Sistani in initial position of words were extracted. Consonant clusters are identified and

compared with sonority sequencing principle, based on the data obtained, except in some case for instance when each of s, ʃ & z is present in the cluster, data are confirmed to sonority sequencing principle and syllable structure in Sistani Dialect is (C)(C)V(C)(C).

Key words: Sistani Dialect, Phonotactics, Sonority Sequencing Principle, Consonant Cluster.

Introduction

Sistani Dialect is member of western Iranian group of languages that is spoken in Sistan as well as Sarakhs in khorasan, Zahedan, Golestan province of Iran, South of Torkamanistan, parts of Afghanistan such as Nimrooz and Fara and Balochestan Province in Pakistan (Yarshater,1985:348-365).

The Iranian Sistani dialect is spoken by total of about 350000 inhibitants in sistan region of provinces of Sistan & Balochestan (Ahangar, 2009:80).

Although Sistani dialect is under heavier influence of standard Persian but many characteristics for instance, initial cluster consonant of old Persian has been conserved in this dialect.

The purpose of this article is investigation of the phonotactics of Sistani dialect to show sonority sequencing principle is being verified.

1.2 Phonotactic and Sonority

Languages of the world differ in their syllable phonotactics. Kenstowicz(1994:250) describes phonotactics as follow:

"Phonotactic constraint refers to limitations on the distribution of sounds and sound sequences at various points (initial, medial, final) in the phonological word or phrase. Typically, these limitations, are not result of a phonological rule changing, are sound into another. Yet it is quite clear that they must follow from the speakers internalized grammar."

The definition of phonotactics is under the title of syllable by Ewen & Van der Hulst (2001:123):

If a native speaker had no access to syllable structure, and could do no more than identify sequences of segments as being well formed or ill formed in his or her language? In the other hand, the native speaker of English would identify the string */lmɒk/ as ill formed because the consonant cluster /lm/ cannot occur at the beginning of any English word. In other words, the initial sequence */lm/ violates the **phonotactic constraints** of English.

Some languages are extremely restrictive and only allow CV sequences; others allow more complex structures both in the margins and nuclei. Across languages, segments are organized into well-formed sequences according to universal principles of segment sequencing. The organization of segments within the syllable, and across syllables, is traditionally assumed to be driven by principles of sonority, a property that ranks segments along a hierarchy from most sonorous to least sonorous. A number of strong cross-linguistic tendencies on the distribution and sequencing of segments is explained with reference to the *Sonority Hierarchy* (Morelli,2009:1-29).

1.2 The Sonority Sequencing Principle

Principles such as the *Sonority Sequencing Principle*, introduced as early as the 19th century by Sievers (1881), and later by Jespersen (1904), explains, for instance, the tendency, within a syllable, of more sonorous segments to stand closer to the syllable peak than less sonorous ones. Although the notion that segments are ranked along a scale on the basis of their sonority is broadly accepted, the question of what sonority is and how it could be defined still remains a highly controversial issue, both in the phonetic and in the phonological literature. From a phonetic point of view, researchers disagree on whether a single phonetic parameter should be used to define sonority, i.e. perceptual salience or loudness of a particular sound (Ladefoged, 1982, 1993); or the amount of airflow in the resonance chamber; or whether it should be interpreted in terms of multiple phonetic parameters(Morelli,2009:1-29).

In the phonological literature the issue revolves, instead, upon whether sonority should be a phonological primitive in the form of a multi-valued feature (Foley 1972: 5), or whether it should be derivable from the more basic binary features of phonological theory. Another strategy, instead, is not to deal with the nature of sonority itself, but rather derive the relative sonority of each segment on the basis of their occurrence within a syllable. In other words scales are constructed on the basis of the observed patterns of syllable organization in a language specific way(Morelli,2009:1-29).

1.2.2 Sonority Scales

The many different approaches proposed to derive sonority have led to the proposal of a number of competing scales in the literature. The main issue is whether sonority scales are universal, i.e. there is only a single universal scale common to all languages (Selkirk, 1984: 107-136) or whether sonority scales are language-specific and languages have a certain degree of freedom in the assignment of sonority values to their segments (Morelli,2009:1-29).

Sonority scales with fixed universal values mostly refer to the major natural classes of sounds. Finer distinctions among segments are derived by means of sonority-independent parameters, i.e. voicing, coronality etc. Clements' universal sonority scale, for example, for nonsyllabic segments only consists of the four major natural classes of sounds (obstruents, nasals, liquids and glides) ranked from least sonorous to most sonorous, as in (1) below:

(1) O < N < L < G

Butt's sonority scale differs slightly from Clements' in that he assigns a different value to voiceless and voiced obstruents. His universal sonority scale consists of the following ranking:

(2) Voiceless O < Voiced O < N < L < G < V.

Selkirk (1984) assumes even further distinctions among the obstruents and the liquids and proposes the following universal sonority scale for non-syllabic segments:

(3) p, t, k < b, d, g < f, θ < v, z,δ < s < m, n < l < r

As noted by Steriade (1982), the problem with Selkirk's proposal is that different languages seem to assign contradictory values to the same entries on the scale. Steriade proposes, instead, that languages enjoy a certain level of freedom in the assignment of sonority values to their segments. Clements argues, however, that allowing the sonority scale to vary across languages seriously undermines its explanatory power. Clements writes: "… increasing the number of ways in which the sonority hierarchy can accommodate potential exceptions, will reduce the number of cross-linguistic generalizations that it accounts for". As a matter of fact, both Clements and Butt argue that most of the apparent evidence for language particular variation in the sonority scale comes from observations that can be explained in ways which are sonority independent and should not count in the formulation of the scale(Kambuzia 2011:66).

Methods

Data are gathered through several written books such as "kowr-nameh-nimrooz", "kakolak" and "Goj o va Goj", by Raeis o Zakerin, contemporary Sistani poet(all these works has audio CD by voice of writer) as well as interviews with 24 male & female native speakers of sistani between 25-65 years old. The recent data is recorded by MP3 player. The transcription of all this data is according to International Phonetic Alphabet (IPA). Consonant clusters are identified and compared with sonority sequencing principle.

Data Analysis

Initial cluster consonents in Sistani dialect is usually used in these formats of syllables CCV,CCVC and CCVCC (Ahangar,1382:22).

Examples of initial cluster consonant in Sistani dialect

Cluster Cons.	Sistani	English equivalent	Cluster Cons.	Sistani	English equivalent
[#/ps-]	/pse: /	Son	[#bl-]	/ble:/	Up
[#/pl-]	/plaft/	Withered	[#br-]	/bra:/	Go(imperative)
[#pr-]	/pra:/	Patch	[#bj-]	/bjɑr/	Bring
[#pj-]	/pjɑda/	Person who walks	[#tv-]	/tva:q/	Very big paper
[#bt-]	/bta:rso/	Frighten sb/sth	[#tm-]	/tma: /	Cupidity
[#bd-]	/bde/	Give	[#tn-]	/tnuk/	Spread
[#bk-]	/bkɑr/	Cultivate(IMP)	[#tl-]	/tla:ng/	Push
[#bg-]	/bgo/	Say	[#tr-]	/tra:k/	Cleft-cracking, opening
[#bf-]	/bfa:m/	Understand(IMP)	[#dg-]	/dga/	Another
[#bs-]	/bsoxt/	Burnt	[#dv-]	/dvɑ/	Damination
[#bz-]	/bza/	Hit	[#dm-]	/dmɑq/	Nose
[#bʃs-]	/bʃsa/	Become, get	[#dl-]	/dlo: /	Rash(skin disease)
[#bʒ-]	/bʒappo/	Hit hard	[#dr-]	/dram/	Tinny Barrel
[#bx-]	/bxɑ/	Eat(IMP)	[#km-]	/kma:r/	Waist

[#bq-]	/bqa:nd/	Unfold-spread-lay	[#kn-]	/kneʃk/	Frown
[#bʧ-]	/bʧind/	(S)He harvests	[#kl-]	/kloft/	Thick-coarse
[#bʤ-]	/bʤɑv/	Chew(IMP)	[#kr-]	/krutʃ/	Crisp
[#bn-]	/bnɑ l/	Groan	[#gm-]	/gmo:/	Suspicion-surmise
[#gl-]	/glom/	Swallow of drink	[#zm-]	/zme:/	Splint and the void
[#gr-]	/gro:/	Heavy-expensive	[#zr-]	/zro:/	Heat of fire
[#fl-]	/fliʃ/	Onomatopoeic for frat	[#ʃp-]	/ʃpul/	Whistle
[#fr-]	/fro: ʃ/	Sale	[#ʃt-]	/ʃta/	Get,become,put
[#sp-]	/spest/	Alfalfa	[#ʃk-]	/ʃka:m/	Abdomen, pregnancy
[#st-]	/stɑda/	Stand-wait	[#ʃm-]	/ʃmɑ/	You
[#sk-]	/skat/	Rigid, tight	[#ʃn-]	/ʃnɑs/	Familiar, acquaintance
[#ʃl-]	/ʃlɑr/	Stitch sth	[#ʃj-]	/ʃjɑr/	Narrow chink, conscious
[#sf-]	/sve:/	White	[#ʃr-]	/ʃrap/	Onomatopoeic for quickly falling of sth(especially in water)
[#sv-]	/sva:d/	Basket	[#ʒr-]	/ʒrram/	Sound of rain(onomatopoeic)

[#sx-]	/sxɑlak/	Very salty	[#xv-]	/xva:r/	Announcement, invitation
[#sm-]	/smɑel/	Esmaeil(name)	[#xn-]	/xnuk/	Cyperase
[#sr-]	/srɑ/	House.home	[#xl-]	/xlisak/	See-saw
[#sj-]	/sja:/	Black	[#xr-]	/xros/	Cock
[#zb-]	/zba:r/	Up, over	[#xj-]	/xjɑvo:/	Avenuse, river
[#zd-]	/zdɑ/	I have beaten	[#qb-]	/qbɑl/	Chance,fortune
[#zg-]	/zgar/	Drinking water(by animals)	[#qd-]	/qda:m/	Step, gait
[#zv-]	/zvo:/	Tongue	[#ql-]	/qla:/	Village, country
[#zq-]	/zqɑl/	Coal	[#qr-]	/qref/	Sudden attack(by dog)
[#ʧk-]	/ʧkɑra/	What happened			
[#ʧl-]	/ʧleng/	Name of village in Sistan			
[#ʧr-]	/ʧrox/	Shiny-lustrous			
[#ʤv-]	/ʤvɑl/	Big bag made of cotton			
[#ʤq-]	/ʤqa:r/	Liver			

As mentioned theoretical frame in introduction part, obstruent consonants (stop, fricative, affricative) have least sonorous scale; among the sonorous consonant (nasal,

liquid, glide), glides have most sonorous scales that ranked immediately before the vowels. Now, according to sonority sequencing principle we consider initial cluster consonants in follow tables:

[#ps-]	[#bt-] *	[#bz-]	[#bʤ-]	[#tv-]	[#dg-]	[#km-]	[#gl-]	[#qb-]
[#pl-]	[#bd-]	[#bʃ-]	[#bn-]	[#tm-]	[#dv-]	[#kn-]	[#gm-]	[#qd-]
[#pr-]	[#bk-] *	[#bʒ-]	[#bl-]	[#tn-]	[#dm-]	[#kl-]	[#gr-]	[#ql-]
[#pj-]	[#bg-]	[#bx-]	[#br-]	[#tl-]	[#dl-]	[#kr-]		[#qr-]
	[#bf-]	[#bq-]	[#bj-]	[#tr-]	[#dr-]			
	[#bs-]	[#bʧ-]						

All presented data in above table, except those shown with asterick (*), confirm sonority sequence principle if we set them aside. In other words, these data show, as Selkirk (1984) says, stops have least sonorous scale among obstruent consonant.

p, t, k < b, d, g < f, θ < v, z, δ < s < m, n < l < r

[#fl-]	[#sp-] *	[#sr-]	[#zb-] *	[#ʃp-] *	[#ʒr-]	[#tʃk-] *	[#ʤv-]	[#xv-]
[#fr-]	[#st-] *	[#sj-]	[#zd-] *	[#ʃt-] *		[#tʃl-]	[#ʤq-] *	[#xn-]
	[#sk-] *		[#zg-] *	[#ʃk-] *		[#tʃr-]		[#xl-]
	[#sf-]		[#zv-]	[#ʃm-]				[#xr-]
	[#sv-] *		[#zq-] *	[#ʃn-]				[#xj-]

	[#sx-] *		[#zm-]	[#ʃl-]				
	[#sm-]		[#zr-]	[#ʃr-]				

As said, the tendency, within a syllable, of more sonorous segments to stand closer to the syllable peak than less sonorous ones; in other word, the first segment in initial cluster consonant has less sonority than the next. Presented data shows the cluster consonant shown with aestrik, revoke the sonority sequence principle, but as Clements (2006) declared consonant such as /s/, /ʃ/, because of having sibilant feature in many languages, act in the same manner and they violate sonority sequencing principle.

Butskhrikidze (2002:111) says:

"The frequency of the /s/ + C (obstruent) clusters can be related to the large number of old and recent borrowings from the Indo- European languages, e.g. Greek, Latin, English, etc. For instance, *SP* is attested in /spero/'sphere' ; *Sp*' is attested in /sp'ort'i/ 'sport' and /sp'irali/ 'spiral'; etc."

Kenstowicz (1994:256) emphasizes SSP has main role in the syllabification. He state the more complex syllable inventories found in some languages is severely constrained that requires onset to rise in sonority toward the nucleus and codas to fall in sonority from the nucleus but he except [s, z, d, t, θ] that combine with the following stop to yield a sequence of two obstruent such as string, strange,… .

Conclusion

To briefly summarize, we have seen that the syllable onsets in Sistani are defined by a combination of universal and language- particular information. The contribution of

the UG SSP plays the major role. This language – particular feature must be learned. As Anderson(1969) says, The special status, for instance,[sC] clusters is evident in their unique metrical properties in the Indo – European languages and their tendency to emerge later in language acquisition.

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