Persian Vowel Harmony Without Exceptionality: A Reply to Jam

[Review of the Article *Vowel Harmony in Persian*, by B. Jam, 2020]

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Article Info	ABSTRACT
	Jam (2020) attempts to provide an Optimality-Theoretic analysis of Persian vowel harmony. As to cases where backness harmony does not appear to occur, his explanation appeals to Lexically Specific Constraint Theory, treating these instances as exceptional rather than systematic. In this reply, I argue that such an appeal to exceptionality is unnecessary, and I propose an alternative analysis in which regressive vowel harmony in Persian can be accounted for in a principled, unified manner without recourse to lexically indexed constraints. By introducing an appropriately formulated markedness constraint, it becomes possible to capture the full range of observed patterns while maintaining the parsimony and explanatory elegance expected of an Optimality-Theoretic framework. In addition to this central point, I identify several further weaknesses in Jam's analysis. These include a conflation of rule ordering with constraint ranking, which obscures the theoretical distinction between derivational and constraint-based approaches, the problematic assumption that the phonological representation of loanwords should mirror their source-language forms, and the omission of critical information in both the representations and tableaux.

1. Introduction

Jam (2020) presents an Optimality-Theoretic (OT) account of both regressive and progressive vowel harmony in colloquial and formal varieties of Tehrani Persian. His first case study concerns regressive backness harmony between the imperative prefix and the verb stem, whereby the vowel /e/ in the imperative prefix assimilates to the back vowel /o/ of the stem. For instance, in forms such as /be-do/ → [bodo] ("Run!"), harmony applies straightforwardly. However, in other forms such as /be-dozd/ → *[bodozd] ("Steal!"), the expected harmony does not occur. Jam attributes this apparent irregularity to lexical idiosyncrasy, arguing that the lower frequency of the verb /be-dozd/ in Persian justifies treating it as an exception. He formalizes this claim within the framework of Lexically Specific Constraint Theory, thereby invoking exceptionality as an explanatory device.

In this paper, I argue that such reliance on exceptionality is neither necessary nor theoretically desirable. Instead, I propose that the relevant patterns can be accounted for more parsimoniously by positing a new markedness constraint that directly blocks vowel harmony in specific structural configurations. This approach avoids stipulative appeals to lexical frequency and provides a principled explanation consistent with the core assumptions of OT. By deriving the distribution of harmony and its apparent exceptions from the interaction of general constraints rather than from lexically indexed mechanisms, the analysis preserves both the explanatory power and the elegance of the OT framework.

Beyond this central point, I also identify a range of further issues in Jam's paper, including theoretical missteps and empirical misanalyses. These include, but are not limited to, a conflation of derivational rule ordering with constraint ranking, problematic assumptions regarding the representation of loanwords, and omissions or inaccuracies in the construction of tableaux and phonological representations. Together, these shortcomings highlight the need for a more rigorous and systematically grounded analysis of vowel harmony in Persian. My aim in this paper is therefore twofold: first, to offer a more coherent and parsimonious account of certain parts of the data by redefining the role of markedness constraints, and second, to demonstrate how careful theoretical precision and accurate empirical analysis are essential to the successful application of OT to language-specific phenomena.

2. Harmony in Imperative and Subjunctive Constructions

While Jam only describes the vowel harmony in imperative constructions, it should be noted that the prefix /be-/ (containing the target vowel) is used in both imperative and subjunctive verbs. Although it can be said according to formalistic criteria that Persian has two prefixes for constructing imperative and subjunctive verbs, both prefixes have a single etymological antecedent and a single OT analysis can be proposed for both constructions. The subjunctive mood is used more frequently than the imperative mood. It is used to express a wish and also to express conditionals.

1. a) /be-do-e/ → [bodoʔe]   "(if) she runs"
   b) /be-con-e/ → [bokone]   "(if) she does"
   c) /be-coʃ-e/ → [bokoʃe]   "(if) she kills"
   d) /be-χor-e/ → [boχore]   "(if) she eats"

As the harmony does not occur in some forms, including /be-dozd/ (*[bodozd] "Steal!"), Jam contends that the nonoccurrence is due to its lower frequency compared to /be-do/ ([bodo] "Run!"). There are several verbs in which the harmony does not occur, and, as we will see, a number of them have a high frequency. The subjunctive forms of these verbs should

also be considered in examining their frequency. Jam (2020) mentions that, as far as he knows, there is no mechanism in OT to assess the candidates in terms of frequency (p. 7). Actually, several OT accounts have been proposed in which frequency effects are considered (see Sloos, 2013, p. 13). However, the number of verbs in which the harmony does not occur is more than can be attributed to frequency and exception. In the following examples, the first morpheme is the subjunctive prefix, the second morpheme is the verb stem, and the third morpheme is the third person singular present tense suffix /-e/.

2. a) /be-dʒonb-e/   "(if) he hurries"
   b) /be-ɟondʒ-e/   "(if) it fits"
   c) /be-solf-e/   "(if) he pays"
   d) /be-torʃ-e/   "(if) it gets rancid"
   e) /be-ɟorχ-e/   "(if) he becomes terrified"
   f) /be-χoʃc-e/   "(if) it dries"

It seems that there is no considerable difference in the frequency of these verbs compared to the verbs in (1). Many of them are quite common in colloquial Persian. For example, /be-dʒonb/ ("Come on!" and "Hurry up!") and /beχoʃci ʃans/ ("Just my luck!" literally "You dry, luck!") are very popular expressions among Tehrani speakers. The shared characteristic of all these verbs is the consonant cluster in the verb stem, and the harmony can be blocked by devising a markedness constraint. Since CVCC syllables are superheavy syllables in Persian, it seems that the nonoccurrence of vowel harmony is somehow related to syllable weight or mora count. The imperative forms of these verbs include superheavy syllables, but resyllabification in the subjunctive forms ([be.dʒonb.e]) does not allow the formation of such syllables.

In his discussion of the relationship between harmony and syllable weight, Hansson (2001) points out that there are few examples of vowel harmony being sensitive to syllable weight (p. 251). He concludes that the "mora count is only directly relevant to harmony processes as a property of individual *segments* rather than syllables" (p. 253).

According to Hansson's (2001) conclusion, the markedness constraint should be defined with a focus on consonant clusters rather than syllable weight. Other evidence for such a definition comes from the imperative and subjunctive forms of the verb /lonbun/, a pejorative word for eating, which is not used in formal language but is very common in colloquial Persian. It seems that the verb has been formed through a kind of morphological reinforcement by adding the suffix /-ɑn/ (causative suffix) to the verb /lonb/, which is no longer used in contemporary Persian (Hassandoust, 2015, p. 2530). Then the structure of the word can be represented as /lonb-ɑn/ (/-ɑn/ has changed to /-un/ due to the process described in the last section of Jam's paper). In this case, even the imperative form does not include a superheavy syllable, but harmony does not occur. The markedness constraint for blocking harmony can then be formulated as follows:

3. *PROJECT(VCC): Projection from vowels in verb stems with consonant clusters is prohibited.

Tableau 1. Non-Application of Backness Harmony

Input: /be-dozd/	*PROJECT(VCC)	*Dp-Right	AGREE [+back, -high]	IDENT [-back]
a. ☞ [bedozd]			*	
b. [bedezd]		*!		
c. [bodozd]	*!			*

As shown in Tableau 1, *PROJECT(VCC) and *Dp-Right cannot be ranked with respect to one another because there is no conflict between them. The performance on other constraints is irrelevant to the outcome. Through such an analysis, a more parsimonious explanation of vowel harmony in imperative and subjunctive constructions can be provided.

3. Other Issues

In this section, I point out some mistakes in Jam's paper (the numbers in parentheses, from now on, refer to data, formulations and tableaux in the paper).

In Jam's description of vowel harmony in loanwords, there is a confusion between rule ordering and constraint ranking. The feeding order in rule-based phonology is irrelevant to ranking in Optimality Theory. However, Jam (2020) writes, "Since in this feeding interaction AGREE [+back, -high] becomes decisive after the application of *COMPLEXONS, it is dominated by *COMPLEXONS" (p. 9). Then, in tableau (31), *COMPLEXONS dominates AGREE [+back, -high], while there is no conflict between the two constraints and the domination cannot be determined.

There are several mistakes in constraint ranking throughout the paper. For example, in ranking (21) and tableau (22), there is no conflict between IDENT[-back]L and *Dp-Right, but the former dominates the latter. In tableaux (40), (44), (48), (66) and (68), *Dp-Right has no conflict with AGREE constraints, but it dominates them. In tableau (85), there is no conflict between Align [+back] and IDENT[height]Enc, but the former dominates the latter. Other unjustified rankings can also be seen in other tableaux, as the dominated constraints do not favor the loser over the winner.

Constraint (51) is wrongly formalized as /folɑni/, while it should be *[ɑ]N. It is wrongly formalized in ranking (52) and in its comments. Another problem with this constraint is that, since there are many words in Persian in which the change ɑN → uN has not occurred, it cannot be proposed as a general (synchronic) change in Persian. Many of these words are very common words, such as [mɑmɑn] ("mom"), [nɑme] ("letter"), [χɑme] ("cream"), [livɑn] ("glass"), [rɑnande] ("driver"), and [tavɑn] ("ability"). As a result, the constraint yields numerous ungrammatical outputs. In particular, the change has not occurred at the border of morphemes. The examples are as follows: [nɑ + mardi] → *[numardi] ("cowardliness") and /nɑ + mahram/ → *[numahram] ("stranger") (Sadeghi, 2001, p. 79). Therefore, the counterfeeding process, described in (82), may not be factual.

Another problematic and theoretically unjustified assumption in Jam's article is the claim that the underlying representations of Persian loanwords are identical to their phonological forms in the source language. For instance, Jam assumes that the underlying form of the Persian word [felaʃ] corresponds directly to its English source /flaʃ/. Such an approach may have some heuristic value in studies of second-language acquisition—for example, in explaining how Persian-speaking learners of English perceive or approximate foreign phonological structures—or in narrowly circumscribed analyses of specific borrowings. However, its adoption as a principle of synchronic phonological analysis for Persian is highly problematic.

Treating the source-language form as the underlying representation produces theoretical difficulties, most notably the proliferation of unnecessary and overly complex phonological rules. The scale of the problem becomes apparent when considering the sheer proportion of loanwords in Persian. By some estimates, approximately sixty percent of the Persian lexicon is composed of borrowings from other languages. If each of these items was to be analyzed etymologically, and the phonological grammar of Persian was forced to generate the surface forms from reconstructed source-language inputs, the result would be an unwieldy and

unrealistic rule system. Such a system would require, among other things, a set of rules to account for all phonemes present in donor languages but absent in Persian, mapping them systematically onto native phonological categories. For older borrowings—some of which entered Persian more than a millennium ago from languages such as Greek or Arabic—the analyst would be compelled to reconstruct the historical form of the original word and then posit a cascade of phonological rules to derive the modern Persian outcome. This would include, for example, rules converting pharyngeal segments into their non-pharyngeal Persian correspondents, or simplifying illicit complex syllable margins into structures licensed by Persian phonotactics. In many cases, a single loanword might require the positing of ten or more phonological rules.

From a synchronic perspective, such a methodology places an implausible cognitive burden on native speakers, particularly children acquiring Persian as a first language, who would hypothetically be required to internalize a massive inventory of etymologically motivated rules to account for everyday lexical items. This consequence underscores the fundamental inadequacy of Jam's assumption: while etymological and historical considerations are relevant for diachronic studies, they are methodologically inappropriate for defining the underlying representations of loanwords in synchronic phonology. A more tenable analysis must therefore treat loanwords in terms of their integration into the Persian phonological system rather than in terms of their historical source forms.

This error—extracting linguistic rules by analogy between words from two dialects or languages—is a strange but common mistake found in numerous works by Iranian linguists, including other works by Jam. In such cases, imaginary rules that do not exist in the phonological system of the languages are assumed to be part of the phonological descriptions (Tabibzadeh, 2021).

Other minor mistakes in Jam's paper are:

- The feeding interactions in (11) are missing.
- In examples (23) and (27) and in tableau (31), /i/ (vowel) is written instead of /j/ (consonant).
- In (23), the word /perɑjd/ in Persian is shown as having the meaning "pride." However, this word is the brand of a popular car in Iran and has no other meaning.
- Tableau (44) does not have candidates (c) and (d), while the two candidates are explained in the comments.
- In tableau (48), candidate (e) violates AGREE [+high], but the violation is not shown in the tableau.
- (49) includes only one example, while it should include more examples according to the comments.
- Tableau (53) should have a candidate (c), [fo.lɑni], which violates *[ɑ]N.
- Tableau (68) has a wrong output, and candidate (b) is missing.
- Constraint (69) and tableau (70) should be like previous similar tableaux and constraints, but they are dwindled without explaining the reason.
- The words in (73) and (76) should have an initial glottal stop in their phonetic forms.
- In tableau (85), the candidate (c) should be *[bɑ'ham].

4. Conclusion

In this reply, I tried to highlight the shortcomings of Jam's paper and propose a more parsimonious account of Persian vowel harmony. While Jam invokes exceptionality to

explain the Persian data, these cases can instead be addressed by defining an appropriate markedness constraint. Additional issues in Jam's analysis include conflating linear phonological rules with OT constraints, assuming unjustified rules in Persian phonology, misidentifying counterexamples for certain constraints, and making errors in both constraint ranking and the construction of tableaux.

Taken together, these shortcomings suggest that the study exemplifies a case in which two fundamental dimensions of linguistic inquiry have been overlooked. On the one hand, the technical details and internal requirements of the theoretical framework employed are not observed with sufficient rigor, resulting in inconsistencies and misapplications within the analysis itself. On the other hand, the broader and more essential aim of linguistic research—namely, the attempt to uncover and explain the underlying mechanisms of language function—has been neglected.

Ethical Considerations

Not applicable

Funding

Not applicable

Conflict of Interest

The author declares no conflicts of interest related to this research.

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