

Same problem, different solutions

Gaps and repairs at the morphology-phonology interface

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Outline

- 1 Sketch of the problem
 - Description and example
 - The challenge
- 2 Sketch of a solution
 - Framework
 - Extension
- 3 A prediction of the solution
 - Description and example
 - Analysis
- 4 Conclusions and questions



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Phonologically motivated paradigmatic gaps

- Phonology may interfere in word-formation processes.
- This can lead to a 'repair'.
- But the problem may be irreparable, resulting in a gap.



Gaps in Norwegian verbal paradigms

- Well-formed infinitive–imperative pairs
 - å skrive – skriv! ‘(to) write’
 - å bytte – bytt! ‘(to) (ex)change’
 - å løfte – løft! ‘(to) lift’

- Ill-formed infinitive–imperative pairs
 - å åpne – *åpn! ‘open’
 - å padle – *padl! ‘paddle’
 - å sykle – *sykl! ‘bike’



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Why are phonologically motivated gaps important?

In Optimality Theory ...

- For every input, there is always an optimal output.
- A well-formed output does not have to be perfect; it just has to be best.



Why are phonologically motivated gaps important?

- With gaps, no output is good enough.
- The faithful output violates highly ranked *MARK.
- Unfaithful outputs don't win either.
- The word-formation process fails. An identifiable input gets no output.



The analytical challenge

- Gaps represent synchronic grammatical knowledge.
- We need a strategy for analyzing these cases within OT.
- The null parse/output? Control? String-based correspondence theory?



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Optimal paradigms theory (McCarthy 2005)

- Candidates are paradigms
- Violations of markedness and IO-faithfulness constraints are awarded for each instance of a violation within the paradigm




Optimal gaps (Rice 2005)

- A candidate paradigm may be ‘incomplete’; it may fail to implement some category.
- $\text{MAX}\{\text{CAT}\}$ constraints disprefer gaps.
- Consequence $\text{MARK, FAITH} \gg \text{MAX}\{\text{CAT}\}$, a paradigm with a gap may be optimal.



Optimizing a defective paradigm

	sykl/inf./imp.	SONSEQ	ID(VOI) _{IO}	MAX{IMP.}
a)	sykle _{inf.} , sykl _{imp.}	*!		
b)	sykle _{inf.} , sykl _{imp.}		*!	
 c)	sykle _{inf.} ,			*



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Factorial typology

- $\text{MARK} \gg \text{MAX}\{\text{CAT}_1\} \gg \text{FAITH} \gg \text{MAX}\{\text{CAT}_2\}$
- Cat_1 will be expressed with an unfaithful output.
- Cat_2 is unexpressed; a gap is the best solution.



When imperatives and singulars are the same

- A root can yield a verb or a noun.
- The imperative and the singular are identical.
 - *skriv!* 'write!'; (*et*) *skriv* '(a) document'
 - *dans!* 'dance!'; (*en*) *dans* '(a) dance'
 - *kast!* 'throw!'; (*en*) *kast* '(a) throw'



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When imperatives and singulars differ

- Some roots end in clusters with rising sonority.
 - /sykl/ ‘bike’
 - /adl/ ‘nobility’
 - /hindr/ ‘hinder’
 - /ordn/ ‘arrange’
- How are singulars formed?
—By epenthesis: *sykkel, adel, hinder, orden*.
- How are imperatives formed?
—They aren’t.



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Nouns undergo epenthesis in the singular

- /sykl/ (No underlying schwa)
 - *sykkel, syklene, syklist*
 - **sykkelene, *sykkelist*

- /kjøkken/ (Underlying schwa)
 - *kjøkken, kjøkkenene*
 - **kjøknene*




Gaps and repairs in Norwegian: An analysis

- One grammar yields both epenthesis and a gap.
- The fully faithful candidate violates SONSEQ .
- $\text{MAX}\{\text{SG.}\} \gg \text{DEP}$ favors epenthesis in the singular.
- $\text{DEP} \gg \text{MAX}\{\text{IMP.}\}$ favors a gap for the imperative.



Optimize one gap and one 'repair'

	sykl/sg./pl./inf./imp.	S.SEQ	MAX{SG.}	DEP	MAX{IMP.}
a)	sykl _{sg.} , sykler _{pl.} sykle _{inf.} , sykl _{imp.}	*!*			
b)	sykler _{pl.} , sykle _{inf.} ,		*!		*
 c)	sykkel _{sg.} , sykler _{pl.} , sykle _{inf.} ,			*	*
d)	sykkel _{sg.} , sykler _{pl.} sykle _{inf.} , sykkel _{imp.}			**!	



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The optimal gaps approach . . .

- construes gaps crucially as a phonology-morphology interface problem, and models this in optimal paradigms theory.
- reveals *same problem, different solutions* situations, cf. Norwegian singulars vs. imperatives.
- offers enhanced theoretical parsimony by eliminating the null parse, \odot , MPARSE, and Control.



Unanswered questions

- Why are there gaps? Why is non-expression ever the optimal solution?
- What about *same problem, different solutions* situations in which the *different solutions* are both repairs?



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