

Class 6: The duplication and conspiracy problems

Overview: Sometimes it looks like multiple parts of the grammar are doing the same thing. Is this bad, and if so can we do anything about it?

0. Business

- Anything?
- [We'll spend 10 minutes on Malagasy at the end]
- **Kie: start the recording**

1. Dynamic vs. static phonology

- The 'dynamic' phonology of a language is the phonology that shows up in alternations. We have analyzed this with rules:

cat[s]	walk[t]
dog[z]	jog[d]
pea[z]	flow[d]

- The 'static' phonology is the generalizations that hold of monomorphemic words. Often analyzed with morpheme structure rules/constraints:

[læps], [lɪst] but no words like *[læpz], *[lɪsd]

- ? Let's try writing both a phonological rule and a morpheme structure rule for this. Then, let's see if we can devise an "ordering solution" as you read about in K&K.

2. Conceptual remarks

- Morpheme structure rules/constraints are weird:
 - no one is claiming that the English lexicon actually contains words like /ækd/, repaired by morpheme structure rule to ækt
 - after all, on hearing [ækt], why would a learner construct a lexical entry /ækd/ instead of /ækt/?
 - But the prohibition on ækd must be expressed somewhere in the grammar of English
 - assuming it is “significant”
 - e.g., if English speakers reject ækd as a new word, or have trouble distinguishing between ækd and a legal alternative.
 - Some might claim that the lexicon contains /ækd/, with a final consonant underspecified for [voice].
 - Still, if the morpheme structure rule applies only to underspecified Cs, what *would* happen to hypothetical fully specified /ækd/? What prevents it from existing??
 - This comes back to the ‘lexical symmetry’ idea we saw in K&K’s discussion of Russian final devoicing:
 - The grammar needs to explain, one way or another (phoneme inventory, morpheme structure, or normal rules), why certain types of underlying forms don’t occur.
- ‽ An even weirder case: some English speakers think that *slol* and *smæŋ* sound funny.¹ If we tried to write a rule to change them, instead of merely a constraint banning them, what would they change to??

3. Example: Estonian

- Finno-Ugric language from Estonia with 1.1 million speakers
- Official language of Estonia
- Some notable Estonian speakers:



Kelly Sildaru, freestyle skier



Arvo Pärt, composer



Kerli, singer/songwriter

¹ There are few monosyllabic words like this—here are all the examples from the CMU Pronouncing Dictionary, excluding probable proper names. OED has a few more but those were all previously unknown to me.

$s\{p,m\}C_0VC_0\{p,b,m\}$: smarm(y), smurf, spam, sperm, spiff(y), spoof

$s\{m,n\}C_0VC_0(m,n,\eta)$: smarm(y)

$\{f,s\}\{l,r\}C_0VC_0\{l,r\}$: shrill, slur, slurp—notice none with $l\dots l$ or $r\dots r$

$skC_0VC_0\{k,g,\eta\}$: skink, skulk, skunk

- I've seen the basic data cited as being from Prince 1980, but I couldn't find them there (??).
 - Data below are just spelling [which does not reflect all three length levels], from this Estonian noun decliner: www.filosoft.ee/gene_et, using additional roots from Blevins 2005.
- Estonian content morphemes have a **minimum size**: at least two syllables or one "heavy" syllable
 - such as CVV, VV, CVCC, VCC
 - */ko/, */ma/, */kan/ ← no good because they would be a single "light" syllable
- Estonian also has a rule deleting final vowels in the nominative sg.:

	<i>nom. pl</i>	<i>nom. sg.</i>	
/ilma/	ilma-d	ilm	'weather'
/matsi/	matsi-d	mats	'lout'
/konna/	konna-d	konn	'frog'
/tänav/	tänav-d	tänav	'street'
/seminari/	seminari-d	seminar	'seminar'
/tuleviku/	tuleviku-d	tulevik	'future'
/raamatu/	raamatu-d	raamat	'book'

- But the rule fails to apply in certain cases:

/pesa/	pesa-d	pesa	'nest'
/kana/	kana-d	kana	'hen'
/koi/	koi-d	koi	'clothes-moth'
/maa/	maa-d	maa	'country'
/koli/	koli-d	koli	'trash'

- ? Let's try to write a mini-grammar for Estonian that tries to capture these facts. What's unsatisfying about it?

4. The duplication problem (Kenstowicz & Kisseberth 1977)

= cases where phonological rules and morpheme structure constraints seem to be doing the same thing ('duplicating' each other's effects).


- These troubled researchers from the late 1970s onwards, because it seems (although we don't actually know) that a single phenomenon (e.g., avoidance of sub-minimal words) should have a single explanation in the grammar.

? Anyone want to offer a summary of how this plays out in Chamorro? (if time)

5. Another duplication case

- Many sign languages require that a content morpheme can have only one handshape (though within that handshape, fingers can open or close during the morpheme)
- When two roots are put together to form a compound word, there is often a rule that assimilates handshape
 - Hong Kong Sign Language example and images from Tang et al. 2010
 - Sign language from Hong Kong, related to Chinese Sign Language
 - endangeredlanguages.com estimates 9,000 users



- TASTE handshape is 

TASTE




- GOOD handshape is 

GOOD

- TASTE^GOOD (meaning 'tasty') takes the TASTE handshape plus the 'thumb-extended' feature



to get handshape  (plus a closing movement): TASTE^GOOD

- In Estonian, a word-shape requirement **prevents** a rule from applying
- In Hong Kong Sign Language, a word-shape requirement **causes** a rule to apply

10. Constraints as rule triggers

- $\emptyset \rightarrow i$, only if needed to eliminate *CCC violation

? What exactly will happen, step by step?

11. Problems for triggering

? What happens if the grammar has a rule $\emptyset \rightarrow i$ (with no context) and a constraint *CCC?

/arbso/

? What happens if a grammar has rules $\emptyset \rightarrow i$ and $C \rightarrow \emptyset$ and a constraint *CC?

/eldu/

12. Where this leaves us

- Many more conspiracies were identified, giving rise to more constraints.
- People liked constraints, because they solved the conspiracy problem and also gave clearer theoretical status to the idea of “markedness”
 - Everyone knew languages don’t “like” CCC sequences (they are “marked”), but this was not directly encoded in grammars until constraints like *CCC came along.
- On the other hand, we’ll see that it’s unclear exactly how constraints should work.
 - Thursday we’ll wallow in this problem
 - Next week we’ll start trying to solve it

13. Final business

- 10 minutes for Malagasy—I want to talk about vowels
 - I also want to talk about exposition, but let's leave that till next week
- **“Muddiest point” exercise again:** Let's end today by again having everyone briefly type in the chat the issue or topic that was most unclear/puzzling/etc. to them today
- **Kie: stop the recording!**

References

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