Cross-linguistic pronoun reduction patterns and what thə'tell'əs about English

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Take home messages:

- Function word reduction is phonological, not allomorphy.
  - English function word reduction is due to normal English phonology.
  - Normal English phonology is perhaps less 'normal' that you might think.
- Function word reduction informs us about how spell-out works, and about the syntactic size of pronominal XPs.

Outline:

In this talk I will present...

1. a mini preview of a survey of pronoun reduction patterns (in progress[a]),
2. an analysis, from work co-authored with Tobias Scheer (UCA), of English pronoun reduction that is strictly phonological,
   - Most of this is from our upcoming paper, but I have added a more detailed discussion of the morphology.
3. an implication that such an analysis has for cyclic computation (seeNewell (in press) for more on all of the open questions about how phases and spell-out work), and
4. a brief discussion of how this fits with the phonology of English in general, (Newell, 2021).

[a] This research is funded by SSHRC : *Pronouncing Pronouns : What pronominal variation tells us about the Human Language Faculty* (430-2023-00814).

Pronoun reduction patterns

Pronoun reduction : Segmental subsets

English pronouns

a.	I like **them**	[ðɛ́m]
b.	I like'**m**	[m̩]

Haitian Creole pronouns

a.	Jean remet **moi** liv la	[mwɛ́̃]
b.	Jean we**m**	[m]
	'J. gave me ...'/'J. saw me'	

Pite Saami pronouns

a.	jå, **månnå** aj mujhtav	[mɔ́nːɔ]
	'yes, I also remember...'	
b.	iv **mån** diede	[mɔn]
	'I don't know'	
	(Wilbur, 2014, 139, 124)	

Hebrew possessive pronouns

a.	**Shelahem**	[ʃelaém]
b.	Hasefer **shelahem**	[ʃlaem]
	'Theirs'/'Their book'	

BCMS pronouns

a.	**Njima** je dosadno	[njíma]
	'They are bored'	
b.	Mnogo **im** je pomogao	[im]
	'He helped them a lot'	

Bambara pronouns

a.	...**Nê** hámi dè	[nê]
	'my worry (foc)'	
b.	**Ń** mɔ̀deǹ-w	[ń̩]
	'my grandchild-art.pl'	
	(Vydrin, 2023, 302, 300)	

Reduction is not allomorphy

Disambiguating allomorphy

By allomorphy I always mean (1) and not (2):

1. Multiple underlying forms inserted in varying environments.
2. One underlying form, which may vary on the surface due to regular phonological computation.

Reduction is phonology

But how is [ðɛ́m] ~ [m̩] derived via the regular phonological computation of English?

Why, I'm so glad you asked.

(See Newell & Scheer (2025) for more details. Coming soon.)

A little history or function word reduction

Early 70s : Reduction is phonological

- Zwicky (1970) examines auxiliary reduction in English, deriving weak from strong forms in all cases.
- (Selkirk, 1972, 22ff) takes the same view: in all cases, weak items are derived from strong items.

Since the late 70s : (at least some) Reduction is allomorphy

- Later in the 1970s, Zwicky (1977) introduces a distinction between simple and special clitics: for the latter, he says, "it is unlikely that the weak forms are related to the strong ones by phonological rules of any generality" (p. 4).
- Thus Kaisse (1983) rejects a phonological analysis for function word reduction following the argument that the phonological rules needed to account for the loss of function-word-initial consonants would have to be specific to particular lexical items.
- Zwicky & Pullum (1983, 505 note 3) follow this position: "[i]n line [...] with Kaisse's analysis, we do not require that simple clitics derive synchronically from full forms by processes associated with casual or fast speech."

"We argue ... that this conclusion may be somewhat hasty."

All statements above from Newell & Scheer (to appear), also coming soon.

English pronoun reduction

Subsection outline

- Assumptions about morphosyntactic structure
- Assumptions about spell out
- Assumptions about the phonology

Internal structure of English pronouns

English pronouns are (generally) bi-morph-ic

I	We	You	
a i	w i	jɔ i	
He	She	It	They
hɪ i	ʃ i	ɪ t	ðɛ i

Table 1 : The underlying representations of Nominative Pronouns

N.B. that /i/ will emerge as a V-glide sequence in English = [ij](it will branch on a following C) when possible, as tense Vs do generally in English. Also, /ɔ/-/i/ → [u] (and will also glide where possible).

See also Cardinaletti & Starke (1999); Déchaine & Wiltschko (2002); Bernstein & Tortora (2005); Neeleman & Szendrői (2007); Ilić (2025), among many others on the internal, multimorphemic structure of pronouns.

Internal structure of English pronouns

English pronouns are (generally) bi-morph-ic

Me	Us	You	
m i	w s	jɔ i	
Him	**Her**	**It**	**Them**
hɪ m	hɪ ɹ	ɪ t	ðɛ m

Table 1 : The underlying representations of Accusative Pronouns

N.B. that w is shorthand for a labiovelar segment that is syllabified as a C before a V, and as a V before a C. It might be more accurate to transcribe it as ʌ.

Internal structure of English pronouns

English pronouns are (generally) bi-morph-ic

My	Our	Your	
m ai	w ɹ	jɔ ɹ	
His	**Her**	**Its**	**Their**
hɪ S	hɪ ɹ	ɪ t S	ðɛ ɹ

Table 1 : The underlying representations of Genitive Pronouns

The English pronominal morphemes

What do they project?

- Person/ϕ conditioned by case and number
- ?? conditioned by case, person, number
  - D(ef)? (Postal, 1969; Déchaine & Wiltschko, 2002); Case/Poss? (Bernstein & Tortora, 2005)

On the promiscuous allomorphy in functional domains:

- Ilić (2025) : Allomorphy is inward and outward in pronominal domains.
- Moskal (2015) : Pronominal domains are one domain for allomorphy.

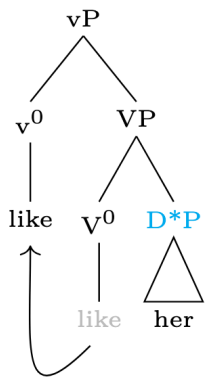
What is important for the analysis to come

- Pronouns, probably even clitics, are phrasal.
- The functional structure in the left periphery of weak pronouns and clitics is deficient (à la Cardinaletti & Starke (1999)).
- This distinction in syntactic size has effects on:
  - where pronouns move to in the clause.
  - whether pronouns contitute independent phases/cycles.

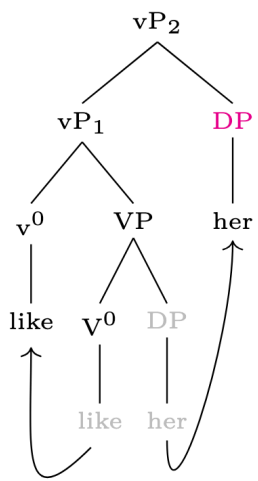
Assumptions about the morphosyntactic structure of pronouns

Syntactic positions of strong and weak pronouns in English : X*Ps and XPs

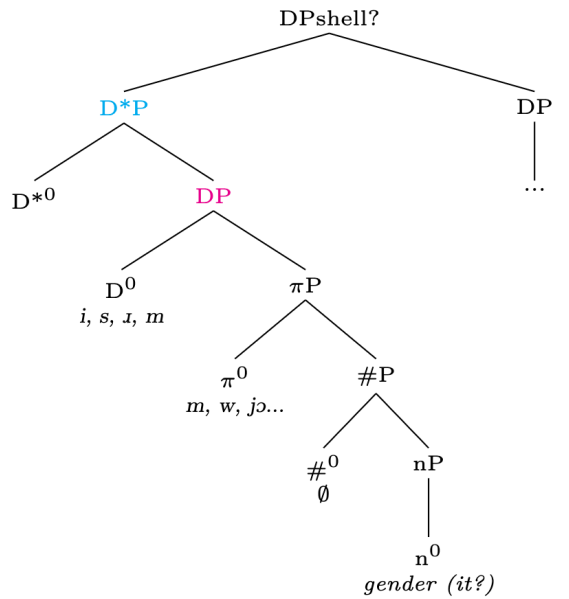
a. Strong



b. Weak



Internal structure of strong and weak pronouns in English : X*Ps and XPs



N.B. that π^0 could raise to D^0 or D^0 would lover to π^0. K(ase)P is not represented, but I assume it's there somewhere.

For various parts of the representations above: Holmberg (1986); Cardinaletti & Starke (1999); Harley & Noyer (1999); Wallenberg (2008); Selkirk (2014); Arregi & Hewett (2025); Ilić (2025).

The cyclic spell out of strong and weak pronouns

Strong pronouns

- Spell-out is triggered by a phase head within the D*P
  - A strong pronoun is spelled out in its own cycle
  - Cyclic spell out triggered by a phase head leads to the insertion of an empty syllable (CV) at the left edge of the spell out domain (Scheer, 2012). See also Scheer (2016) on how syllabic structure differs from melodic structure at the interface.

Weak pronouns

- Spell-out is not triggered by a phase head within the DP
  - A weak pronoun will undergo Apex spell out. Apex spell out is the interpretation of the top of any command chain. This is not triggered by a phase head and therefore does not trigger insertion of the empty CV.
  - If the weak pronoun is at the left edge of the next strong phase, it will have access to this later phasal CV, otherwise it will not.

For an overview of phases and spell-out domains and the many questions they evoke, see Newell (in press).

Some additional evidence that strong/weak functional domains are/are not phases

Moskal (2015) on dominance in harmony domains

Dominant prefixes are found on function words but not on lexical words, indicating that prefixes are not separated from their base by phase boundary in the case of function words. these function words include pronouns.

Bešlin (2021)

Strong, non-clitic pronouns in SC, unlike non-pronominal nominal arguments, do not allow either Left-Branch or Adjunct Extraction. This offers positive evidence for D*P as a potential structure for strong pronouns.

Notes on the URs of English pronouns

There is a lot of floating structure

- All pronouns (save genitive *its*) enter the phonological computation with a single CV syllable
  - This CV is part of the UR of the morphs in D^0 and not of those in π^0. We will see evidence for this below.
- Only final Cs are underlyingly linked to syllable structure (except /ɹ/).
- Segments that alternate with zero are lexically floating (as are some that do not).

A justification for underspecification (incl. floating)

- Patterns in surface forms are used by learners to construct URs
- Alternations → underspecification (e.g., V-Harmony, liaison)
  - N.B. that both allomorphy and underspecification involve memorizing something about a lexical item's UR. It is assumed here that allomorphy is a last-resort.

Beware of your Familiar Language Abstraction Bias (FLAB)

A linguist's degree of fluency in a language L is inversely proportional to the degree of abstractness that linguist will entertain for analyses of L.

Newell (under review)

The phonological URs of English pronouns

I	We	You	
C V	C V	C V	
a i	w i	jɔ i	
He	**She**	**It**	**They**
C V	C V	C V	C V
hɪ i	ʃ i	ɪ t	ðɛ i

Table 1 : The underlying representations of Nominative Pronouns

The phonological URs of English pronouns

Me	Us	You	
C V m i	C V | w s	C V jɔ i	
Him	**Her**	**It**	**Them**
C V | hɪ m	C V hɪ ɹ	C V | ɪ t	C V | ðɛ m

Table 1 : The underlying representations of Accusative Pronouns

The phonological URs of English pronouns

English pronouns are (minimally) bimorphemic

My	Our	Your	
C V	C V	C V	
m ai	w ɹ	jɔ ɹ	
His	**Her**	**Its**	**Their**
C V | hɪ S	C V hɪ ɹ	C V C V | | ɪ t S	C V ðɛ ɹ

Table 1 : The underlying representations of Genitive Pronouns

Stress as syllabic space. English /h/ is a geminate.

English Stress and Aspiration

	Followed by stress		Elsewhere	
a.	əˈtʰɑmɪk	‘atomic’	ˈærəm	‘atom’
	pʰɑləˈtʰɪʃən	‘politician’	ˈpʰɑlətɪks	‘politics’
b.	vəˈhɪkjəlɹ̩	‘vehicular’	ˈvijəkl̩	‘vehicle’
	pɹəˈhɪbɪt	‘prohibit’	pɹowəˈbɪʃn̩	‘prohibition’

[ˈvijəkl̩]

[vəˈhɪkjələɹ]

See Ségéral & Scheer (2008) for English, Larsen (1998); Chierchia (1982); Farnetani & Kori (1986) for Italian.

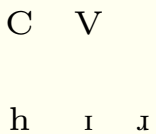
The derivation of English Strong pronouns

He loves her : [$_{C*P}$ [$_{D*P}$ he] [$_{vP}$ [$_{D*P}$ he] loves [$_{D*P}$ her]]]

Here we have four phases. The first phase is the D*P object of the verb, *her*.

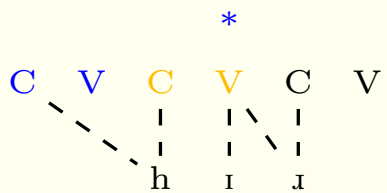
Spell out of D*P [həɹ]: insertion of phase CV and stress CV

a. UR



b. insert phasal CV, linking of segments

c. insert stress, stress CV, linking of segments



N.B. that /ɪ-ɹ/ → [əɹ], [ɻ] (the vowel is rhotacized).

- The English stress algorithm is only triggered when a form has at least one linked vocalic segment and the syllabic tier meets word minimality (CVCV).
- Association of floating segments applies from left to right.
- Gemination of /h/, spreading to the left, occurs after left to right spreading.

The derivation of English Strong pronouns

Spell out of [[lʌvz] [həɹ]]

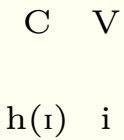
loves notes

- In CVCV phonology, empty VC-sequences are elided (Gussmann & Kaye, 1993).
- FEN = Final Empty Nucleus. Final empty nuclei are the CVCV tool to account for the fact that final codas are onsets (e.g., Scheer (2004) witin CVCV, and Côté (2011) for a pan-framework overview)
- FENs are final in a domain. English verbs are computed in two phases (hence the two FENs. The /z/ is lowering from T^0. See Newell (under review, 2025).

The derivation of English Strong pronouns

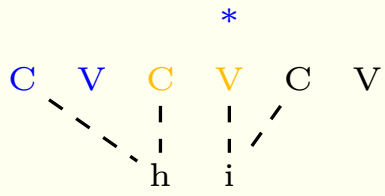
Spell out of D*P [hij]: insertion of the phasal CV and the stress CV

a. UR



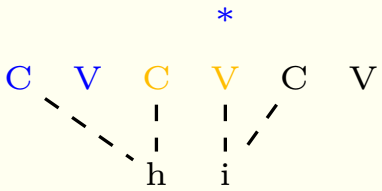
b. insert phasal CV, linking of segments

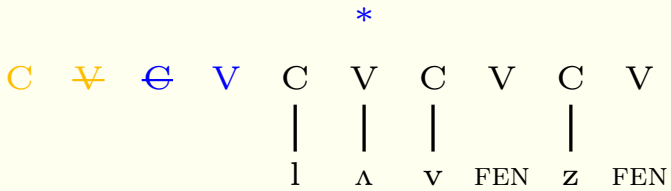
c. insert stress, stress CV, linking of segments

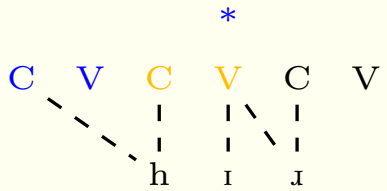


N.B. that /ɪ-i/ → /i/.

Final string : [hij lʌvz həɹ]



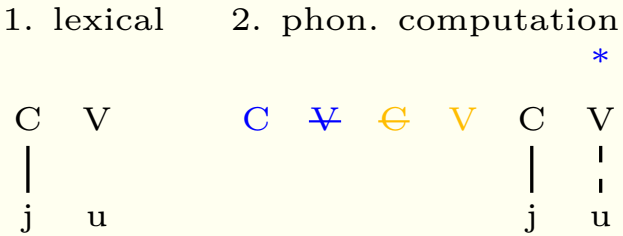




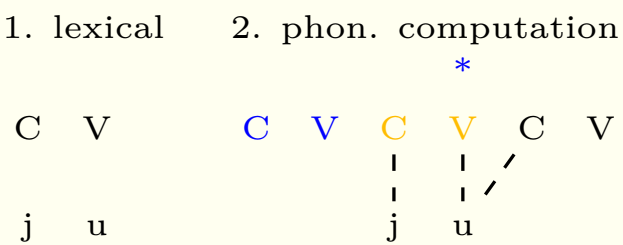
you: evidence for the lexically-floating status of /j/

- There is phonological evidence that the initial Cs are not underlyingly linked.
- This is consistent with the proposal that exponents of π are not lexicalized with syllabic structure: you cannot be underlyingly linked to a syllable that belongs to another morph.

/j/ lexically associated: *[jə]



/j/ lexically floating: [juw]

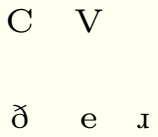


Recall that jɔ-i → ju.

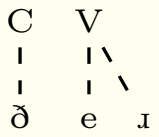
their and floating r : r-linking to V

their: UR and reduced forms

UR

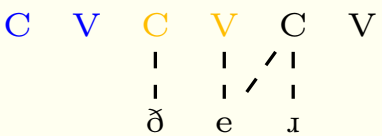


Reduced form: [ðəɹ/ðɻ]

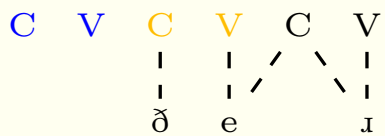


Full forms:

['ðeɹ]/['ðɛɹ]



['ðejəɹ]/['ðejɻ]



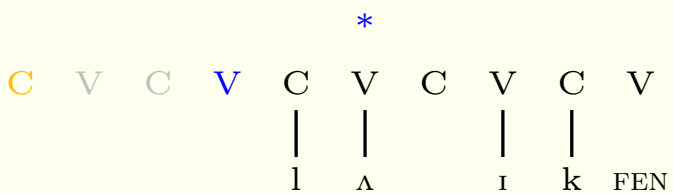
N.B. that this applies for all r-final pronouns.

The derivation of English Weak pronouns

They like them : [$_{CP}$ [$_{DP}$ They] [$_{vP2}$ [$_{vP1}$ [$_{DP}$ They] like [$_{DP}$ them]][$_{DP}$ them]]]

Here we have one phase, and three Apex spell outs (DP, DP, CP). The first phase sent to spell-out is the verb, as the weak DP object has undergone movement to adjoin to vP.

Spell out of [lʌɪk]

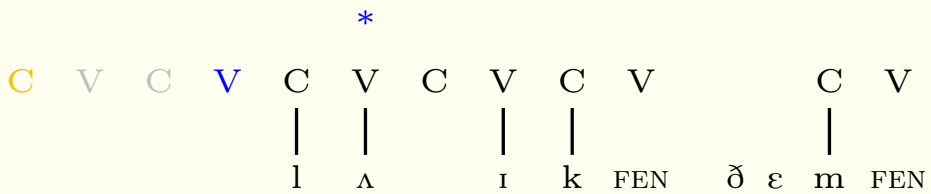


- The verb must spell out independently from the pronoun, as the pronoun never impacts the placement of stress.
- This entails that the pronoun does not undergo head movement into the domain of the verb (cf. Selkirk (2014)). See Newell (2021) for arguments that affixes spelled out in the same cycle as the root are always within its phonological domain.

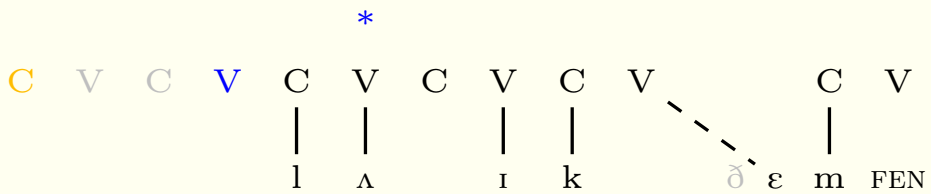
The derivation of English Weak pronouns

Spell out of [lʌɪk] [əm]/[m̩]

- After VI and phonology in the DP (Apex spell out), and vP2 linearization



- Subsequent vP2 phonological computation

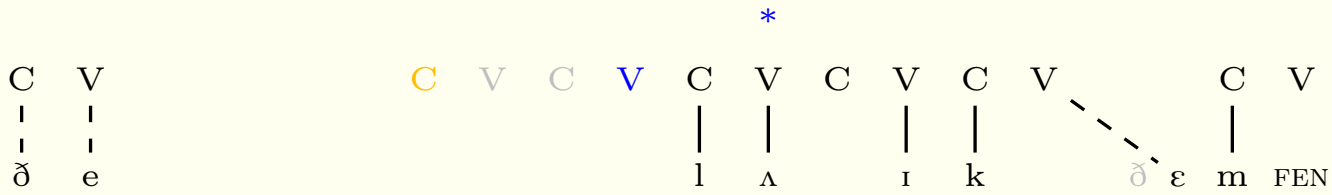


N.B. Apex spell out does no obvious work for us here, but it will in another derivation of 'I' in 'Am I here?', below.
Note also that short Vs will undergo regular reduction to ə.

The derivation of English Weak pronouns

Spell out of [ðə] [lʌɪk] [əm]/[m̩]

- After VI and phonology in the DP (Apex spell out), and CP linearization



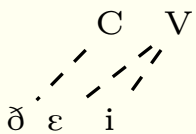
N.B. that /ðɛ-i/ → /ðe/

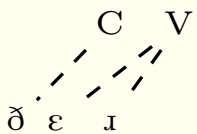
- Optional rightward spreading of the vowel onto C gives the more variable pronunciation of weak Nominative pronouns (e.g., [ðej] even when *they* is weak.

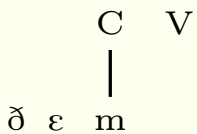
N.B. That the possibility of a C*P phase also leads to more variation in weak Nominative pronoun pronunciation. For more on that, and on the same patterns in weak Genitive pronouns see Newell & Scheer (2025); Newell & Puel (2025).

They, *Their* and *Them* have the same ð

The UR of the case morpheme determines whether the ð will be variably pronounced







- The vowels coalesce in *they*, resulting in there always being a C-position for /ð/ to link to in the NOM.
- The semi-vocalic nature of /ɹ/ in English means that a V-/ɹ/ sequence will both be able to occupy the V position in the GEN when it is weak.
- The linked /*m*/ in the ACC results in the /ð/ only being pronounced when an additional C-position is provided by the computation.
- The UR vowels in *the* [ðə]/[ðij], *these* [ðijz], *those* [ðowz], etc. results in *them*, predictably, being the only alternating [ð] form: the DEF morpheme has a single UR.

Two kinds of spell out domain

Phases vs Apex spell-out

The Apex problem

- Grohmann et al. (2017) discuss what they call the *Apex paradox*:
  - The top 'edge' of a syntactic object will never be spelled out by a phase head.
  - The top 'edge' of a syntactic object must nonetheless be spelled out.
- This pattern was also discussed in Uriagereka (1999), but not in relation to phases, per se.
  - Each command chain must spell out before merger to a larger object, for reasons of linearization.
- And this apex spell out is also assumed in (Moskal, 2015, 62):
  - "Indeed, let us assume, in addition to category-defining nodes, that the highest node of an extended projection (Grimshaw 2005) also functions as a cyclic node (see also den Dikken 2007, Wurmbrand 2012, Bošković 2014)."

Apex spell out

- The top nodes of each syntactic object/command chain will be sent to spell out independently.
- **Additional proposal:** This automatic spell out, as opposed to phasal spell out, does not mark its left edge with empty syllabic space.

‘*Am I*’ spelled out with aux? Weak pronouns and apex spell out

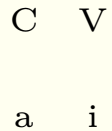
[$_{CP}$ am [$_{DP}$ I] [$_{TP}$ am [$_{vP}$ late]]] “Am I late?”

Apex spell out : Spell out of non-phasal DP before CP

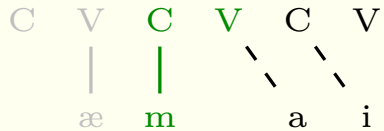
- If the pronoun is spelled out in the same cycle as the auxiliary the floating vowel will attach to the final empty nucleus of the preceding word and will be able to spread into its lexical V. If this were the correct derivation, we would not be able to realize the reduced form of the pronoun in this sentence, counter to fact: ([mʌlejt]).
- This apex spell out constitutes phonological evidence for the phrasal structure of weak pronouns : two heads in the same spell out domain would spell out together.

Apex spell out of ‘I’

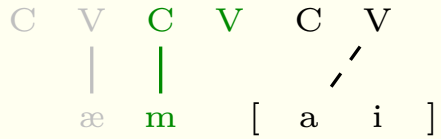
a. UR



b. Without Apex spell-out *[aj]



c. With Apex spell-out [ʌ/ə]



N.B. this is applicable to all V-initial pronouns : ‘I’ and ‘our’ (‘us’ will not emerge in an appropriate position in Standard Canadian English). And note that spreading to the following word allows for [majlet] ‘Am I late?’, but withour Apex spell out we cannot account for the fully reduced [mʌlet].

A note on 'regular' phonology

How does the derivation of pronoun reduction we just saw fit with the rest of the phonology of English?

Remember the FLAB

- Do we have other arguments for floating segments in English? Yes. Floating (liaison) 'Level 1' affix vowels derive 'Level 1' effects where cyclic spell out alone does not (Newell, 2021).
- /h/-gemination is not strange. For example, Amharic consonants also geminate in the presence of stress. (Newell & Ulfsbjorninn, 2023)

What about this all just being allomorphy?

- Recent work on English pronouns proposes that their alternation is allomorphic (Tyler, 2019).
  - The proposal is that full forms have no subcategorization frame : /them/
  - And that weak forms subcategorize to adjoin to a PWd: $[_{PWd}[_{PWd}$ ___]them]
- This type of analysis is problematic for multiple reasons, among them:
  - It does not explain the variable pronunciation of the consonants.
  - It can only hold if pronouns are single VIs, as a subcategorization frame cannot be part of the UR of a series of morphemes.

Conclusions

Pronoun reduction is phonological

- There is a clear cross-linguistic pattern of segmental sets-subsets that is a predictable outcome of:
  - weak phonological domains,
  - phonological underspecification,
  - and the regular phonological computation.
- Weak phonological domains correspond with syntactic distinctions
  - Sub-phasal domains are treated differently by the spell out algorithm / interface,
  - even when they need to undergo independent Apex spell out.
  - Weak pronouns need to appeal to Apex spell out, as they are non-phasal phrases.

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