

1. Introduction

• How is sentence-level phrasal stress determined?

- How is the phrasal stress assignment operation defined?
- What is the shape of its input?

• Are there exceptions to this operation?

- Is it desirable to posit classes of exceptions?

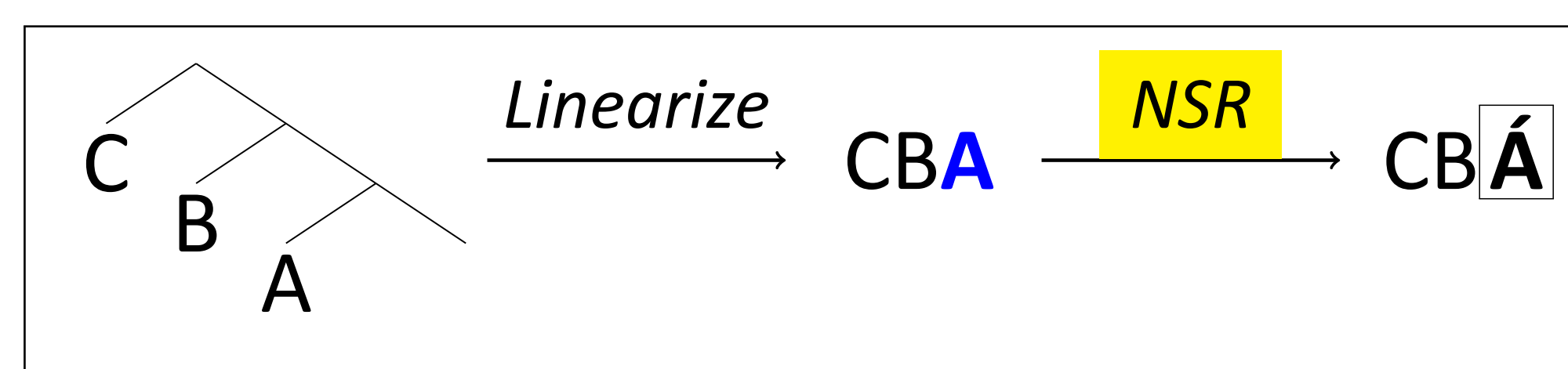
Main Assertions

- Proper generalizations about phrasal stress patterns can only be formulated when syntax is considered
- The null hypothesis should be that there are no exceptions to the phrasal stress assignment
- Phrasal stress patterns can help uncover properties of the syntactic derivation (like linear order is used)

2. Input to Phrasal Stress Assignment?

- Nuclear Stress: most prominent phrasal stress, at the utterance level
 - The Nuclear Stress Rule (NSR) is a very well-studied aspect of sentence-level phonology
- Let us consider two competing hypotheses:

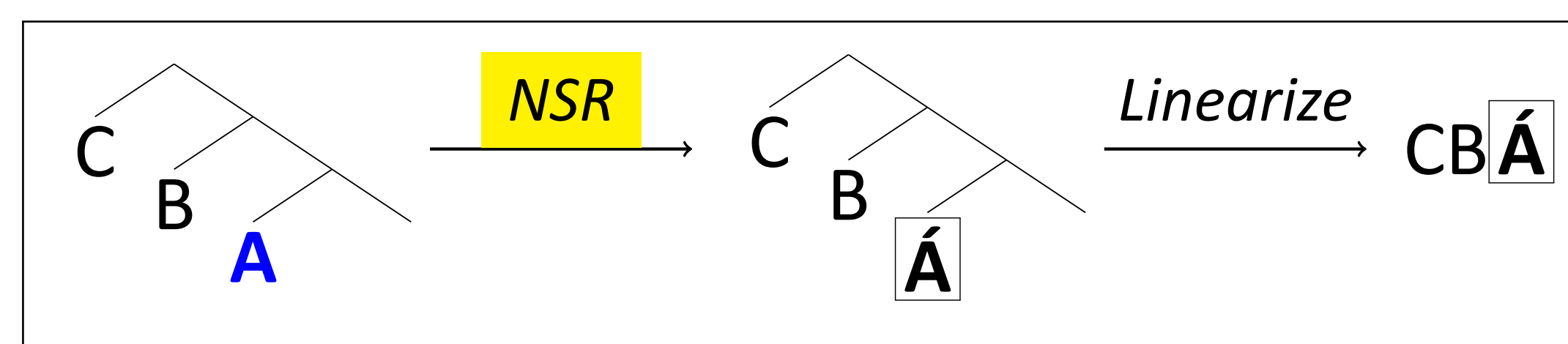
- (1) **Linear NSR Input** (e.g., Chomsky and Halle 1968, Adger 2007)
- Possible NSR: Stress on the **rightmost** stressable element



◇ (Open question about what defines stressable)

- (2) **Structural NSR Input** (e.g., Cinque 1993, Kahnemuyipour 2009)

- Possible NSR: Stress on the **most embedded** stressable element



◇ (Open question about what kind of structure matters)

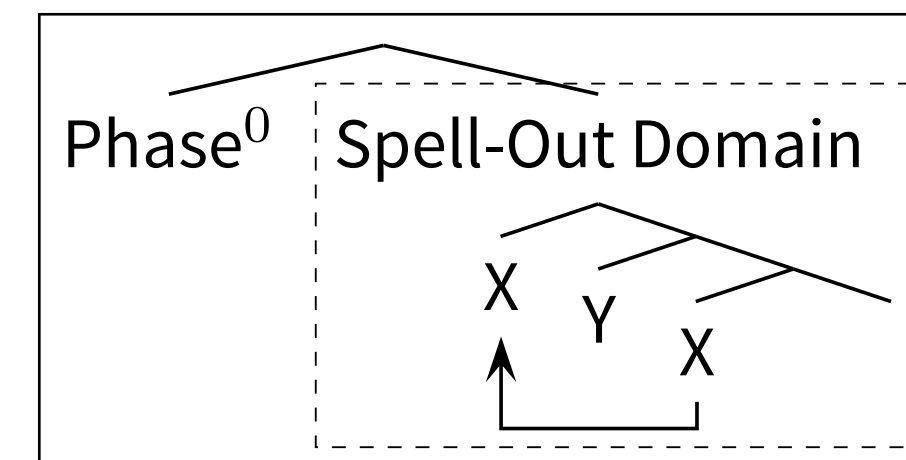
3. Effects of Syntax

- The syntactic derivation influences phrasal stress
 - Syntax proceeds in cycles (contemporary terms: 'phases')
 - Phrasal stress assigned at an earlier cycle can be maintained at later ones (Bresnan 1971)
- (3) a. {Helen has {written some **bóok**} }.
- b. {What **bóok** has {Helen {written *what* **bóok**} } }?
- ⇒ **Phrasal stress is assigned multiple times per sentence**

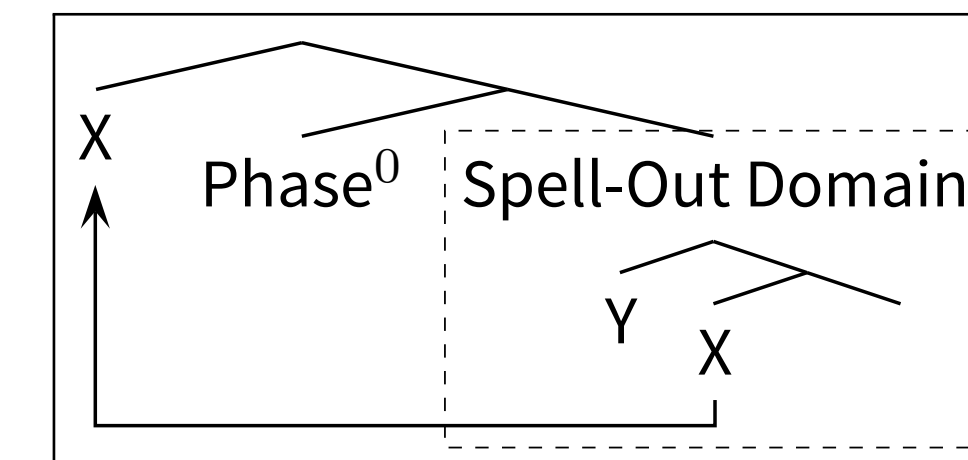
- Phrasal stress assignment operates on sub-parts of the syntactic derivation, defined by the syntactic cycle

- But not all syntactic movement preserves stress like (3)
 - It depends on whether movement operates within a Spell-Out Domain, or across them

Within Spell-Out Domain



Across Spell-Out Domains



- Only movement within a Spell-Out Domain influences what Phonology (and the NSR) take as input
 - ◇ (See also Legate 2003, Adger 2007, Ahn 2015a,b)

A proper generalization requires attention to syntactic derivation

- Data like (3) do not distinguish between the hypotheses in (1) and (2)

- Consider other cases when phrasal stress is not rightmost in a phrase

- Widely noticed: anaphoric pronouns / functional elements do not receive phrasal stress (Bresnan 1971, Zubizarreta 1998)

- (4) Why do you think Mary might have been involved in the burglary?
- a. They say they arrested her **húsband**.
- b. They say they **arrésted** her.
- (5) What did Wesley do next?
- a. He locked his bike to **Kén**.
- b. He locked his **bíke** to himself.
- (6) What's the matter?
- a. I can't zip up my **pánts**.
- b. I can't zip my **pánts** up.

- Only recently discovered: anaphoric pronouns / functional elements **may** receive phrasal stress, after manipulating syntactic variables

- If a pronoun occurs in a syntactic island, it may bear phrasal stress (Wagner 2006)

- (4) c. They say they arrested John or **hér**.

- Islandhood is especially important: **purely** syntactic

- If the antecedent of the reflexive anaphor is an object, it may bear phrasal stress (Ahn 2015a)

- (5) c. Wesley locked his bike to **itsélf**.

- If there is no object, a verb particle may bear phrasal stress (Ahn 2015b)

- (6) c. My pants won't zip **úp**.
- d. C'mon, pants! Zip **úp**!

- Linear order is not changing, but the position of phrasal stress is

⇒ **Phrasal stress is NOT 'rightmost with exceptions'**

Manipulating *syntactic* variables affects the position of phrasal stress

- Casts serious doubt on Hypothesis 1
- Hierarchical structure is changing (see Ahn 2015a,b for specifics), supporting Hypothesis 2
 - In particular, the structures differ with regard to what is most deeply embedded within the Spell-Out Domain
 - ◇ Anaphoric pronouns and reflexives may occupy a higher position than other nominals
 - ◇ Direct objects occupy a position lower than verb particles
- Regardless what the linear order seems to indicate**
 - ◇ (We know different structures can yield the same linear order for various reasons)

4. Conclusions

- Misguided: Claims that any NSR based on syntax would be inadequate**

- "Discussions of mismatches between syntax and prosody often stop short of even raising the question, the tacit assumption being that the syntactic analysis is obvious." – Wagner 2015:1171
- Any data that seem to be mismatches between syntax and phrasal stress instead represent a need to reanalyze the syntax**
 - (cf. Steedman 2000's analysis of intonational boundaries)

- Revisiting syntax with phrasal stress**

- Not supported by the data: Statements of the form 'For semantic / lexical reasons, X is an exception to the NSR'
- Premise 1: No true exceptions to NSR
- Premise 2: NSR takes hierarchical structure as its input
- Conclusion: **Phrasal stress can be used to decide between hypothetical syntactic structures**, like linear order is traditionally used
 - (Once we establish a formulation of the NSR)

- The NSR alone does not determine phrasal stress placement**

- The null hypothesis is that there are no exceptions to the NSR
- But other aspects of sentence-level phonology may readjust positions of phrasal stress (e.g., stress-clash avoidance)
- Complete models of phrasal stress need:
 - A hierarchically defined NSR
 - Additional sentence-level prosodic operations

Appendix: A Formulation of the Nuclear Stress Rule

- Below is a specific hypothesized formulation of the NSR
- (7) **Structure-Based Nuclear Stress Rule** (Ahn 2015b):
The most deeply embedded stressable constituent in a Spell-Out Domain receives the phrasal stress (regardless of formal syntactic/semantic/discourse features)
 - Assumption: any constituent containing at least one syllable is stressable
 - Ahn 2015b argues for syntactic structure being the input, but it may well be the prosodic structure
- Contra work like Kahnemuyipour 2009, Nuclear Stress (at least in English) **cannot be assigned to the highest element** in a Spell-Out Domain
 - English ditransitives: indirect object is lower in the structure than the direct object:

(8)

a.

Wesley locked [no bike [to anything]].

NPI licensing

b.

*Wesley locked [any bike [to nothing]].

(9)

a.

Wesley locked [[no bike]_I [to its_I owner]].

Pron.Binding

b.

*Wesley locked [[her_I bike] [to no owner]]_I.

(10)

a.

Wesley locked [[the bike]_I [to its_I owner]].

Condition C

b.

*Wesley locked [it_I [to [the bike]_I's owner]].
 - (See Bruening 2010 for more arguments)
 - NS in all these cases falls on the most embedded part of the PP

(11)

Wesley locked [Frank [to [Liz's [**chair**]]]].
 - This is why a reflexive indirect object in these contexts bears phrasal stress (as in (5c))
 - The reflexive must be c-commanded by (i.e. lower than) the binder, so it must be lowest
 - Other reflexives have the chance to (and do) occur in a higher position

Appendix: Linearization and Nuclear Stress are Divorced

- Movement of a constituent X across a constituent Y (as below) may or may not affect linearization (Bobaljik 1995, 2002, Fox 2002, Fox and Nissenbaum 1999, and Pesetsky 1998, among others)

X

Y

X

↑
- The linearization operation could attend to the higher copy of X** (resulting in the order ‘XY’), or **the lower copy** (resulting in the order ‘YX’)
- Already seen: movement of X may or may not affect Nuclear Stress placement
 - The NSR can attend to the higher copy of X** (when movement is within Spell-Out Domains), **or the lower copy** (when movement is across Spell-Out Domains)
- Linearization and Nuclear Stress are completely dissociated:

	Relevant for Linearization	
Relevant for NSR	High Copy	Low Copy
	German Object Shift (Cinque 1993)	Givenness Movement (Wagner 2006)
	Low Copy	WH-Movement (Bresnan 1971)
		QR (Fox and Nissenbaum 1999)

 - The cases where the low copy is relevant for NSR are cases of movement across Spell-Out Domains
 - WH-movement and QR are independently thought to proceed in this way
 - Consequence: German Object Shift and Givenness movement involve movement *within* the relevant Spell-Out Domain
 - See Ahn 2015a:§3.5.2 for more details and discussion

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