

Comparative Markedness and Opacity in Meskwaki Palatalization

Thomas Wier
University of Chicago

1. Overview

Meskwaki, also known as Fox, is an Algonquian (Algic) language spoken by approximately 700 people (1990 US Census) in the Mesquakie Settlement in Tama, Iowa, and on the Sac and Fox Reservation on the Kansas-Nebraska border. Most speakers are middle-aged or elderly, and it is relatively endangered.

- (1) Two phonological processes in Meskwaki:
 - (a) Palatalization $t \rightarrow \check{c} / _i$ $ni\text{-}mi\text{-}t\text{-}i \rightarrow ni\text{-}mi\check{c}i$
 - (b) Glide-deletion $G \rightarrow \emptyset / t_i$ $nekotw\text{-}i \rightarrow nekoti$
- (2) Generative phonologists have approached processes such as these from two basic standpoints:
 - (a) Layer the processes by rule ordering (Chomsky and Halle 1968, Kiparsky 1973) so they may interact (feeding, bleeding) or not (counterfeeding, counterbleeding).
 - (b) A direct mapping of input and output, such as in Optimality Theory (Prince and Smolensky 1993): feeding and bleeding.
- (3) Because OT allows for only feeding and bleeding, not counterfeeding or counterbleeding, a number of responses have been proposed to correct this:
 - (a) From the point of view of **faithfulness**: Sympathy Theory (McCarthy 1999),
 - (b) From the point of view of **markedness**: Targeted Constraints (ref); Comparative Markedness (McCarthy 2003): outputs are marked with respect to origin of the input – ‘old’ and ‘new’ markedness violations are assessed differently.
 - (c) From **neither** point of view: phonological opacity results from the interaction with other modules of grammar, such as morphology; see Hansson 1999; Stratal Optimality Theory (Kiparsky 2003, Antilla 2004):
- (4) Goals to be accomplished here:
 - (a) Examine a basic set of data from Meskwaki;
 - (b) Address difficulties that arise within the context of Comparative Markedness;
 - (c) The Future?

2. Data

- (5) Palatalization of /t/ before /i/ (Goddard 1994):
- | | | | |
|----|---------------------|----------------------|------------------------------|
| a. | /ni·mi-t-i/ | ni·mi či | ‘he dances’ |
| | cf. /ni·mi-t-a/ | ni·mi ta | ‘(he) who dances’ |
| b. | /e·h-in-et-i/ | e·hine či | ‘one addressed him thus’ |
| c. | /pye·t-ike·-w-a/ | pye· či ke·wa | ‘he is bringing (something)’ |
| d. | /a·t-im-o-w-a/ | a· či mowa | ‘he is telling a story’ |
| | cf. /a·t-ot-am-w-a/ | a· tot amwa | ‘he tells of it’ |
| e. | /k-i-pit-i/ | ki·pi či | ‘your tooth’ |
| | cf. /k-i-pit-ani/ | ki·pi tani | ‘your teeth’ |
- (6) No palatalization in nonderived environments:
- | | | | |
|----|----------------------------|-------------------------------------|-----------------------------------|
| a. | /e·h-ma-wačim-ti·-wa·-t-i/ | e·hma·wač ti ·wa·č či | ‘they called each other together’ |
| b. | /pašito·h-etike/ | pašito·het ike | ‘old men!’ (voc. pl.) |
| c. | /wača·h-etiso-w-a/ | wača·het isowa | ‘he is cooking for himself’ |
| d. | /ti·kwe·-w-i/ | ti ·kwe·wi | ‘it patters’ |
| e. | /kišk-ity-e·-w-a/ | kišk iti ye·wa | ‘his tail falls off’ |
| f. | /taneti·-w-aki/ | tanet i ·waki | ‘they gamble, make bets’ |
| g. | -eti- | | reciprocal suffix |
| h. | -etiso- | | middle voice suffix |
| i. | -etike- | | vocative plural suffix |
- (7) Counterfeeding opacity:
- | | | | |
|----|---------------------------|---------------------|--------------------------|
| a. | /nekotw-ičiše/ | nekot i čiše | ‘one inch’ |
| | cf. /nekotw-ayaki/ | nekotwayaki | ‘one group’ |
| b. | /na·-nekotw-i/ | na·nekot i | ‘one apiece, one by one’ |
| c. | /očity-i/ | očit i | ‘bird’s rump or tail’ |
| | cf. /očity-ani/ | očity-e·ni | ‘bird’s tails’ |
| d. | /pe·škity-i/ ¹ | pe·šk iti | ‘basket’ |
| | cf. /pe·škity-ani/ | pe·škitye·ni | ‘baskets’ |

3. Comparative Markedness

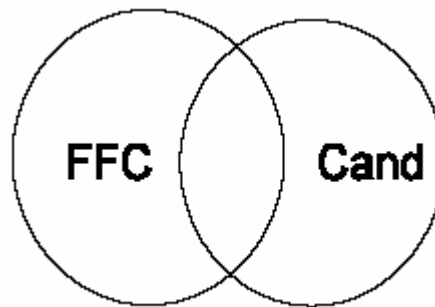
(8) Comparative Markedness (CM)

- a. Assesses markedness solely by reference to output candidates, but differs from classical OT in that the Fully-Faithful Candidate constitutes a second source for comparison.
- b. Marked structures present in the FFC trigger violations of ‘old’ markedness constraints, while marked structures not present in the FFC trigger violation of ‘new’ markedness constraints.

¹ Goddard 1994: 140. While clearly a loan-word from English, it appears to have been naturalized with the usual morphophonemic alternations of native vocabulary (prox. inan. pl. is usually *-ani* on the surface)

- c. “These novel markedness constraints distinguish between:
- Mappings that fail to correct a marked configuration in the FFC. E.g., the mapping /ab/ → ?ab fails to correct the marked voiced obstruent in the FFC *ab*. That is, the NOVCDOB violation in ?*ab* is ‘old’ because the fully faithful candidate *ab* has the same violation; and
 - Mappings that introduce new marked configurations. E.g., the mapping /ampa/ → *amba* (i.e., post-nasal voicing) introduces a voiced obstruent that is not present in the FFC *ampa*. That is, the NOVCDOB violation in *amba* is ‘new’ because the fully faithful candidate *ampa* doesn’t have this violation.” (McCarthy 2003: 2)

d. Another way of looking at this is a Venn Diagram:



“Cand’s violation-marks can be partitioned into two subsets: those shared with the FFC (Cand+FFC) and those that are not shared with the FFC (Cand.FFC).... I will be calling, somewhat imprecisely, ‘old’ [candidates from the union of FFC and Cand]. Cand’s violation-marks that are not shared with the FFC, the portion of the right circle that does not overlap with the left circle, can be (loosely) described as ‘new’.” (McCarthy 2003: 3)

(9) Effects are directly visible only when some other constraint falls in between.

- a. $_{NM} \gg F \gg _{OM}$: grandfather effects, derived environment effects (DEEs)
- b. $_{OM} \gg F \gg _{NM}$: noniterating processes, coalescence paradoxes, counterfeeding opacity

This predicts that processes derived from opposite rankings should never coexist, e.g. DEEs and counterfeeding opacity.

(10) As an example of the way CM handles DEEs, McCarthy makes use of a very similar kind of palatalization in Korean, one which is directly relevant to our discussion of Meskwaki:

- a. /pat^h-i/ → pac^hi ‘field-COP’
- /mat-i/ → maci ‘eldest-NOM’
- /put^h-i/ → puc^hi ‘to stick to-CAUS’
- /tot-i/ → toci ‘rise-NOM’

- b. /mati/ → mati 'knot'
 cf. /kac^hi/ → kac^hi 'value'

(11) To explain this set of data, McCarthy uses a number of complex constraints:

- IO-_oPAL: incurs one violation (*) for every locus of [ti] present in the FFC of the underlying representation of the word in question
- OO-_oPAL: incurs one violation (*) for every locus of [ti] present in the FFC of the underlying representation of the form in OO-correspondence
- OO-_NPAL: incurs one violation (*) for every locus of [ti] **not** present in the FFC of the underlying representation of the form in OO-correspondence.
- IDENT: input features must be present in output, and vice versa.

This works fine for our first two sets of data in (5)-(6):

(12) OO-_NPAL >> IDENT >> IO-_oPAL, OO-_oPAL

/ni-mi-t-a/	OO- _N PAL	IDENT	IO- _o PAL	OO- _o PAL
a. ☞ ni·mita FFC				
b. ni·miča		*!		
/ni-mi-t-i/	OO- _N PAL	IDENT	IO- _o PAL	OO- _o PAL
c. ni·miti FFC	*!		*	
d. ☞ ni·miči		*		
/pašito-h-etike/	OO- _N PAL	IDENT	IO- _o PAL	OO- _o PAL
e. ☞ pašito·hetike FFC			*	*
f. pašito·heči		*!		

The ranking of OO-_NPAL above IDENT is necessary to ensure that /ti/ sequences surface as [či] precisely when it will trigger a morphological alternation. Thus we have precisely the same phenomenon as palatalization in Korean. Consider, however, what must be done to account for the data in (7):

(13) *T-GL >> IO-_oPAL, OO-_oPAL >> IDENT >> OO-_NPAL

/na·nekw-i/	*T-GL	IO- _o PAL	OO- _o PAL	IDENT	OO- _N PAL
a. na·nekw <i>ɪ</i> FFC	*!				
b. ɕ na·nekoti					*
c. na·nekoči				*!	

(14) **There is a contradiction:** the tableaux in (12) and (13) require opposite rankings to account for the whole lexicon.

4. Conclusion

- (15) In summary, we have seen:
- Meskwaki data feature two types of opacity: DEEs and counterfeeding opacity with respect to two processes: palatalization and glide-deletion.
 - Comparative Markedness predicts these types of opacity not to coexist, and yet they do.
 - This shows that approaches to opacity based on Comparative Markedness cannot unify a number of basic opaque phenomena.

Works Cited

- Anttila, Arto.** 2004. Phonological opacity in Finnish dialects. Presentation at the U. of Chicago.
- Chomsky, Noam and Morris Halle.** 1968. *The Sound Pattern of English*. New York: Harper and Row.
- Dahlstrom, Amy.** In preparation. *A Grammar of Meskwaki*. Ms.
- Goddard, Ives.**
- 2001. Contraction in Fox (Meskwaki). In: John D. Nichols, (ed.) *Actes du Trente-Deuxième Congrès des Algonquistes*. Winnipeg, Manitoba: The University of Manitoba Press
- 1994. *Leonard Bloomfield's Fox Lexicon: Critical Edition*. Winnipeg, Manitoba: Algonkian and Iroquoian Linguistics.
- Hansson, Gunnar Olafur.** 1999. Opacity and the loss of phonological alternations: Vowel Harmony in present-day Yowlumne. Ms. University of California, Berkeley.
- Kiparsky, Paul.** 1973. Phonological representations. In: O. Fujimura (ed.), *Three Dimensions of Linguistic Theory*. Tokyo: TEC.
- McCarthy, John.**
- 2002. Comparative markedness. Ms. University of Massachusetts, Amherst. [ROA-489]
- 1999. Sympathy and Phonological Opacity. *Phonology* 16: 331-399.
- Prince, Alan and Paul Smolensky.** 1993. *Optimality Theory: Constraint Interaction in Generative Grammar* RuCCs Technical Report #2, Rutgers University Center for Cognitive Science, Piscataway, New Jersey
- Wilson, Colin.** 2001. Consonant Cluster neutralization and targeted constraints. *Phonology* 18: 147-197.

Contact Information:

Thomas Wier

Email: <trwier@uchicago.edu>

WWW: <<http://home.uchicago.edu/~trwier/>>