

Distinguishing Marked Vs. Unmarked Sounds by Persian Children

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Abstract

The present study aimed at categorizing the two allophones (/v/ and /u/) of morpheme /ɤ/ as marked and unmarked. To do so, thirty- two male students from an elementary school who have just passed the first grade were selected. They were all Persian speakers, learning Farsi as their first language. The elicitation instruments used for data collection was a list of words with /v/ or /u/ sounds with the single written form of /ɤ/ in Persian to which the students have not yet come across (at least in their text books). The participants were required to read aloud the words on the list while their voice was being recorded by the researchers. The data collected were then transcribed based on IPA phonetic features and were analyzed by the descriptive statistics Chi Square to find the frequency with which /v/ or /u/ was pronounced. Results revealed that the difference between the expected and observed frequencies of participants' pronouncing /ɤ/ letter as /v/ or /u/ is quite significant which depicts Persian children's meaningful tendency towards pronouncing /ɤ/ letter as /u/ rather than /v/. To double check the findings, the data was examined against a number of markedness descriptors. Finally, it was concluded that /u/ and /v/ were distinguished as unmarked and marked respectively.

Keywords: marked/unmarked items, child language, allophones, Persian language

INTRODUCTION

Language acquisition research is quite a varied field, and the variety of approaches and perspectives from which one can observe the phenomena of first and second language acquisition is remarkable. The search for language universals has been an important goal of modern linguistics. Universal laws, of which markedness is assumed to be one, are proposed to underlie language acquisition.

An influential view among linguists is that children are born with prior knowledge of the type of categories and rules that are found in the grammar of any human language. This innate knowledge, frequently called Universal Grammar, equips the mind to

acquire any human language. This nativist view, advocated by Chomsky (1965; 1975; 1986), suggests that the grammars of all the world's languages share a basic design. According to Chomsky, although specific grammatical principles vary from one language to another, they are all based on certain fundamental principles that correspond to innate properties of the human mind. Viewing markedness as an innate property of human language was a relatively poor idea. Thus, with the advent of generative linguistics (Chomsky & Halle (1968) markedness was reconceptualized as a property of languages determined by Universal Grammar rather than as a property of individual languages, as assumed by Trubetzkoy (1939). In this view, markedness values are assumed to be predetermined universally.

There are two different approaches to the markedness theory, (a) the 'typological' and (b) the 'transformational' approach. The typological approach was developed by J. Greenberg and is aimed at discovering implicational universals. In a very general sense, implicational universals consist of a generalization concerning the correlation of various properties of language according to certain principles. The Transformational Approach, has been developed by Chomsky who remarks that the process of language acquisition proceeds over a relatively short period of time (compared for instance to second language acquisition). He argues in favor of an innateness of language acquisition process. As a consequence, there must be a number of abstract inherent principles which can be equated with language universals. Thus, any grammar can be divided into a 'core', unmarked grammar and a more marked 'periphery'. The 'core' of language includes universal principles and only unmarked parametric options; the 'marked periphery' of language consists of whatever else lies outside of the core of language (Chomsky 1986).

Jakobson (1941) found that certain categories of a language are less marked (i.e. basic) than others. Unmarked categories are widespread, whereas marked categories are related to a specific language and are conditioned by different factors. Unmarked categories are more 'natural' than marked categories, and that less marked language structures are more easily learned and processed than marked ones. Thus, according to Greenberg (1991, p. 38), "if a marked category A always implies the presence of the unmarked B, a child must acquire B before or simultaneously with A". In acquiring the first language, children seem to follow the same general developmental route. More general rules imply less general rules, which are acquired at a later stage of development. In the transformational approach, core grammar rules are acquired in a relatively short time in comparison with peripheral rules. Core grammar rules and structures are unmarked as opposed to peripheral rules which are marked.

Markedness is said to be an important factor in the development of phonological theories; however, there are different approaches for markedness. One approach assumes a theory of markedness and a formal theory of phonology (or grammar) for language patterns. For example, according to Chomsky and Halle (1968) the goal of markedness theory is to distinguish between more and less natural segments and rules. However, a theory of grammar distinguishes between possible and impossible items.

This model treats markedness as a universal principle which guides language acquisition and the formation of phoneme inventories. In addition, it serves as an evaluation metric on the selection of analytic options in the formulation of phonological rules and underlying representations: “children construct grammars to account for the data they are exposed to within the constraints imposed by the formalism, and an evaluation metric selects the simplest possible grammar for the given data” (Mohanar 1992, p.639). A second approach assumes a single theory. In this view, the goal of a grammar theory is to be able to predict possible grammars and markedness observations as well.

Generally, in phonology, the structures that violate markedness constraints are those that are articulatorily or perceptually more difficult. A structure that violates a markedness constraint is said to be marked otherwise it is unmarked. Because an unmarked structure satisfies a universal constraint, it will tend to occur in optimal forms and thus appear in the languages of the world. Marked structures, by contrast, tend to be suboptimal and thus avoided.

Markedness concept is complicated by the fact that the term is used in different ways; however, the most common usage of the term is Descriptive markedness which has served as an analytic tool to categorize sounds and other linguistic elements. Trubetzkoy (1939) used the term Descriptive markedness to describe the relations among members of a sound opposition: one member of the opposition bears some property or “mark” that the other member lacks. For example, in the set of consonants [m n b d], the nasal sounds [m n] are in opposition to the oral sounds [b d] regarding the property nasal, in that, [m n] bear the “mark” of nasality, while [b d] do not. Thus, nasal consonants can be regarded as the marked category and oral consonants the unmarked category. Markedness descriptors drawn from the literature are presented in Table 1.

Table 1. Markedness descriptors

Unmarked	Marked
Natural	Less natural
Normal	Less normal
General	Specialized
Simple	Complex
Inactive	Active
More frequent	Less frequent
Optimal	Less optimal
Predictable	Unpredictable
Acquired earlier	Acquired later
More Phonetically variable	Less phonetically variable
Articulatorily simple	Articulatorily difficult
Perceptually strong	Perceptually weak
Universal	Language-specific
Ubiquitous	Parochial

In order to predict whether a particular sound pattern is marked or unmarked, we look to the sound that patterns asymmetrically from others within its class. So, The present study is aimed at categorizing the /v/ and /u/ sounds with the single written form of /و/ in Persian as marked or unmarked according to the way first grade elementary students learning Persian as their first language pronounce it in words they have not yet come across with the help of a questionnaire prepared by the researchers, based on the phonetic factors most commonly used as criteria for identifying markedness values in the literature mentioned above. So, the present study is aimed at finding an answer to the following research question:

- Which allophone of the phoneme /و/ is unmarked, /v/ or /u/?

LITERATURE REVIEW

Experimental studies focus on the effects of markedness on interlanguage grammars. "In all cases, the assumption is that unmarked properties will somehow prevail over marked, that ILG will favor unmarked rules or parameter settings" (White, 1989, p.121).

Mazurkewich (1988) adopts 'CP-markedness'. She focuses on the relation between core and peripheral grammar. Her claim is that in learning a marked construction of the target language, second language learners will first adopt the unmarked equivalent. In her experimental study, she looks at the acquisition of English by native speakers of Inuktitut, a language belonging to the Eskimo-Aleut family. "Inuktitut is quite different compared to English and the question of transference in their acquisition of English does not arise" (ib.: 130). The result confirms her initial hypothesis, in that Inuit students in the early stages of L2 acquisition of English show a preference for the unmarked English infinitive construction which will prevail over the corresponding marked English gerund construction (ib.: 137). As observed by White (1989, p: 122), despite the resemblance to Krashen's Natural Order Hypothesis, Mazurkewich's account "differs crucially in that specific predictions are made in advance of the data... so that her hypothesis is empirically testable, in contrast to the natural order hypothesis which is entirely post hoc".

Phinney (1987) assumes that language transfer of the first language parameter setting will take place in second language acquisition. She further claims that resetting of parameters in agreement to the new target language value follows a precise direction of learning, in that it will be easier to reset from marked L1 to unmarked L2 than from an unmarked L1 to marked L2 setting. In order to test her claims, she focuses on the acquisition of Spanish L2 (pro-drop) by natives of English (non-pro-drop) and vice versa. The results of her experimental study confirm her claims, in that: "the cost of resetting the parameter from Spanish to English is high... [on the other hand] the data from the English speakers learning Spanish clearly show that the pro-drop parameter is easy to acquire, even when the L1 utilizes the non-pro-drop setting" (ib.: 234).

Hume & Tserdanelis (2002) show, using traditional markedness diagnostics, that the labial nasal *m* in Sri Lankan Portuguese Creole must be considered unmarked as opposed to both the coronal and dorsal nasals that also occur in the language (coronal and dorsal have traditionally been considered less marked than labial). For example, the word-final labial nasal optionally deletes; dorsal and coronal nasals do not.

As Kawasaki (1982) mentions, the CV syllable, e.g. [ta], is generally considered unmarked in contrast to its closed syllable counterpart, e.g. [at]. From a phonetic perspective this is because CV generally has better cues to its identification than VC. Thus, a language user will be biased towards CV syllables.

As for sounds with weak phonetic cues, and hence low salience, it has been observed that they are more likely than sounds with better cues to undergo phonological processes such as assimilation, reduction and deletion (Jun (1995)).

Typically, in phonology the structures that violate markedness constraints are those that are articulatorily or perceptually more difficult. A structure that violates a markedness constraint is said to be marked (relative to the structural dimension evaluated by the constraint, e.g., the beginning or ending of a syllable); otherwise it is unmarked. In this sense OT formalizes the general notion of markedness developed in the early part of the 20th century by the linguists of the Prague school (Jakobson (1962), Trubetzkoy (1969)).

Juszyk, Smolensky, and Allocco (2002) tried to determine whether 10-month-olds observe markedness and faithfulness constraints in isolation (i.e., when they are not in competition with one another). They began by conducting a markedness experiment consisting of stimuli that either do or do not violate markedness constraints. To determine whether 10-month-olds observe this markedness constraint, they used the Headturn Preference Procedure (Juszyk (1998b)) to present infants with a series of different lists in which all of the items were either unmarked or marked. Eight boys and eight girls from monolingual English-speaking families were tested. A female native speaker of English recorded the stimuli in a sound-attenuated room with a Shure microphone. Each infant was presented with the same stimuli, 96 prerecorded triads divided into 12 lists of 8 triads. Six lists contained triads that violate markedness constraints and do not assimilate nasally. The remaining 6 lists contained triads that obey markedness constraints and therefore assimilate nasally. Mean listening times to the marked and unmarked lists were calculated for each infant. Thirteen of the 16 infants had longer average listening times for the lists containing the unmarked, nasally assimilating outputs. Therefore, the results were consistent with hypothesis that infants at 10 months respect markedness constraints.

METHODOLOGY

Participants

Thirty two male students of Imam Hadi elementary school who have just passed the first grade were selected to participate in this study. They were all Persian speakers,

learning Farsi as their first language. The first grade elementary students are supposed to be able to read and write in their native language at this level.

Instrumentation

Based on the markedness descriptors drawn from the literature for identifying markedness, a list of words was prepared by the researchers. The list contained words with /v/ or /u/ sounds with the single written form of /و/ in Persian. The words were mostly chosen from among the words the students have not yet come across with (at least in their text books) with the help of three first grade elementary teachers. The idea behind that is to tap the participants' intuition in categorizing the written form /و/ as /v/ or /u/ sounds and based on that draw a conclusion on the markedness / unmarkedness of the sounds. See appendix A for the list of words.

Data collection

The participants were required to read aloud the words on the list while their voice was being recorded by the researchers. They were asked to read the words at the first sight and were not given time to ponder over them. As mentioned above, we are mainly after examining the participants' intuition in categorizing the written form /و/ as /v/ or /u/ sounds. The recordings were then transcribed based on IPA phonetic features for further analysis.

Data analysis

To analyze the data, the researchers tried to check the thirty words pronounced by the participants one by one and find the frequency with which the /و/ letter were pronounced /v/ or /u/ as their correct pronunciation or wrongly so that some rules could be generalized. The collected data were then transferred to SPSS Version 18 for statistical analysis. In analyzing the data, the descriptive statistics Chi square was used to find the frequency with which /v/ or /u/ was pronounced. Then, considering the Markedness descriptors drawn from the literature used to distinguish marked and unmarked sounds, we could recognize which of the two sounds is marked in Persian and which is said to be unmarked. Table 2 shows the summary of the data.

Table2. Summary of the collected data

	Term	Expected pronunciation	Number of pronunciations with /v/	Number of Pronunciations with /u/	Total	Wrong pronunciation
1	کولر	/kuler/	...	32	32	
2	قو	/qu/	...	32	32	
3	درویش	/dærvɪʃ/	24	8	32	/dærujeʃ/
4	قوی	/qævi/	4	28	32	/quj/ , /quje/
5	واجب	/va:dʒeb/	32	...	32	
6	پونه	/pune/	...	32	32	
7	روال	/ræva:l/	32	...	32	
8	گوزن	/gævæzn/	2	30	32	/guzæn/
9	وفا	/væfa:/	32	...	32	

10	هویج	/hævidʒ/	16	16	32	/hujædʒ/
11	مورچه	/murče/	...	32	32	
12	درود	/dorud/	13	19	32	/dærvæd/
13	کوبر	/kævɪr/	7	25	32	/kujær/ , /kujer/
14	گویش	/guješ/	6	26	32	/gæviš/
15	مرودشت	/mærvdæšt/	9	23	32	/mærudšæt/ , /mærudest/
16	وزن	/væzn/	32	...	32	
17	سواد	/sæva:d/	32	...	32	
18	مورب	/moværræb/	1	31	32	/muræb/
19	جانوران	/dʒa:neværa:n/	22	10	32	/dʒa:nura:n/
20	روانی	/ræva:nɪ/	26	6	32	/ruva:nɪ/
21	ملوس	/mælus/	6	26	32	/mælvæs/
22	نوه	/næve/	5	27	32	/nuh/
23	سورتمه	/surtme/	5	27	32	/sæværtæme/
24	مواظب	/mova:zeb/	32	...	32	
25	مواد	/mæva:d/	32	...	32	
26	قوری	/qurɪ/	...	32	32	
27	ویران	/vira:n/	32	...	32	
28	ورق	/væraeq/	32	...	32	
29	فرود	/forud/	7	25	32	/færvæd/
30	مویز	/mæviz/	8	24	32	/mujɪz/ , /mujez/

RESULTS AND DISCUSSION

Table 3 shows the results of Chi-Square analysis. It can be observed from the table that the difference between the expected and observed frequencies of participants' pronouncing /و/ letter as /v/ or /u/ is quite significant (.000). This significant difference and the summarized data in Table 2 depicts Persian children's meaningful tendency towards pronouncing /و/ letter as /u/ rather than /v/.

Table 3. Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	633.011 ^a	29	.000
Likelihood Ratio	826.145	29	.000
Linear-by-Linear Association	18.543	1	.000
N of Valid Cases	960		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.97.

However, to reach at a sound conclusion in categorizing the two allophones as marked or unmarked, checking the data against a number of markedness descriptors commonly used in literature seems quite legitimate. Regarding the markedness descriptors mentioned in the introduction section, we can say that comparing the two allophones of the /و/ letter (/v/ and /u/), /u/ is:

1. more frequent: the number of times /و/ letter was pronounced /u/ was more than it was pronounced /v/, (511 > 449)

2. articulatorily less difficult: it is a vowel sound and compared with the consonant /v/, no obstruction is needed.
3. acquired earlier: it is even produced by the infants in the cooing and babbling stage, and
4. predictable: wherever the participants are unable to guess if letter /و/ should be pronounced /v/ or /u/, they pronounced it as /u/.

These are in line with what Jakobson (1941) asserts about marked and unmarked categories. To him, unmarked categories are widespread, more 'natural' and more easily learned and processed than marked ones.

Moreover, it was observed that:

1. All of the 32 participants pronounced the /و/ letter in the words کولر /kuler/, قو /qu/, پونه /pune/, مورچه /murče/, قوری /qurı/, as /u/ which is the correct pronunciation.
2. In the words واجب /va:dzeb/, وفا /væfa:/, وزن /væzn/, ویران /vira:n/, ورق /væraeq/, letter /و/ was pronounced as /v/, so it can be inferred that /و/ appearing initially in a word is always pronounced /v/.
3. In the words روال /ræva:l/, سواد /sæva:d/, مواظب /mova:zeb/, مواد /mæva:d/ letter /و/ was pronounced as /v/, so it can be inferred that letter /و/ after vowel sounds is pronounced /v/. But we cannot come to the general fact that if letter /و/ is preceded by a consonant it is produced /u/ as the word درویش /dæviš/ is an example to violate it.

CONCLUSION

The significant differences between the expected and observed frequencies of participants' pronouncing /و/ letter as /v/ or /u/ were reliable findings based on which we could categorize /u/ as unmarked and /v/ as marked allophones of letter /و/ in Persian. This claim was double checked against a number of markedness diagnostics and it was realized that even theoretically /u/ could be considered unmarked as it is more frequent, articulatorily less difficult, acquired earlier, and predictable, the characteristics which are in line with what Jakobson (1941) considers for unmarked sounds. Moreover, studying the data carefully, the researchers could reach at some generalizations which were of high importance. For example, letter /و/ appearing initially in a word and after vowel sounds is pronounced /v/, and some more which were discussed in detail in results and discussion section. Finally, from the general rules we came across in the discussion part, the researchers concluded that whenever the participants are unable to guess if letter /و/ was preceded with a vowel or not, they would intuitively use the unmarked form which was proved to be /u/. These findings were all considered to be evidences supporting the idea that between the two allophones of Persian letter /و/, /u/ is unmarked and /v/ is marked.

One of the major concerns in the field of first language acquisition is uncovering areas of difficulty for children. Thus, studies of this kind can pave the ground for a better

understanding of the nature of children's acquisition of Persian phonology. However, one cannot ignore the need for more studies to confirm the results obtained from previous studies.

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