

Irish initial consonant mutation: Disentangling phonology from morphosyntax

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What is initial consonant mutation?

Initial consonant mutation (ICM)

Systematic **phonological alternation** of word-initial consonants, depending on **morphosyntactic context**

Examples

- *bróg* 'shoe' (initial consonant is /b/) → **Radical**
- *an bhróg* 'the shoe' (initial consonant is /v/) → **Lenited**
- *ar an mbróg* 'on the shoe' (initial consonant is /m/) → **Eclipsed**

Why are they interesting?

- Ideal testing ground for two broad theoretical approaches:
 - **Globalism**
 - **Modularity**

Strict modularity (Breit, 2019)

(Morpho)syntactic computation makes no reference to phonology, and phonological computation makes no reference to (morpho)syntax.

Begin with a hypothesis of **strict modularity**...

Primary research question

Is the Irish ICM data consistent with this hypothesis?

Overall aim:

- Develop a strictly modular theory of mutation,
OR
- Demonstrate conclusively that this cannot be done

General approach

- ① Identify most theoretically challenging aspects of Irish ICM.
- ② Investigate whether the phonological and morphosyntactic elements can be disentangled.
- ③ If possible, develop a modular theory of ICM.

So far...

Initial analysis suggests that Irish ICM is **not necessarily incompatible** with strict modularity.

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The Irish data – phonological alternations

Radical form		Lenited form		Eclipsed form	
/p/	⟨p⟩	/f/	⟨ph⟩	/b/	⟨bp⟩
/t/	⟨t⟩	/h/	⟨th⟩	/d/	⟨dt⟩
/k/	⟨c⟩	/x/	⟨ch⟩	/g/	⟨gc⟩
/b/	⟨b⟩	/v/	⟨bh⟩	/m/	⟨mb⟩
/d/	⟨d⟩	/ɣ/	⟨dh⟩	/n/	⟨nd⟩
/g/	⟨g⟩	/ɣ/	⟨gh⟩	/ŋ/	⟨ng⟩
/f/	⟨f⟩	∅	⟨fh⟩	/v/	⟨bhf⟩
/s/	⟨s⟩	/h/	⟨sh⟩		–
/m/	⟨m⟩	/v/	⟨mh⟩		–
/n/	⟨n⟩		–		–
/l/	⟨l⟩		–		–
/r/	⟨r⟩		–		–

Table: Phonological alternations for ICM in Irish (adapted from Green(2006));

Note: in this table, "–" = no change

The Irish data – morphosyntactic context

There is an enormous range of contexts that trigger ICM in Irish – below is just a sample:

- In a feminine noun, after the definite article *an*: *an bhróg* ‘the shoe’
- Following certain prepositions: *roimh mhaidin* ‘before morning’
- In any definite possessor: *muintir Sheáin* ‘Seán’s family’
- After possessive pronouns: *ár gcat* ‘our cat’
- In compounds, following certain prefixes: *an-mhaith* ‘very good’
- In past tense verbs: *mholamar* ‘we praised’
- After certain verbal particles: *nach gcreidim* ‘that I don’t believe’
- In an attributive noun/adjective that modifies a plural noun ending in a palatalised consonant: *buidéil bhainne* ‘bottles of milk’

- **Phonology of mutations:** Ó Dochartaigh (1979); Ní Chíosáin (1991); Swingle (1993); Gnanadesikan (1997)
- **Triggering environments/process:** Duffield (1995); Stewart (2004); Green (2006); Hannahs (2013)
- **Full model:** Pyatt (1997); Breit (2019) on Welsh ICM

Challenges for strict modularity

Challenge 1: Palatalised consonants as triggers?

- Lenition of attributive adjectives and nouns after a plural noun ending in a palatalised consonant
- e.g. *buidéil bhainne* 'bottles of milk' vs. *gloiní bainne* 'glasses of milk'

Challenge 2: Coronal blocking of mutation

- Blocking of mutation when two coronals come together at word boundary
- e.g. *an teanga*, **an theanga* 'the language'

Q: Can these facts be accounted for without violating strict modularity?

Challenge 1: Palatalised consonants as triggers?

- Lenition of attributive adjectives and nouns after a plural noun ending in a palatalised consonant
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Q: Can this triggering environment be explained without reference to phonology?

Evidence against “phonological triggering”:

- Mutation triggered by a set of words ending in schwa in some dialects
- Mutation triggered by English plural borrowings that are not palatalised, e.g. *teorams mhaith* ‘good terms’
- No other mutation environment makes direct reference to phonology

Proposal

Lenition is triggered not by plural nouns ending in palatalised consonants, but by nouns that belong to a particular plural class.

- e.g. Carnie’s plural class “W1” (Carnie, 2008)

Challenge 2: Coronal blocking of mutation

- Blocking of mutation when two coronals come together at word boundary
- e.g. *an teanga*, **an theanga* ‘the language’

Q: Is CB an example of the mutation triggering mechanism being influenced by phonological factors?

- Evidence from epenthesis (Ní Chíosáin, 1991)
- *an + dona* → *an-dona* **OR** *an[ə]dhona* ‘very bad’
- *sean + duine* → *seanduine* **OR** *sean[ə]dhuine* ‘old person’

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One possibility...

ICMs are **affixes** containing **floating phonological features** which latch onto the initial consonant of a word

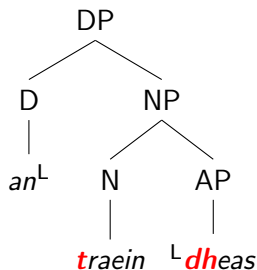
Division of labour:

- **Morphosyntax** triggers the appearance of the affix
- **Phonology** determines the output mutated consonant

Emerging evidence for two distinct mechanisms for triggering mutation:

- **Local type**, fundamentally associated with trigger word
- **Agreement type**, fundamentally associated with the target word

Figure: Illustrative example – *an traein dheas* ‘the nice train’



Radical	<i>p</i>	<i>t</i>	<i>k</i>	<i>b</i>	<i>d</i>	<i>g</i>	<i>f</i>	<i>s</i>	<i>m</i>	<i>n</i>	<i>l</i>	<i>r</i>
Lenited	<i>f</i>	<i>h</i>	<i>x</i>	<i>v</i>	<i>ɣ</i>	<i>ɣ</i>	\emptyset	<i>h</i>	<i>v</i>	-	-	-
Eclipsed	<i>b</i>	<i>d</i>	<i>g</i>	<i>m</i>	<i>n</i>	<i>ŋ</i>	<i>v</i>	-	-	-	-	-

Mutation affixes (first approximation)

Lenition : $L = \{ [+cont, -cor]; \emptyset \}$

Eclipsis : $E = \{ [+voi]; [+nas] \}$

- Irish ICM is **not necessarily incompatible** with a strictly modular grammatical system
- **Affixation of floating features** shows promise as a fully modular model of ICM

Go raibh míle maith agaibh! – Thank you!

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