

Anti-Identity Constraints in Morphological Paradigms

In this paper I examine the notion of *Optimal Paradigms* (McCarthy 2005), in the context of the verbal paradigms of Hindi and Bangla, arguing in particular that the same OP anti-identity constraint that blocks root-allomorphy in Hindi, triggers root-allomorphy in the morpho-phonological grammar of Bangla which in turn result in paradigm restructuring in the language. These particular languages are ideal to understand the interaction of OP markedness and faithfulness constraints because a) in both Hindi as well as Bangla OP Faithfulness constraints are violated as verb roots exhibit allomorphy, b) the root-allomorphy is motivated morpho-syntactically in Hindi, morpho-phonologically in Bangla.

The Optimal Paradigms model proposes that each candidate output does not merely check for phonological correspondence with the input, but also with every other output within the same inflectional paradigm. In doing so it reiterates the idea of surface-similarity between morphologically related forms that had been suggested by erstwhile concepts like *Metrical consistency* (Burzio 1994b, 1999), *Uniform Exponence* (Kenstowicz 1996, 1998) and *Transderivational Correspondence Theory* (Benua 1997a). While some of them like TCT prioritize the derivational base, others like MC advocate anti-allophony to conserve base similarity. OP takes the same anti-allophony principle from the level of individual lexical items to that of morphological paradigms to show how the entire paradigms of languages conspire to avoid allophony and therefore phonological irregularity in the morphological paradigms.

In Bangla the phonetic forms [-e] and [-o] stand for more than one morpho-syntactic function. In these situations the root allomorphy blocks homophonous outputs within the verbal paradigm.

1. Bangla root allomorphy involving vowel change

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|----|--------|--------------|--------|-----------------|
| a. | dɛ-w-e | give-3person | di-y-e | give-perfective |
| b. | kɔr-e | do-3person | kor-e | do-perfective |
| c. | hɔ-w-e | be-3person | ho-w-e | be-perfective |
| d. | aʃ-e | come-3person | eʃ-e | come-perfective |

However, the root allomorphy in Bangla is not restricted to the isolated contexts of accidental homophony in affixes. It extends to other contexts within the paradigm, and is systematically present in all verb roots.

2. Bangla root allomorphy involving vowel change

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|----|------|----------------------|---------|----------------------|------------------|----------------------|---------|
| a. | e~i | de-w-a | giving | di-y-e | give-perfective | di-te | to give |
| b. | ɔ~o | kɔr-a | doing | kor-e | do-perfective | kor-te | to do |
| c. | o~u | d ^h o-w-a | washing | d ^h u-w-e | wash-perfective | d ^h u-te | to wash |
| d. | ɛ~e | dɛkh-a | seeing | dek ^h -e | write-perfective | dek ^h -te | to see |
| e. | a~*e | aʃ-a | coming | eʃ-e | come-perfective | aʃ-te | to come |

As a consequence the seven-vowel repertoire of the language gets systematically reduced to five in verbs. All verb roots conjugating with the to infinitive, subjunctive, past tense and perfective forms contain the vowels (i, e, a, o and u), irrespective of the affixal vowel. I will denote this as the H-set on account of presence of the [+High] vowel /i/ and /u/ in these allomorphs. Elsewhere, irrespective of the phonetic form of the conjugating suffix, including null, the verb roots contain the vowels (e, ɛ, a, ɔ and o). I call them the ¬H-set on account of the absence of the [+High] vowel from it. The first section of the paper shows how satisfaction of the OP anti-identity constraint would entail violation of the OP root faithfulness constraint. This in turn is also avoided by splitting the morpho-phonological paradigm into H and ¬H subsets, each enforcing OP Faithfulness within it.

Unlike Bangla, Hindi has two different root allomorphy inducing morpho-syntactic contexts in the verbal paradigm, which produce similar phonological consequences.

a) [-High, -Low, αlong] vowels in verb roots change to the corresponding [+High, -Low, -Long] in perfective forms.

b) The vowel in the causative and derived intransitive form of all CVC verb roots is [+High, -Low] except where the root vowel was schwa.

3. Hindi root allomorphy involving vowel change in perfective

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|----|-----|----------------------|----------|----------------------|------------------|----------------------|----------|
| a. | e~i | de-na | giving | di-y-a | give-perfective | de-ne | to give |
| b. | ə~i | kər-na | doing | ki-y-a | do-perfective | kər-ne | to do |
| c. | o~u | ho-na | being | hu-w-a | be-perfective | ho-ne | to be |
| d. | i~* | lik ^h -na | writing | lik ^h -a | write-perfective | lik ^h -ne | to write |
| e. | u~* | c ^h u-na | touching | c ^h u-w-a | touch-perfective | c ^h u-ne | to touch |
| f. | a~* | a-na | coming | a-y-a | come-perfective | a-ne | to come |

4. Hindi root allomorphy involving vowel change in intransitive and causative

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|----|------|----------------------|-------|----------------------|--------------------|------------------------|------------|
| a. | e~i | dek ^h -na | see | dik ^h -na | see-intransitive | dik ^h -a-na | see-caus |
| b. | o~u | bol-na | say | _____ | _____ | bul-wa-na | say-caus |
| c. | i:~i | pi:t-na | hit | pit-na | hit-intransitive | pit-wa-na | hit-caus |
| d. | o:~u | to:d-na | break | tu:t-na | break-intransitive | tut-wa-na | break-caus |
| e. | a:~ə | ma:r-na | beat | mər-na | die-intransitive | mər-wa-na | die-caus |
| f. | ə~* | kər-na | doing | _____ | _____ | kər-wa-na | do-caus |

Compared to Bangla, the Hindi paradigm is irregular to begin with since not all verb-roots participate in root allomorphy and even with the ones that do, not all vowels alternate. Nevertheless, similar to Bangla, Hindi too blocks homophonous outputs within the paradigm of the same verb.

5. Blocking of Hindi root allomorphy involving vowel change

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|----|----------------------|----------|---------------------|----------------------|-----------------|--------------------------------------|
| a. | de-na | giving | di-y-a | give-perfective | | |
| b. | kər-na | doing | ki-y-a | do-perfective | | |
| c. | ho-na | being | hu-w-a | be-perfective | | |
| d. | dek ^h -na | seeing | dek ^h -a | *dik ^h -a | see-perfective | dik ^h -a see-intransitive |
| e. | rok-na | stopping | rok-a | *ruk-a | stop-perfective | ruk-a stop-intransitive |

Thus, although the OP anti-identity markedness constraint does influence the well-formedness of the paradigm, the OP Faithfulness does not trigger phonological rearrangements to counter the undesirability of allomorphy. In the paper I use this contrast to suggest that allomorphy triggered by the need to satisfy an OP anti-identity constraint results in further adaptation to OP Faithfulness constraints, while allomorphy blocked by the need to satisfy an OP anti-identity constraint doesn't have any influence on the phonological grammar with respect to OP Faithfulness.

References

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