

# Similarity-sensitive Blocking and Transparency in Menominee

Rachel Walker  
University of Southern California

LSA, San Francisco, January 9, 2009

1

## Introduction

- Menominee (Algonquian) exhibits [+ATR] vowel harmony (Archangeli & Pulleyblank 1994, 2007, Archangeli & Suzuki 1995, Milligan 2000; cf. Cole 1987, Cole & Trigo 1988, Steriade 1987).
- It presents blocking effects and transparency in the same system.

2

## Introduction

- Proposal:
  - Analyze [+ATR] harmony at a distance using similarity-driven correspondence among segments in an output: *Agreement by Correspondence*. (Walker 2000a,b, 2001, Hansson 2001, Rose & Walker 2004)
  - Obtain blocking effects using correspondence chains: *Blocking by Correspondence*. (Hansson 2006a, 2007, Rhodes 2008)

3

## 1. ATR harmony in Menominee

4

## Menominee vowels

i	u	[+ATR]	
ɪ	ʊ	[-ATR]	Non-low
<hr/>			
ə		[+ATR]	
a		[-ATR]	Low

- Vowels may be long or short  
(Vowel transcriptions after Archangeli & Suzuki 1995)

5

## [+ATR] harmony in adjacent syllables

- Triggers and Targets: Non-low vowels
- Direction: Regressive (rightward)
  - si:piah 'river (loc.)' (A&P:377)  
+ +
  - si:piahsɪ:hsəh 'creek' (A&S:6)  
+ + - +
  - sɪ:pi:w 'river' (A&P:377)  
- -
  - /i/ is a trigger and /ɪ:/ is a target.
  - /ə/ is not a trigger.

(Data from Archangeli & Pulleyblank 1994 (A&P) and Archangeli & Suzuki 1995 (A&S), based on Bloomfield 1962, 1975)

6

## Harmony in adjacent syllables

- b. utu:hpuakanɪw 'he has X as a pipe' (A&P:377)  
       +    +  
       ʊtʊ:tə:mɪw 'he has X as a totem' (A&P:377)  
       -    +  
     • /u/ is a trigger and /ʊ:/ is a target.  
     • /ə:/ is not a trigger.
- c. ahku:pi:kat 'the water extends so far' (A&P:381)  
       +    +  
       ahkʊ:hɪnaw 'he walks so far' (A&P:381)  
       -    -  
     • /i:/ is a trigger and /ʊ:/ is a target.

7

## Harmony in adjacent syllables

- d. nu:kr:stɪk man's name "Big Sky" (A&S:6)  
       +    -  
     e. miani:hsr:hsak 'tiny owls' (A&S:6)  
           +    -  
     • /i: u:/ do not trigger progressive [+ATR] harmony.  
     • /ɪ:/ does not trigger regressive [-ATR] harmony.

8

## Short non-low vowels

- Ambiguities about the target status of [ɪ ʊ] arise from Bloomfield's phonemic orthography and phonetic mergers.
- Insight from analysis by Milligan (2000) of allophonic descriptions of Menominee (Bloomfield 1962, Miner 1975, 1979).
- Basic conclusions about non-low vowels:
  - [ATR] contrasts are perceived in long vowels.
  - [ATR] contrasts are not perceived in short vowels, except before glottal stop.

9

## Short non-low vowels

- Where an [ATR] contrast is perceptible, Bloomfield reports that short non-low vowels undergo [+ATR] harmony:  
       /kʊʔN-at-ua:-ʔ/ → kuʔnatua:ʔ  
                                   +    +  
                                   'if thou fearest them' (Milligan:242)
- Milligan hypothesizes that short non-low vowels also undergo [+ATR] harmony in contexts where an [ATR] contrast is not perceived.

More background on this topic is provided in the appendix together with the Menominee data given in Bloomfield's orthography.

10

## Short non-low vowels

- Short non-low vowels do not obstruct harmony and plausibly undergo it.
    - Transcriptions below follow Milligan's hypothesis that short non-low vowels are targets.
- a. niwi:nipim 'I dirty his (my?) mouth' (A&P:378)  
       +    +    +  
       wɪ:nɪpʊw 'he dirties his mouth' (A&P:378)  
       -    -    -
- b. tu:hkupiahnəw 'He walks with buttocks spread' (A&P:378)  
       +    +    +  
       tʊ:hkʊpə:hsɪn 'He lies with buttocks spread' (A&P:378)  
       -    -    -

11

## Summary: Harmony in adjacent syllables

- Triggers and targets are non-low vowels.
- Harmony is for [+ATR] only.
- Harmony is regressive.

12

## Transparent vowels

---

- [-ATR] low [a a:] are transparent.

a. wayi:tu:hkatitwa? '??they work together??' (A&P:378)  
+ + - +

wɪ:t̩:hkat̩wək 'they work together' (A&P:378)  
- -

b. nici:pa:hkim 'cook (nom.)' (A&P:379)  
+ - +

ɪ:pa:hk̩w 'he cooks' (A&P:379)  
-

(Question marks indicate glosses reconstructed by Archangeli & Pulleyblank 1994)

13

## Transparent vowels

---

- Appears to be a case of assimilation at a distance.
- [+ATR] low vowels are attested in Menominee and are perceptibly different from [-ATR] low vowels.
- There is not reason to expect that the reported transparency is caused by listener error.
  - Instrumental verification of transparency in the vowel harmony would nevertheless be valuable.

14

## Opaque vowels

---

- [+ATR] low [ə ə:] block [+ATR] harmony.

a. pɪ:htəkɪ:ʔtaw 'he sticks his head in' (A&P:383)  
- + +

b. m̩:ɪhpəni:w 'he digs potatoes' (A&P:383)  
- - + +

c. kɪ:skɪnə:hcihəw 'he cuts off his fingers' (A&P:383)  
- - + +

15

## Summary: Harmony pattern

---

- Non-low [+ATR] [i i: u u:] trigger regressive harmony.
- Non-low [-ATR] [ɪ ɪ: ʊ ʊ:] are targets.
- Low [+ATR] [ə ə:] block harmony and do not trigger it.
- Low [-ATR] [a a:] are transparent.

16

---

## 2. Analysis

17

## Overview

---

- Constraints that require similar vowels in an output to be in chained correspondence are active.
  - Agreement by Correspondence
  - Blocking by Correspondence
  - Transparency by Lack of Correspondence

18

## 2.1 Theoretical background

- Similarity-driven correspondence
    - Corr-SegSeg constraints require segments to correspond with one another in an output.
    - The bulk of prior research has centered on Corr-SegSeg constraints applicable to consonants.
    - Corr-SegSeg can be restricted to segments that are identical for a particular set of features, e.g. non-low vowels ([-low]).
- (Walker 2000a,b, 2001, Hansson 2001, Rose & Walker 2004)

19

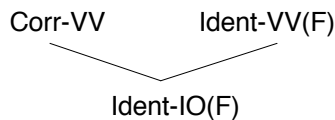
## Theoretical background

- Similarity-driven correspondence
  - If segments differing only in features [F, G] are among those required to stand in correspondence, segments that are more similar, i.e. that differ in [F] only, [G] only, or neither, are also required to correspond.

20

## Theoretical background

- Agreement by Correspondence (ABC)
  - Ident-SegSeg(F) constraints require corresponding segments in an output to be identical in specification for a feature [F].
  - For vowel harmony, V will be substituted for Seg in Corr-SegSeg and Ident-SegSeg constraints.
  - Ranking structure for vowel harmony driven by ABC:



21

## Theoretical background

- Local evaluation
  - Ident-VV(F) constraints are restricted to chain-adjacent pairs (Hansson 2006a, 2007).
  - e.g. in [...V1<sub>x</sub>...V2<sub>x</sub>...V3<sub>x</sub>...V4<sub>x</sub>...]
  - Ident-VV(F) requires identity for F between
    - V1 - V2
    - V2 - V3
    - V3 - V4

22

## Preview

- Corr-VV constraints are active that operate over:
  - Non-low vowels
  - [+ATR] vowels
- Agreement by Correspondence (ABC): Corresponding vowels can show harmony.

Input	/V1	V2	V3/
	-F	-F	+F
Output	[V1 <sub>x</sub>	V2 <sub>x</sub>	V3 <sub>x</sub> ]
	+F	+F	+F

23

## 2.2 Preview

- Approach to blocking and transparency conforms with Rhodes' (2008) typology of opaque and transparent segments in correspondence-based vowel harmony.
- (cf. Krämer 2001 for a different approach to vowel harmony using correspondence.)

24

## Preview

- **Blocking by Correspondence (BBC):**  
Intervening low [+ATR] vowels block because they correspond with potential trigger vowels and do not correspond with a potential target.

$$\begin{matrix} [V1_y & V2_x & V3_x] \\ -F & +F & +F \end{matrix}$$

25

## Preview

- **Transparency by Lack of Correspondence (TLC):**
  - Low [-ATR] vowels are transparent because they are dissimilar from triggers; they are neither [-low] nor [+ATR]. Because of their dissimilarity, they do not correspond with trigger vowels.

$$\begin{matrix} [V1_x & V2_y & V3_x] \\ +F & -F & +F \end{matrix}$$

26

## 2.3 The basic pattern Constraints: Output correspondence

- **Corr- $V_{[-lo]}V_{[-lo]}$ :**  
Let S be an output string of segments and let X and Y be [-cons, -low] segments. If X and Y  $\in$  S, then X and Y correspond.
- **Ident-VV(+ATR)**  
Let X be a segment in the output and Y be a correspondent of X in the output. If X is [+ATR], then Y is [+ATR].

(Constraint formulations after Rose & Walker 2004; prior applications of ABC to vowel harmony by Hansson 2006b, Rhodes 2008)

27

## Constraints: IO Faithfulness

- **Ident-IO(+ATR)**  
Let X be a segment in the input and Y be a correspondent of X in the output. If X is [+ATR], then Y is [+ATR].
- **Ident-IO(-ATR)**  
Let X be a segment in the input and Y be a correspondent of X in the output. If X is [-ATR], then Y is [-ATR].  
(McCarthy & Prince 1995)

28

## [+ATR] harmony

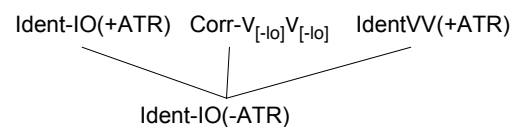
Ident-IO(+ATR), Corr- $V_{[-lo]}V_{[-lo]}$ , Ident-VV(+ATR) >>  
Ident-IO(-ATR)

Ex.  $\text{ʊtu:hpuakanɪw}$  'he has X as a pipe'

... $\text{ʊ} : \cdot \text{u} \dots$	Id-IO (+ATR)	Corr- $V_{[-lo]}V_{[-lo]}$	Id-VV (+ATR)	Id-IO (-ATR)
a. $\begin{matrix} \text{u}_x : \cdot \text{u}_x \\ + & + \end{matrix}$				*
b. $\begin{matrix} \text{ʊ}_x : \cdot \text{u}_x \\ - & + \end{matrix}$			*!	
c. $\begin{matrix} \text{ʊ}_x : \cdot \text{u}_y \\ - & + \end{matrix}$		*!		
d. $\begin{matrix} \text{ʊ}_x : \cdot \text{ɪ}_x \\ - & - \end{matrix}$	*!			

29

## Summary: Basic pattern



- **Further details:**
  - Analysis of regressive directionality and restriction of harmony to [+ATR] only – see appendix.

30

## 2.4 Blocking segments

- Low [+ATR] [ə, ə:] block harmony.
- Blocking by Correspondence
  - [...V1<sub>y</sub>...V2<sub>x</sub>...V3<sub>x</sub>...]
  - i:      ə:      i
- Blocking [+ATR] low vowel (V2) corresponds with potential trigger (V3), because of identical [+ATR] specification (Corr-V<sub>[+ATR]</sub>V<sub>[+ATR]</sub>).
- Potential non-low target (V1) is prevented from harmonizing with [ə:] (V2) because of difference in height (Ident-VV(low)).  
(Approach to blocking by similarity after Rhodes 2008)

31

## Blocking by Correspondence

- Ident-IO(+ATR), Ident-IO(low), Corr-V<sub>[+ATR]</sub>V<sub>[+ATR]</sub>
  - >> Ident-VV(low)
  - >> Corr-V<sub>[-lo]</sub>V<sub>[-lo]</sub>
    - Ident-IO(+ATR) and Ident-IO(low) prevent alterations to an underlying [+ATR] specification or height.
    - Corr-V<sub>[+ATR]</sub>V<sub>[+ATR]</sub> >> Ident-VV(low) compels a non-low [+ATR] vowel to correspond with [ə(:)].
    - Ident-VV(low) >> Corr-V<sub>[-lo]</sub>V<sub>[-lo]</sub> minimizes links in correspondence chains where vowels differ in height, even if it causes non-low vowels not to correspond.
- Result:** Vowels that differ in height will only correspond if they are both underlyingly [+ATR].

32

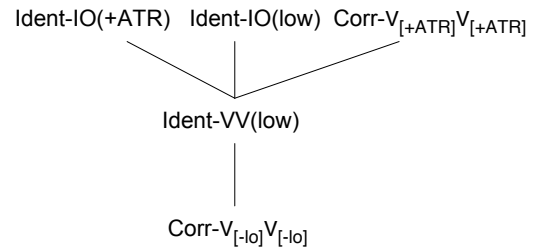
## Blocking by Correspondence

Ex. kɪ:skɪnə:hcihəw 'he cuts off his fingers'

... I • ə: • i ...	Id-IO (+ATR)	Id-IO (low)	Corr-V <sub>[+ATR]</sub> V <sub>[+ATR]</sub>	Id-VV (low)	Corr-V <sub>[-lo]</sub> V <sub>[-lo]</sub>
a. $\begin{matrix} i_y & \cdot & \text{ə:}_x & \cdot & i_x \\ - & + & + & + & \end{matrix}$				*	*
b. $\begin{matrix} i_x & \cdot & \text{ə:}_x & \cdot & i_x \\ + & + & + & + & \end{matrix}$				**!	
c. $\begin{matrix} i_x & \cdot & \text{ə}_y & \cdot & i_x \\ + & + & + & + & \end{matrix}$			*!*		
d. $\begin{matrix} i_x & \cdot & i_x & \cdot & i_x \\ + & + & + & + & \end{matrix}$		*!			
e. $\begin{matrix} i_x & \cdot & \text{a:}_y & \cdot & i_x \\ + & - & + & + & \end{matrix}$	*!				

33

## Summary: Blocking effects



34

## 2.5 Transparent segments

- Low [-ATR] [a, a:] are transparent.
- Caused by lack of similarity to trigger vowels, which are non-low.
- Ident-IO(-ATR) dominates Corr-VV, the constraint driving correspondence between any vowels, including non-low [+ATR] and low [-ATR].

35

## Transparency by Lack of Correspondence

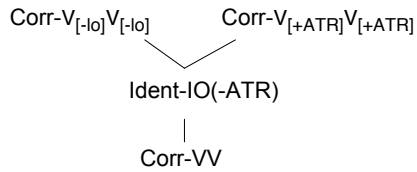
Ident-IO(-ATR) >> Corr-VV Ex. nɪ:ki:pɑ:hkim 'cook (nom.)'

... I • a: • i	Id-VV (+ATR)	Id-IO (+ATR)	Corr-V <sub>[-lo]</sub> V <sub>[-lo]</sub>	Id-IO (-ATR)	Corr-VV
a. $\begin{matrix} i_x & \cdot & \text{a:}_y & \cdot & i_x \\ + & - & + & + & \end{matrix}$				*	**
b. $\begin{matrix} i_x & \cdot & \text{ə:}_x & \cdot & i_x \\ + & + & + & + & \end{matrix}$				**!	
c. $\begin{matrix} i_x & \cdot & \text{a:}_y & \cdot & i_z \\ - & - & + & + & \end{matrix}$			*!		***
d. $\begin{matrix} i_x & \cdot & \text{a:}_x & \cdot & i_x \\ - & - & - & - & \end{matrix}$		*!			
e. $\begin{matrix} i_x & \cdot & \text{a:}_x & \cdot & i_x \\ - & - & + & + & \end{matrix}$	*!*				

36

## Summary: Transparent vowels

---



37

## 3. Discussion

---

38

## Discussion

---

- Relative similarity drives correspondence and conditions which vowels participate in the [+ATR] harmony system of Menominee.
- Harmonizing vowels: [ɪ(:) ʊ(:)]
  - Correspond with [+ATR] non-low triggers.
  - Match in height with [+ATR] non-low vowels.
- Transparent vowels: [a(:)]
  - Do not correspond with [+ATR] triggers.
  - Differ (at least) in [low] and [ATR] with [+ATR] non-low vowels.

39

## Discussion

---

- Blocking vowels: [ə(:)]
  - Correspond with [+ATR] triggers but not with [-ATR] targets.
  - Match for [+ATR] with [+ATR] vowels. They (covertly) correspond with triggers and function as non-alternating targets.
  - Differ (at least) in [ATR] and [low] with [ɪ(:) ʊ(:)]. They do not correspond with targets [ɪ(:) ʊ(:)] and terminate the correspondence chain in this context.

40

## Discussion

---

- Predictions about ABC harmony patterns:
  - Transparent segments that show an opposite specification to harmonizing segments are possible.
  - Transparent segments will be less similar to triggers along some dimension than targets are.

41

## Discussion

---

- Predictions about ABC harmony patterns:
  - Blocking segments are possible where they show similarity to triggers along some dimension.
  - Correspondence with blocking segments is preferred to other possible targets in the word. Possible reasons:
    - Greater similarity (Hansson 2007)
    - Correspondence for segments that share a particular feature is prioritized over correspondence for segments that share a different feature, as in Menominee (and see Rhodes 2008 on Khalkha Mongolian)
    - Closer proximity  
(See Rhodes 2008 on markedness in blocking effects.)

42

---

## 4. Conclusion

43

---

## Conclusion

- Categories of transparent and opaque vowels are suggestive that Menominee ATR harmony is similarity-driven.
- ABC analysis provides a formal implementation that is compatible with the pattern's capacity for assimilation at a distance.
- Contributes to characterizing the typology of harmony systems predicted under ABC:
  - Supports extension to some cases of vowel harmony.
  - Bears out prediction of blocking by correspondence, an area that has only begun to be explored.

44

---

Thank you

45

---

## Appendix

46

---

## Orthography versus phonological representation

- [ATR] contrasts are not perceived in non-low short vowels, except before glottal stop.
- In contexts where an [ATR] distinction is not perceptible, Bloomfield wrote short non-low vowels that are underlyingly [-ATR] with the symbol corresponding to the [-ATR] form in harmony environments.
- Milligan (2000) assumes this orthographic choice represented the absence of an audible change in ATR quality, an assumption that I adopt.

47

---

## Orthography versus phonological representation

- The underlying [ $\pm$ ATR] status of a short non-low vowel can often be deduced from its phonological patterning:
  - By whether it triggers [+ATR] harmony
  - From alternations with long vowels for prosodic reasons:
    - nɪkɔt 'one' (A&P:381)
    - nɪkɔ:tə:yaw 'one affair' (A&P:381)
    - nɪku:tikatəw 'one-legged being' (A&P:381) (by harmony)

48

## Orthography versus phonological representation

- As an alternative, short non-low vowels could be analyzed as transparent, except before [ʔ] (e.g. Archangeli & Pulleyblank 1994, 2007, Archangeli & Suzuki 1995).
- But treating these vowels as transparent complicates the analysis (Milligan 2000), and concrete evidence for it is lacking.

49

## Menominee forms in Bloomfield's Orthography

ahku:pi:kat	'the water extends so far'
ahko:hnew	'he walks so far'
ce:pa:hkow	'he cooks'
ke:skene:hcihew	'he cuts off his fingers'
kuʔnatwa:ʔ	'if though fearest them'
mo:nehpe:ni:w	'he digs potatoes'
miani:hse:sak	'tiny owls'
neci:pa:hkim	'cook (nom.)'
nekot	'one'
neko:te:yaw	'one affair'
neku:tikate:w	'one-legged affair'
newi:nepim	'I dirty his (my?) mouth'

50

## Menominee forms in Bloomfield's Orthography

nu:ke:sek	man's name "Big Sky"
otu:hpuakanew	'he has X as a pipe'
oto:ternew	'he has X as a totem'
pe:htehki:ʔtaw	'he sticks his head in'
sipi:ah	'river (loc.)'
si:piahse:hseh	'creek'
se:pe:w	'river'
tu:hkopiahnew	'he walks with buttocks spread'
to:hkops:hse	'he lies with buttocks spread'
wayi:tu:hkatitwaʔ	'??they work together??'
we:nepow	'he dirties his mouth'
we:to:hkatowak	'they work together'

51

## Regressive directionality

- Calls for a refinement to Ident-VV(+ATR)
- Ident-V<sub>R</sub>V<sub>L</sub>(+ATR)

Let X be a segment in the output and Y be a correspondent of X such that Y precedes X in the sequence of segments in the output. If X is [+ATR], then Y is [-ATR].

(Rose & Walker 2004)

52

## Regressive directionality

Ident-V<sub>R</sub>V<sub>L</sub>(+ATR) >> Ident-IO(-ATR)

Ü: • u	Id-IO (+ATR)	Corr- V <sub>[-lo]</sub> V <sub>[-lo]</sub>	Id-V <sub>R</sub> V <sub>L</sub> (+ATR)	Id-IO (-ATR)
a. <sup>☞</sup> u <sub>x</sub> • u <sub>x</sub> + +				*
b. Ü <sub>x</sub> • u <sub>x</sub> - +			*!	
c. Ü <sub>x</sub> • u <sub>y</sub> - +		*!		
d. Ü <sub>x</sub> • i <sub>x</sub> - -	*!			

53

## Regressive directionality

Ident-IO(-ATR) >> Ident-V<sub>L</sub>V<sub>R</sub>(+ATR)

Ex. nu:kr:stk man's name "Big Sky"

u: • r: ...	Id-IO (+ATR)	Corr- V <sub>[-lo]</sub> V <sub>[-lo]</sub>	Id-V <sub>R</sub> V <sub>L</sub> (+ATR)	Id-IO (-ATR)	Id-V <sub>L</sub> V <sub>R</sub> (+ATR)
a. <sup>☞</sup> u <sub>x</sub> • i <sub>x</sub> + -					*
b. u <sub>x</sub> • i <sub>x</sub> + +				*!	
c. u <sub>x</sub> • i <sub>y</sub> + -		*!			
d. Ü <sub>x</sub> • r <sub>x</sub> - -	*!				

54

## No [-ATR] harmony

Ident-IO(-ATR) >> Ident-VV(-ATR)

u: • I ...	Id-IO (+ATR)	Corr- V <sub>[-lo]</sub> V <sub>[-lo]</sub>	Id-V <sub>R</sub> V <sub>L</sub> (+ATR)	Id-IO (-ATR)	Id-VV (-ATR)
a. $u_x \cdot i_x$ + -					*
b. $u_x \cdot i_x$ + +				*!	
c. $u_x \cdot i_y$ + -		*!			
d. $\bar{u}_x \cdot \bar{i}_x$ - -	*!				

55

## Comparison: Prior Alignment-driven analysis

	ABC	Align-driven (A&S 1995)
[a(:)] is not a target	Dissimilar to non-low, [+ATR] triggers	Markedness: ATR/Lo
[ə(:)] is not trigger	Dissimilar to non-low, [-ATR] targets	Sequential grounding: *ATR...Lo
[a(:)] is transparent	Dissimilar to non-low, [+ATR] triggers	Local conjunction: ATR/Lo & *ATR...Lo

- Dissimilarity and markedness are both plausible sources of neutrality—ABC allows for both.
- ABC calls on a unitary basis of similarity for participation in Menominee harmony. Neither sequential grounding or local conjunction are called for.

56

## References

- Archangeli, D. & D. Pulleyblank. 1994. *Grounded Phonology*. Cambridge, MA: MIT Press.
- Archangeli, D. & D. Pulleyblank. 2007. Harmony. In P. de Lacy, ed., *The Cambridge Handbook of Phonology*, pp. 353-378. Cambridge: Cambridge University Press.
- Archangeli, D. & K. Suzuki. 1995. Menominee vowel harmony: O(pacity) & T(ransparency) in OT. In K. Suzuki & D. Elzinga, eds., *South Western Optimality Theory Workshop 1995* (Arizona Phonology Conference Volume 5), pp. 1-17. Coyote Papers, University of Arizona.
- Bloomfield, L. 1962. *The Menominee Language*. New Haven, CT: Yale University Press.
- Bloomfield, L. 1975. *The Menominee Lexicon*, ed. by C. F. Hockett. Milwaukee, WI: Milwaukee Public Museum Press.
- Cole, J. 1987. *Planar Phonology and Morphology*. PhD dissertation, MIT.
- Cole, J. & L. Trigo. 1988. Parasitic harmony. In H. van der Hulst and N. Smith, eds., *Features, Segmental Structure, and Harmony Processes (Part II)*, pp. 19-38. Dordrecht: Foris.
- Hansson, G. Ó. 2001. *Theoretical and typological issues in consonant harmony*. Ph.D. dissertation, University of California, Berkeley.

57

## References

- Hansson, G. Ó. 2006a. Understanding harmony as agreement. Paper presented at the Annual Meeting of the Linguistic Society of America, Albuquerque, NM, January 2006.
- Hansson, G. Ó. 2006b. Locality and similarity in phonological agreement. Paper presented at the PhonologyFest Workshop, Indiana University, Bloomington, June 23, 2006.
- Hansson, G. Ó. 2007. Blocking effects in agreement by correspondence. *Linguistic Inquiry* 38, 395-409.
- Krämer, M. 2001. *Vowel Harmony and Correspondence Theory*. PhD dissertation, Heinrich-Heine-Universität Düsseldorf.
- Lubowicz, A. 2002. Derived Environment Effects in Optimality Theory. *Lingua* 112, 243-280.
- Milligan, M. 2000. A new look at Menominee vowel harmony. *Papers of the 31st Annual Algonquian Conference*, 237-254.
- McCarthy, J. & A. Prince. 1995. Faithfulness and reduplicative identity. In J. Beckman, L. Walsh-Dickey, & S. Urbanczyk, eds., *University of Massachusetts Occasional Papers: Papers in Optimality Theory* 18, 249-384. Amherst, MA: GLSA.

58

## References

- Miner, K. L. (ed.). 1975. *Omaeqnomew-kiketwanan: A Basic English-Menominee and Menominee-English Word List*. Madison: Wisconsin Department of Public Instruction.
- Miner, K. L. 1979. Theoretical implications of the great Menominee vowel shift. *Kansas Working Papers in Linguistics* 4(1), 7-25.
- Rhodes, R. 2008. Vowel harmony as Agreement by Correspondence: the case of Khalkha Mongolian rounding harmony. Paper presented at Trilateral Linguistics Weekend (TREND), University of California, Santa Cruz, May 10, 2008.
- Rose, S. & R. Walker. 2004. A typology of consonant agreement as correspondence. *Language* 80, 475-531.
- Smolensky, P. 1993. Harmony, markedness, and phonological activity. Paper presented at the First Rutgers Optimality Workshop (ROW 1), Rutgers University, New Brunswick, New Jersey.
- Smolensky, P. 1997. Constraint interaction in generative grammar II: Local conjunction. Paper presented at the Hopkins Optimality Theory Workshop/Maryland Mayfest 1997, Baltimore, MD.

59

## References

- Steriade, D. 1987. Redundant values. *Papers from the 23rd Regional Meeting of the Chicago Linguistic Society (Vol. 2)*, pp. 339-362. Chicago Linguistic Society, University of Chicago.
- Walker, R. 2000a. Long-distance consonantal identity effects. *WCCFL* 19, 532-545.
- Walker, R. 2000b. Yaka nasal harmony: Spreading or segmental correspondence? *BLS* 26, 321-332.
- Walker, R. 2001. Consonantal correspondence. In R. Kirchner, J. Pater & W. Wikeley, eds., *Proceedings of the Workshop on the Lexicon in Phonetics and Phonology*, pp. 73-84. Papers in Experimental and Theoretical Linguistics 6. University of Alberta, Department of Linguistics.

60