

Markedness in Oral Production and Repetition of Persian Aphasias: A study on Optimality Theory

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Received: 2017/07/12
Accepted: 2018/08/27

Abstract

In this article, markedness is studied through the errors of one Persian Motor Transcortical and two Broca aphasias in production of simple and compound nouns comprising of “N+N”, “Adj+N” and “N+verb stem” with regard to optimality theory of Prince and Smolensky (1993). The issue that language structures include two marked and unmarked values is called markedness. It is believed that the unmarked phones and structures are acquired before marked ones in language acquisition (Ulatowska, & Baker 1975; Jakobson, 1941). The markedness studies also show contrast between these groups of phonemes: voiceless and voiced consonants; liquids and non-liquids; back and front consonants; affricates versus stops and fricatives and oral versus nasal vowels. Since compounding is one of the most productive and common processes in Persian, it is necessary to study markedness in confrontation naming and repetition tasks of verbal and nonverbal compound nouns on the basis of phonological theories such as optimality theory to get some pieces of fresh evidence in order to reveal whether markedness theory is true or false. Using the clinical data also gives us an opportunity to get a clear picture from phonological processes in speech production of Persian native speakers and add richness to former theories.

The main purpose of this article is to study the markedness by using the description of the common error patterns to get the necessary evidence to evaluate the markedness theory of Jakobson (1972). The study of aphasics' data tries to clarify whether markedness is extended as a general principle to language behavior of aphasic patients and whether aphasic patients' errors in confrontation naming and repetition tasks are in agreement with Jakobson (1972) or not. The comparison of Persian aphasic patients' competence and performance is another purpose used to clarify what is the explanation of optimality theory of Prince and Smolensky (1993) regarding markedness theory in Persian.

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One female and two male monolingual Persian-speaking aphasic patients participated in this study. Three normal men and women as a control group were matched to aphasic patients according to gender, age, educational degree, native language and handedness. Language stimuli of this study included 32 simple and 32 root (nonverbal) and synthetic (verbal) compound nouns. These nouns were the most frequent categories among different categories derived from PhD dissertations of Khabbaz (2007) and Ghonchepour (2014). Regarding frequency and length of stimuli, an effort was made to match the simple words to the compound nouns. To investigate the ability of patients to produce simple and compound nouns, picture confrontation naming and repetition tasks were designed and performed. 32 pictures of compound stimuli were intermixed with 32 pictures of simple nouns. The speech of patients was recorded while doing the tasks. In the repetition task, the same lexical stimuli pertaining to confrontation naming task were used and the patients were asked to repeat them after the examiner. Their performance was recorded and then, errors were classified and analyzed based on phonological patterns of common disorders.

Errors and phonological processes in confrontation naming and repetition of simple and compound nouns are analyzed on the basis of final consonant deletion, cluster reduction, fronting, stopping and onset voiced obstruent consonant patterns. Data analysis shows that the errors of these patients are phonemic and the insertion process is not observed in any of error patterns. The deletion and reduction processes take place in final clusters of word syllables while voicing process mostly happens in onset clusters of words. In other words, the *COMPLEX (coda), *CODA, MAX-IO and UNIFORMITY constraints of markedness and faithfulness show that the unmarked CV syllable structures are the most optimal output structures which are represented via the deletion of final consonant or the reduction of coda cluster obstruent consonants. The domination of ONSET (- voiced) obstruent over IDENT ONSET (voice) and IDENT- IO (voice) reveals that voiced obstruent consonants of onsets are the unmarked phonemes in comparison with voiceless ones. This issue is in agreement with Fromkin (1970), Lecours and Lhermitte (1969), Green (1969) and Blumstein (1979) and is against Berlin, Lowe-Bell, Cullen, Thompson and Loovis (1973) and Jakobson (1972). Coronal phonemes in comparison with dorsal phonemes and stops against fricatives are unmarked which are respectively shown through *DORSAL and *FRICATIVE markedness constraints proving markedness theory of Jakobson (1972). The findings also show that the Persian Broca and Motor Transcortical aphasias mostly use onset voiced obstruent consonants in place of voiceless ones which is contrary to Jakobson (1972) and indicates that voiceless stops are more vulnerable than their voiced pairs. The findings also reveal that high vowels are the most unmarked ones among vowels and patients use them in place of mid or low vowels.

Keywords: Markedness, Markedness constraint, Faithfulness constraint, Compound noun, Aphasia