



# Ling 566

## Dec 9, 2021

Variation in the English Auxiliary System

# Overview

Reminder:  
Course evals!

- AAL copula absence
- Why it's not phonological deletion
- Alternative syntactic analyses
- The winner: An empty element (!)
- Reflection on syntactic argumentation
- Reading questions
- Final preview

# Linguistic Argumentation

- The available data usually underdetermines the analysis (cf *to*)
- Sometimes appeals to naturalness can help
- Further constraints come into play when we try to make interacting analyses consistent
- Still, just about everything could be done differently if we're willing to change assumptions
- Data underdetermines the theory; difficult to argue that something must be analyzed a certain way

W

# RE: Data underdetermines theory, your current sense of syntactic analyses:

One right answer, we might not have found it yet

If we only look at grammaticality/paraphrases, always underdetermined

Could be that different speakers have internalized different analyses

Not sure that grammars are modeling wetware

None of the above

# An Unusual Case

- The verbless sentences in Chapter 15 provide a rare example where the data seem to force a particular kind of analysis
- Specifically: an empty element
- And we tried **very** hard to avoid it

# Notes on African American Language

- aka AAE, AAVE, Ebonics, Black English, and various other things
- All natural languages are systematic
- This is just as true of stigmatized varieties as of prestige dialects
- The claim that AAVE has “no discernible rules” (columnist William Raspberry) is blatantly false
- This is not to deny the social and economic value of using a prestige dialect
- But prestige is not correlated with systematicity

# Further readings on AAL

- Rickford, J.R. & R.J. Rickford. *Spoken soul: The story of black English*. John Wiley & Sons Incorporated, 2000.
- Lanehart, Sonja, ed. *The Oxford Handbook of African American Language*. Oxford University Press, 2015.
- Mufwene, Salikoko S., et al., eds. *African-American English: structure, history, and use*. Routledge, 2021.

# Missing *be* in AAL

- Some AAL sentences:

*Chris at home*

*We angry with you*

*You a genius*

*They askin for help*

- Like GAE sentences with a form of *be* missing
- Analogous sentences occur in many languages



# AAL Also Allows Sentences With *be*

*Chris at home*

*Chris is at home*

*We angry with you*

*We're angry with you*

*You a genius*

*You are a genius*

*They askin for help*

*They're askin for help*

# Labov's Deletion Account

- Copula absence comes about when contracted auxiliaries (*'s* and *it 're*) are deleted altogether
- Predicts that copula absence is only possible where contraction is: (strong claim)

*You got to be good, Rednall!*

*\*You got to  $\emptyset$  good, Rednall!*

*Be nice to your mother!*

*\* $\emptyset$  Nice to your mother!*

*It ain't a flower show, is it?*

*\*It ain't a flower show, 's it?*

*\*It ain't a flower show,  $\emptyset$  it?*

# Counterexamples to Labov's Account

*How old you think his baby is*

*\*How old you think his baby 's*

*How old you think his baby ∅*

*Tha's the man they say is in love*

*\*Tha's the man they say 's in love*

*Tha's the man they say ∅ in love*

- The relevant examples here are with fully contracted 's
- These examples show that copula absence can't depend on copula contraction

# Our Challenge

- Provide a precise analysis of AAL copula absence within our theory
- Account for all of the facts covered by the deletion account
- Deal with the counterexamples to the deletion account

# Two Possible Analyses

1. Add another initial symbol which is [HEAD [PRED +]], not [HEAD *verb*]:

$$\left[ \begin{array}{l} \text{HEAD} \\ \text{VAL} \end{array} \left[ \begin{array}{l} \begin{array}{l} \textit{pos} \\ \text{PRED} \quad + \end{array} \\ \begin{array}{l} \text{SPR} \quad \langle \rangle \\ \text{COMPS} \quad \langle \rangle \end{array} \end{array} \right] \right]$$

2. Write a special grammar rule for verbless clauses:

$$\left[ \begin{array}{l} \textit{phrase} \\ \text{SYN} \\ \text{SEM} \end{array} \left[ \begin{array}{l} \begin{array}{l} \text{HEAD} \left[ \begin{array}{l} \textit{verb} \\ \text{FORM} \quad \textit{fin} \end{array} \right] \\ \text{VAL} \left[ \begin{array}{l} \text{SPR} \quad \langle \rangle \end{array} \right] \\ \text{MODE} \quad \textit{prop} \\ \text{INDEX} \quad \boxed{2} \end{array} \right] \end{array} \right] \rightarrow \left[ \begin{array}{l} \boxed{1}\text{NP} \\ \text{CASE} \quad \textit{nom} \\ \text{AGR} \quad \textit{non-1sing} \end{array} \right] \left[ \begin{array}{l} \text{SYN} \\ \text{SEM} \end{array} \left[ \begin{array}{l} \begin{array}{l} \text{HEAD} \left[ \begin{array}{l} \text{PRED} \quad + \end{array} \right] \\ \text{VAL} \left[ \begin{array}{l} \text{SPR} \quad \langle \boxed{1} \rangle \end{array} \right] \\ \text{INDEX} \quad \boxed{2} \end{array} \right] \end{array} \right]$$

# A Counterexample to Both:

*How old you think his baby  $\emptyset$*

- LDDs require that a non-empty GAP list be licensed by a lexical head that is missing an argument
- Neither the initial symbol analysis nor the grammar rule analysis posits a lexical head corresponding to *is* that would license the gap
- If we posit a silent variant of finite forms of *be*, we solve this problem

# The Silent *be* Analysis

## Silent *be* Lexical Rule

$$\left[ \begin{array}{l} \textit{i-rule} \\ \text{INPUT} \quad \langle \text{be}, X \rangle \\ \text{OUTPUT} \quad \left\langle \phi, \left[ \text{HEAD} \left[ \begin{array}{ll} \text{AGR} & \textit{non-1sing} \\ \text{FORM} & \textit{fin} \\ \text{INV} & \text{—} \end{array} \right] \right] \right\rangle \end{array} \right]$$

- This is a highly specialized lexeme-to-word rule (i-rule)

# Some Questions About This Rule

## Silent *be* Lexical Rule

$\left[ \begin{array}{l} i\text{-rule} \\ \text{INPUT} \quad \langle \text{be}, X \rangle \\ \text{OUTPUT} \quad \langle \phi, \left[ \begin{array}{l} \text{HEAD} \quad \left[ \begin{array}{l} \text{AGR} \quad \textit{non-1sing} \\ \text{FORM} \quad \textit{fin} \\ \text{INV} \quad - \end{array} \right] \end{array} \right] \rangle \end{array} \right]$	
QUESTION	ANSWER

Which lexemes does it apply to?

Those spelled *be*

Why is the output [FORM *fin*]?

\**You got to Ø good*

Why is the output AGR *non-1sing*?

\**I Ø hungry.*

Why is the output [INV –]?

\**It ain't a flower show, Ø it?*



# How does this account for LDDs?

Silent *be* Lexical Rule

$$\left[ \begin{array}{l} i\text{-rule} \\ \text{INPUT} \quad \langle \text{be}, X \rangle \\ \text{OUTPUT} \quad \langle \phi, \left[ \text{HEAD} \left[ \begin{array}{ll} \text{AGR} & \text{non-1sing} \\ \text{FORM} & \text{fin} \\ \text{INV} & - \end{array} \right] \right] \rangle \end{array} \right]$$

Answer: The usual way. That is, the output of this rule (silent *be*) can have a non-empty GAP list. The fact that the verb is not pronounced doesn't matter.

# A Possible Objection

- Earlier, we touted the WYSIWYG character of our theory: everything justified by something observable.
- Doesn't positing an inaudible verb undermine that claim?
- Response
  - A word with no phonology is just the shortest possible word
  - Positing one such word, with restricted distribution is qualitatively different from allowing multiple "empty categories" that can appear in many places

# W What do you think about empty categories?

Any/all okay. Empty categories  
are cool!

Traces of movement seem more  
plausible than a silent verb

A silent verb seems more  
plausible than traces

Don't like them

# Conclusions

- Studying a variety of languages and dialects is important to discovering what formal devices are necessary to account for natural language
- Formulating a precise theory of grammar allows us to investigate in detail the differences between dialects and between languages
- We were able to make the argument for a silent verb because our analyses were precise, and the consequences could be worked through

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# Reading Questions

- I just had trouble understanding why versions of *have* that aren't auxiliaries are AUX+, since this feels unintuitive.
- Why give *have* in *Have you any idea of the time?* and the one in *They had a fit* different lexical entries?

# Reading Questions

- Why does the Silent Be Lexical Rule have the INV feature specified but not other features like POL and PRED specified?
- Where does the semantics for tense come from when using the Zero Copula Rule? Tense information does not appear, but sentences need that semantic information in a fully functioning grammar or am I missing some detail about the rule?

# The Silent *be* Analysis

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- This is a highly specialized lexeme-to-word rule (i-rule)



# Reading Questions

- What's the general HPSG approach to copula in languages like Russian and Hungarian? Is it similar to the best solution for AAE, i.e. the postulation of a phonologically silent inflected copula? I wonder, if the grammar were to be rebuilt from scratch on the basis of a copula-optional (or copula-obligatorily-omitted?) language like AAE, Russian, or Hungarian, how phrase structure rules might have been conceptualized differently from the very beginning.

# Reading Questions

- Are there any other silent words in English or other languages?
- Are there cases in other dialects of English or other languages where there are silent words that would normally carry semantic information in the syntax we have been developing but are missing due to the silent form? How would the semantic information be kept consistent between the sentence pairs with and without the silent word?

# Reading Questions

- Are there phenomena in SAE that are explained with silent words? For example, we didn't discuss the concept of "do support" but could that be explained with these silent words?
- Are there any phenomena that we already learned about that people argue should be explained using silent words?

# Reading Questions

- One thought I had related to the previous lecture is, then is it not possible to have infinite lexical rules? What is the minimum requirement to create a lexical rule? Is it in terms of having a certain number of people accept that linguistic phenomena?

# Reading Questions

- In the Silent Copula Analysis, what is the exact formal delineation made between the phono-linguistics and syntax? It looks like the rule takes any form of be, and outputs an "unpronounced"/empty word that is non-1sing, finite, and non-inverted. So are we saying the "unpronounced" quality of the output word is a strictly syntactic process, that is expressed phonologically as nothing?

# Reading Questions

- I'm curious how one would test Labov's theory of the underlying cognitive copula. Since many AfAm/Black speakers also have native command of SAE and both dialects are typically learned around the same time, I feel like knowledge of SAE would affect this test. Even with the silent Be lexical rule - I wonder if this isn't SAE muddying the waters a bit? How would one truly know?

# Reading Questions

- The discussion of variation got me thinking: is there a way to leverage our model to account for/predict synchronic change? If so, how?
- I can't remember the context, but I feel like in class we spoke about the possibility of incorporating statistics in the grammar formalism--I'm really curious if this could be used to predict at least some of the synchronic changes we've observed.

# Reading Questions

- Is the grammar capable of formalizing all variations in languages? I see that for have we add multiple lexical entries for its different usages, and for silent be in AAVE we use a lexical rule and zero copula rule. Is the system adaptable to all possible variations? have must definitely remain in the SAE system, but when do we say it is time to build a new framework for a new language variant (say AAVE) that is too different from the 'standard' one?



# Reading Questions

- I am curious what are common factors that researchers usually consider a dialect worth studying. Is its speaker population the main one? And another related question, how to define certain language variations as valid dialects rather than ungrammatical sentences?

# Reading Questions

- What we have learned so far seems the foundation of HPSG and this chapter gives us two examples of variations. I am wondering whether these ways are common ways to accommodate other variations. Like we can first consider revising lexical entries or lexical rules, if it doesn't work, we can add new rules.

# Reading Questions

- In dialects that allow the [AUX +] have, how would the annotation be handled in a corpus, where there might be ambiguous in interpretation and variation among speakers?
- From reading this chapter, I did ponder on how do we determine which dialects to take into account for analysis of computational grammar?

# Reading Questions

- When it comes to applying our grammar to other dialects and other languages, would it be beneficial to include language and dialect as a features of their own? I image that this could be useful in some ways because it could allow you to pick out what features or constraints might apply to specific languages and have those passed down from the most general to the least general dialect using a type hierarchy, although this could be less than effective if there are a number of features/rules/constraints that apply to one language/dialect, but not another (for example thinking about how a feature for Germanic would apply to English if were its subtype).

# Reading Questions

- I was wondering about the discourse now with allowing dialects and other language varieties within NLP based applications and programs, is there any conversation happening within computational linguistic spaces that is advocating for a wider range of incorporation of English (and general language) varieties?

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