# Initial consonant mutation patterns as evidence for domain structure in Irish

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## Initial consonant mutation (ICM)

Initial consonant mutation is the systematic **phonological alternation** of word-initial consonants, depending on **morphosyntactic context**

(1) a. ***b**róg* 'shoe' (initial [b])
b. *an **bh**róg* 'the **L**.shoe' (initial [v]; "**L**enition")
c. *ar an **mb**róg* 'on the **E**.shoe' (initial [m]; "**E**clipsis")

### Analysis: floating phonological material

- Floating mutation-inducing material introduced in morphosyntactically defined environments ({L}/{E}) (Lieber 1983; Iosad 2014; Breit 2019; Laoide-Kemp 2023)
- Latches onto an adjacent target consonant to produce the mutated output form

(2) a. *an*-{L} [b]*róg* ⟶ *an* [v]*róg*
b. *ar an*-{E} [b]*róg* ⟶ *ar an* [m]*róg*

## Coronal blocking of mutation (CB)

ICM is sometimes blocked **when two coronal consonants come together** at a word/morpheme boundary

(3) a. *an **t**eanga* 'the language' (**an **th**eanga*)
b. *aon **d**ath* 'any colour' (**aon **dh**ath*)
c. *fad-**t**éarmach* 'long-term' (**fad-**th**éarmach*)

### Analysis: "coronal fusion"

- Adjacent coronals must share their [+Cor] feature (Ní Chiosáin 1991)
- Renders target consonant inaccessible as a host for mutation-inducing material

*a*[n] {L} ⟶ [t]*eanga*
[+Cor]

## The puzzle: domain of ICM ≠ domain of CB

ICM is active both between words (4) and within words (5)...

(4) a. *an **bh**róg* 'the **L**.shoe' (after F.DEF article)
b. *bróg **dh**earg* '**L**.red shoe' (F adjective agreement)
c. *bád **Ch**aoimhín* '**L**.Caoimhín's boat' (DEF possessor)

(5) a. *an-**mh**aith* 'very-**L**.good'
b. *mion-**ph**íosaí* 'small-**L**.pieces' (lenition after derivational prefixes)

...but CB is only found in a subset of these environments (6a)/(7a):

(6) a. *an **t**raein* 'the train' (**an **th**raein*) (CB)
b. *traein **dh**earg* '**L**.red train' (**traein **d**earg*) (no CB)
c. *bád **Sh**eáin* '**L**.Seán's boat' (**bád **S**eáin*) (no CB)

(7) a. *an-**d**ona* 'very-bad' (**an-**dh**ona*) (CB)
b. *mion-**th**orthaí* 'micro-**L**.products' (no CB)

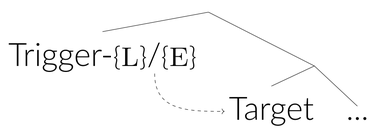
**Q: What differentiates the environments where CB does and does not apply?**

## Interaction with morphological word boundaries

First consider the "between words" examples (6)

**Two possible sources of mutation-inducing material:**

1. Mutation-inducing material inserted alongside a "trigger word"

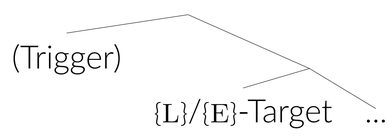



- Mutation-inducing material and preceding coronal are **both to the left of the morphological word boundary**

(8) a. *an*-{L} [$_{word}$ ***t**raein* ⟶ *an **t**raein*
b. *aon*-{L} [$_{word}$ ***d**ath* ⟶ *aon **d**ath*

- **Result:** coronal blocking of mutation

2. Mutation-inducing material inserted as a prefix on the target word




- Mutation-inducing material and preceding coronal are **separated by a morphological word boundary**

(9) a. *traein* [$_{word}$ {L}-***d**earg* ⟶ *traein **dh**earg*
b. *bád* [$_{word}$ {L}-***S**eáin* ⟶ *bád **Sh**eáin*

- **Result:** mutation is not blocked by a preceding coronal
- **Evidence for prefixation** from cases where "trigger" and target are non-adjacent:

(10) a. *traein **dh**earg **mh**ór* 'a **L**.big **L**.red train'
b. *bád mór **Sh**eáin* '**L**.Seán's big boat'
c. *bád **Sh**eáin nó **Mh**áire* '**L**.Seán's or **L**.Máire's boat' (Christian Brothers 1960)

### Generalisation

- Coronal blocking occurs whenever the **mutation-inducing material** and the **preceding coronal** are in the at the same side of a morphological word boundary

### Possible analysis

- Spell-out proceeds **cyclically in chunks**, starting with the most embedded domain
- Morphological word constitutes a **distinct spell-out domain**
- In (9), mutation takes place within this more embedded domain, **before the preceding coronal is spelt out** ⇒ remains unaffected by coronal blocking

## Interaction with prosodic domain boundaries

Now consider the examples of mutation within derived words (7)

- Discussion based on the Iorras Aithneach dialect of Irish (Ó Curnáin 2007)
- Focus on words formed via **derivational/compound-forming prefixes**

**Two classes of derivational prefix:**

1. Prefix and base take equal (primary) stress
   - Suggests prefix and base form **two distinct prosodic words**
   - Typically associated with **coronal blocking** of mutation

(11) a. $_{\varphi}$( $_{\omega}$(a**n**-{L}) $_{\omega}$(**d**ona) ) ⟶ ˈ*an*-ˈ*dona*
b. $_{\varphi}$( $_{\omega}$(fa**d**-{L}) $_{\omega}$(**t**éarmach) ) ⟶ ˈ*fad*-ˈ*téarmach*

2. Prefix takes predominantly primary stress, with secondary stress on the base
   - Suggests prefix and base belong to a **single prosodic word**
   - Typically **no coronal blocking** of mutation

(12) $_{\omega}$( $_{\omega}$(*mion-{L}* ) $_{\omega}$(**t**orthaí) ) ⟶ ˈ*mion*-ˌ***th**orthaí*

### An unexpected result

- Example (11) is consistent with the previous generalisation, but (12) is surprising
- Looks like coronal fusion is only active **across a maximal prosodic word boundary**
- More **"tightly bound"** structure ⇒ **less interference** from a preceding coronal?

## Key Takeaways

- Domain of initial consonant mutation ≠ domain of coronal blocking of mutation
- Coronal blocking patterns are a **reflection of domain structure** in Irish
- Preceding coronal must be **"close enough"** to interfere with mutation (cf. (8)/(9)), but **not "too close"** (cf. (11)/(12)).

## References

Breit, F. (2019). *Welsh mutation and strict modularity* (Doctoral dissertation). University College London.
Christian Brothers. (1960). *Graiméar Gaeilge na mBráithre Críostaí*. Baile Átha Cliath: MH Mac an Ghoill agus a Mhac.
Iosad, P. (2014). The phonology and morphosyntax of Breton mutation. *Lingue e linguaggio*, *13*(1), 23-42.
Laoide-Kemp, A. (2023). Irish initial consonant mutation: disentangling phonology from morphosyntax. In M. Jaurena & Z. Metzler (Eds.), *Proceedings of the Thirty-Fifth Western Conference on Linguistics* (Vol. 29, p. 58-68). California State University, Fresno.
Lieber, R. (1983). New developments in autosegmental morphology: consonant mutation. In *Proceedings of the West Coast Conference on Formal Linguistics* (Vol. 2, p. 165-175).
Ní Chiosáin, M. (1991). *Topics in the phonology of Irish* (Doctoral dissertation). University of Massachusetts, Amherst.
Ó Curnáin, B. (2007). *The Irish of Iorras Aithneach, County Galway; volumes I-IV*. Dublin: DIAS.