A strictly modular account of Irish initial consonant mutation

Anna Laoide-Kemp

anna.laoide-kemp@ed.ac.uk

School of Philosophy, Psychology and Language Sciences (PPLS)
University of Edinburgh

Pre-viva talk

17th March 2026

Theoretical linguistics: modelling language intuitions

In English...	In Irish...
Aisling drank milk	**Aisling d'ól bainne*
**drank Aisling milk*	*d'ól Aisling bainne*

Syntax

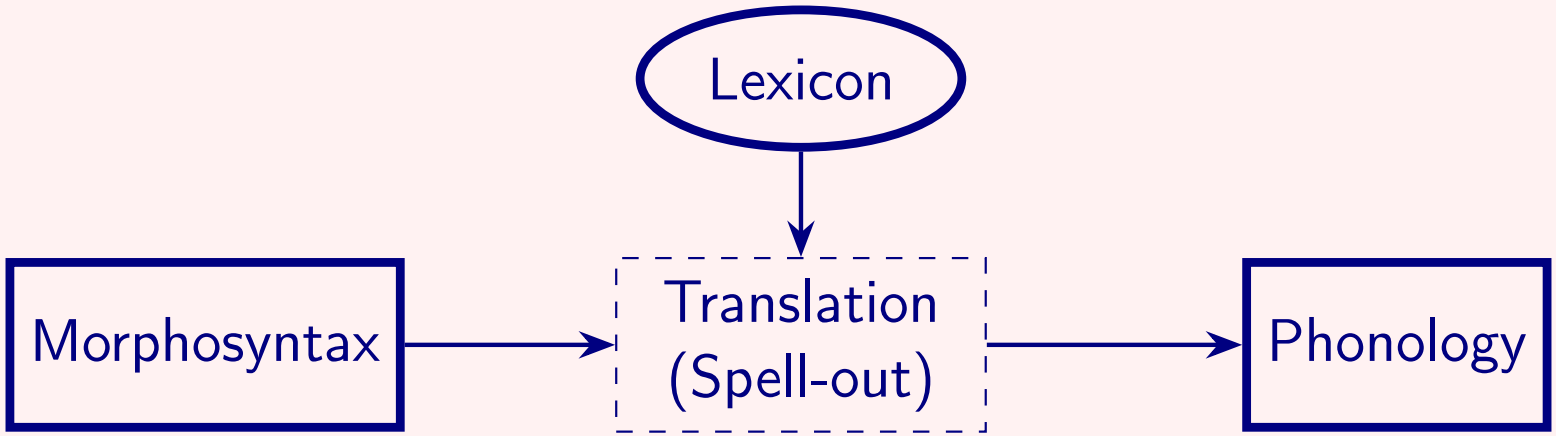
In English...			In Irish...	
snag	*smag*	**cnag*	*cnag*	'knock'
glee	*clee*	**dlee*	*dlí*	'law'
blast	*blats*	**lbast*	**lbast*	

Phonology

Modularity in linguistics

- **Modularity:** human language faculty is formed from a set of distinct subsystems (Fodor 1983; Scheer 2010)
  - Phonetics, phonology, morphology, syntax, semantics, ...

- **Strictest interpretation:** morphosyntax is blind to phonology and phonology is blind to morphosyntax



Celtic initial consonant mutation: a challenge for modularity

Dùn Èideann

THE UNIVERSITY OF EDINBURGH

OILTHIGH DHÙN ÈIDEANN

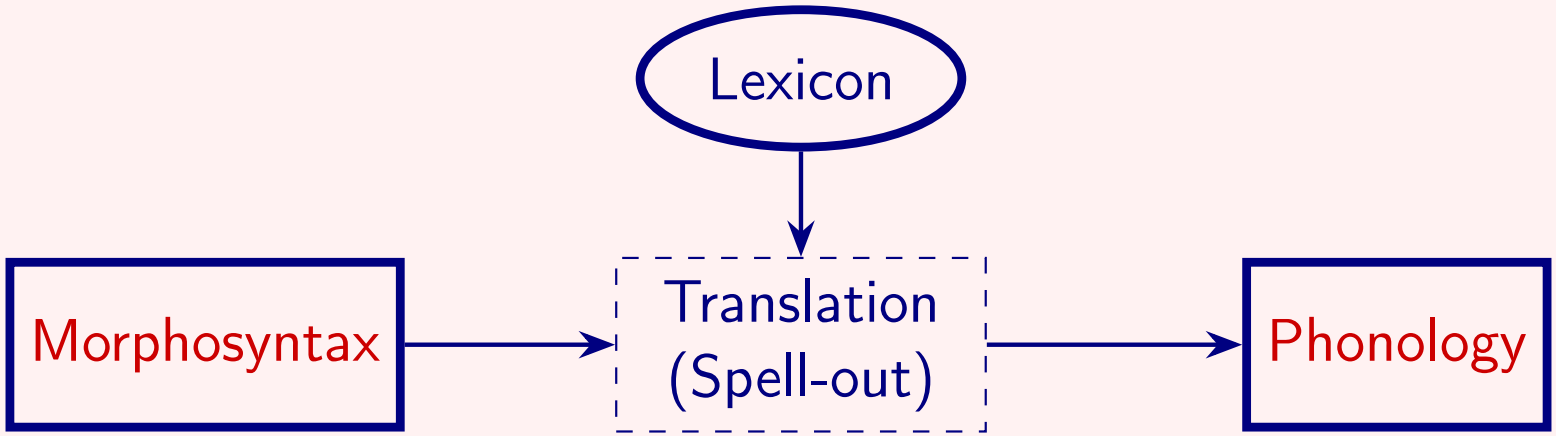
Celtic initial consonant mutation: a challenge for modularity

Celtic initial consonant mutation: a challenge for modularity

(1)	a.	*bróg*	shoe	(initial [b])
	b.	*an **bh**róg*	the **L**.shoe	(initial [v]; "Lenition")
	c.	*ár **mb**róg*	our **E**.shoe	(initial [m] "Eclipsis")

Initial consonant mutation (ICM)

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



Goals of my thesis

Goal 1

To demonstrate that Irish initial consonant mutation is **fully compatible with a strictly modular model** of language structure

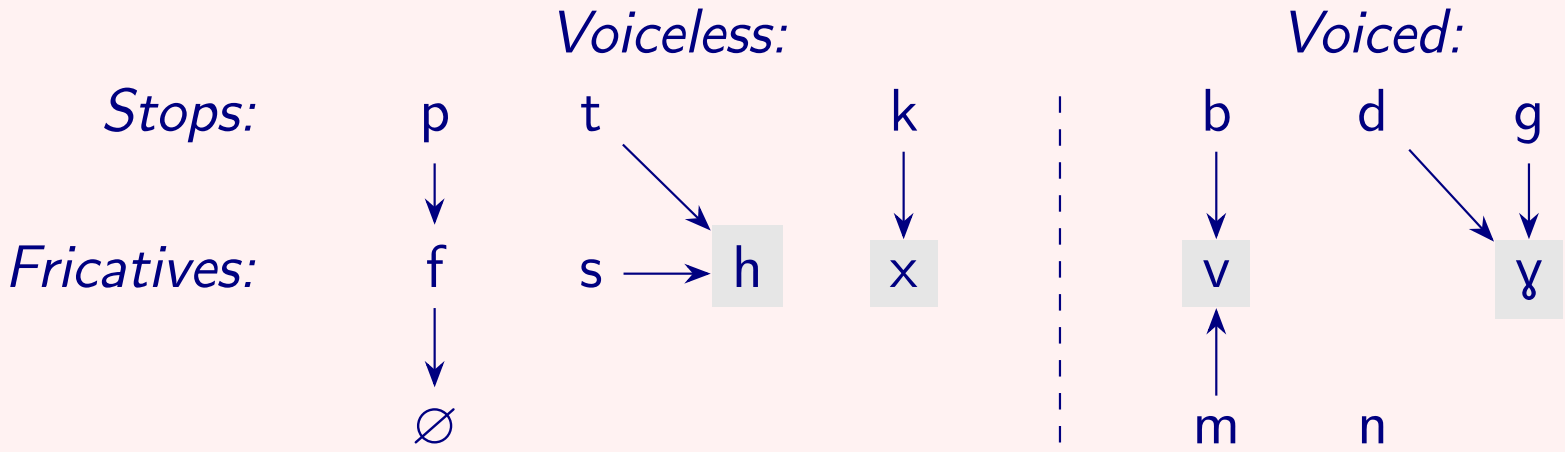
Goal 2

To make the case for a **research methodology that commits to strict modularity** from the outset

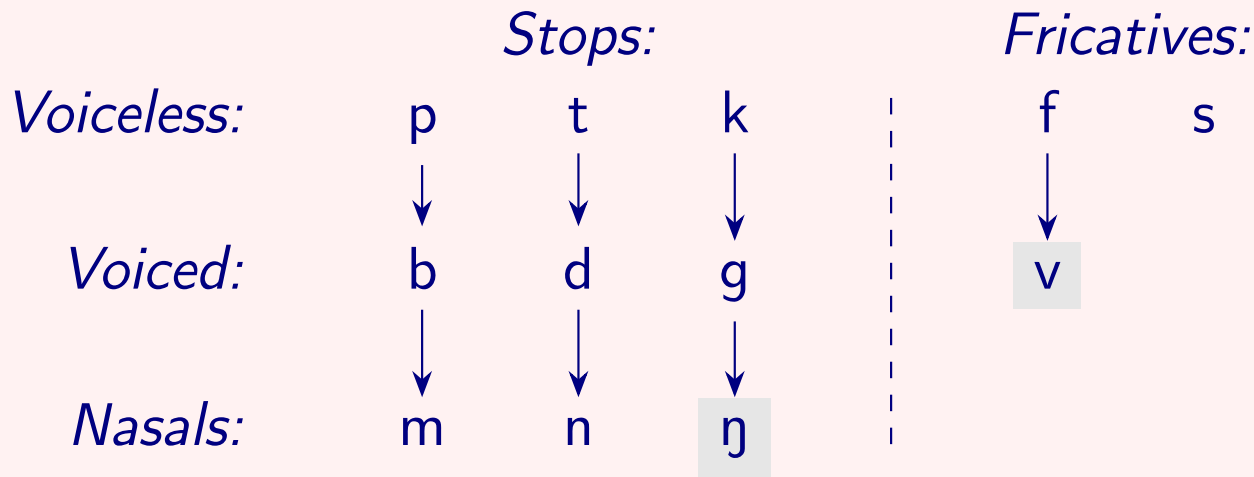
Table of Contents

Irish ICM: sound changes

Lenition:



Eclipsis:



Irish ICM: mutation contexts

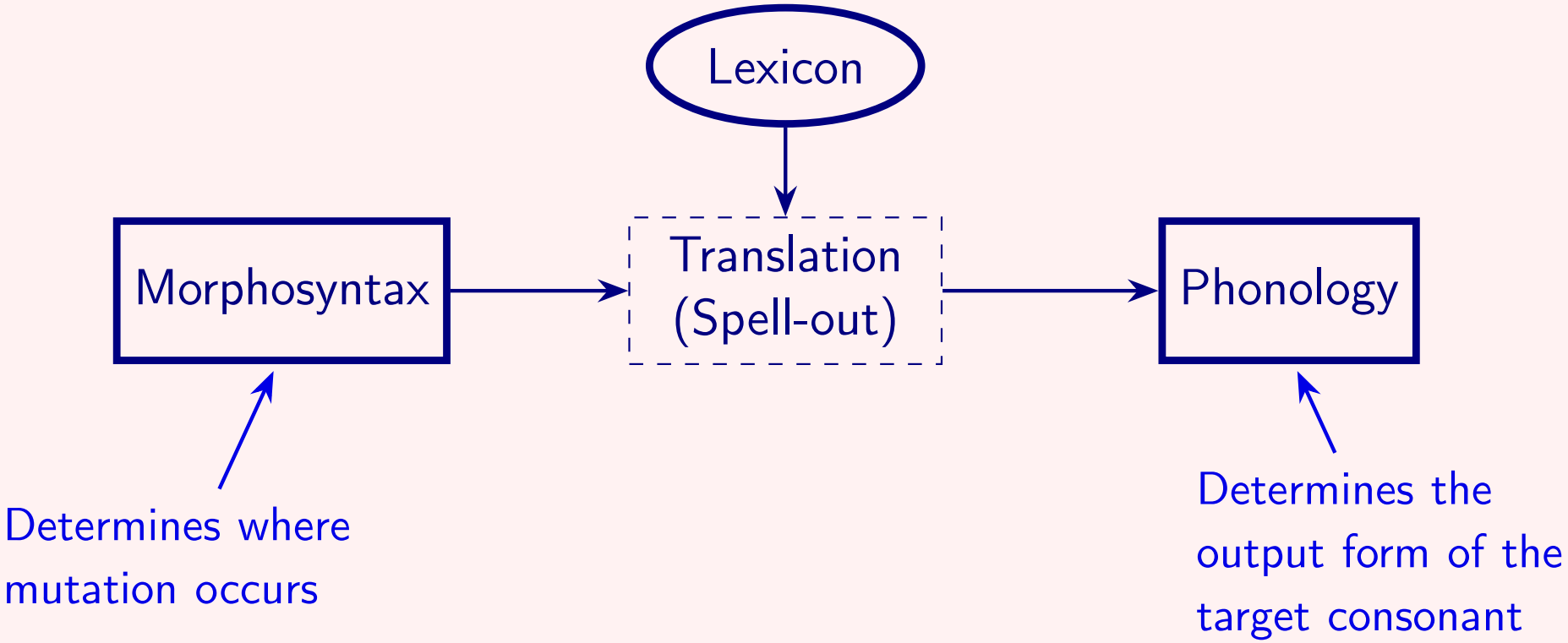
Mutation following so-called "trigger words"

- Prepositions:
  - *gan* ***ch****óta* 'without a **L**.coat'
  - *i* ***ng****rá* 'in **E**.love'
- Preverbal particles:
  - *ní* ***sh****iúlaim* 'I do not **L**.walk'
  - *an* ***mb****uailfimid* 'will we **E**.meet?'

Mutation linked to morphosyntactic features on the target word

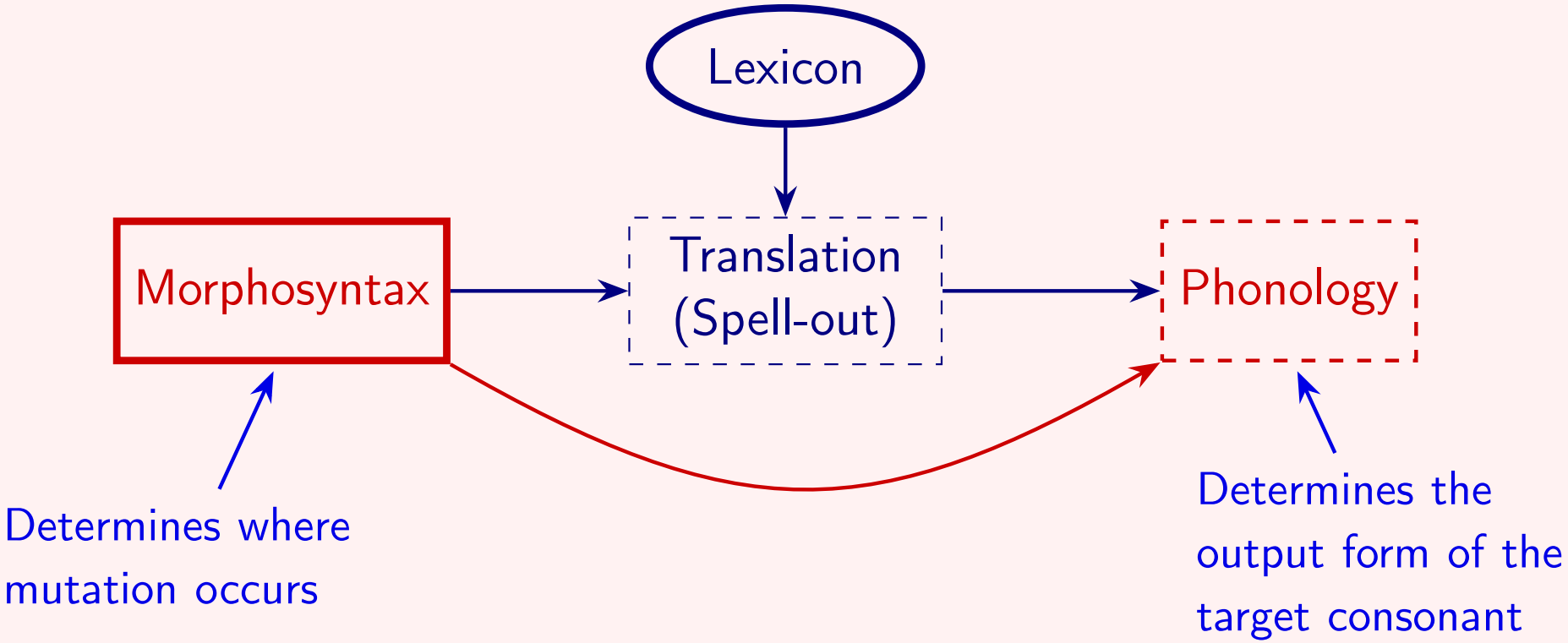
- Adjectival agreement:
  - *bean* ***bh****eag* ***dh****ílis* 'a **L**.small **L**.loyal woman'
- Definite possessors:
  - *bád (mór)* ***Ch****aoimhín* '**L**.Caoimhín's (big) boat'
- Tense marking:
  - ***bh****uaigh mé* 'I **L**.won'

Irish ICM: overview



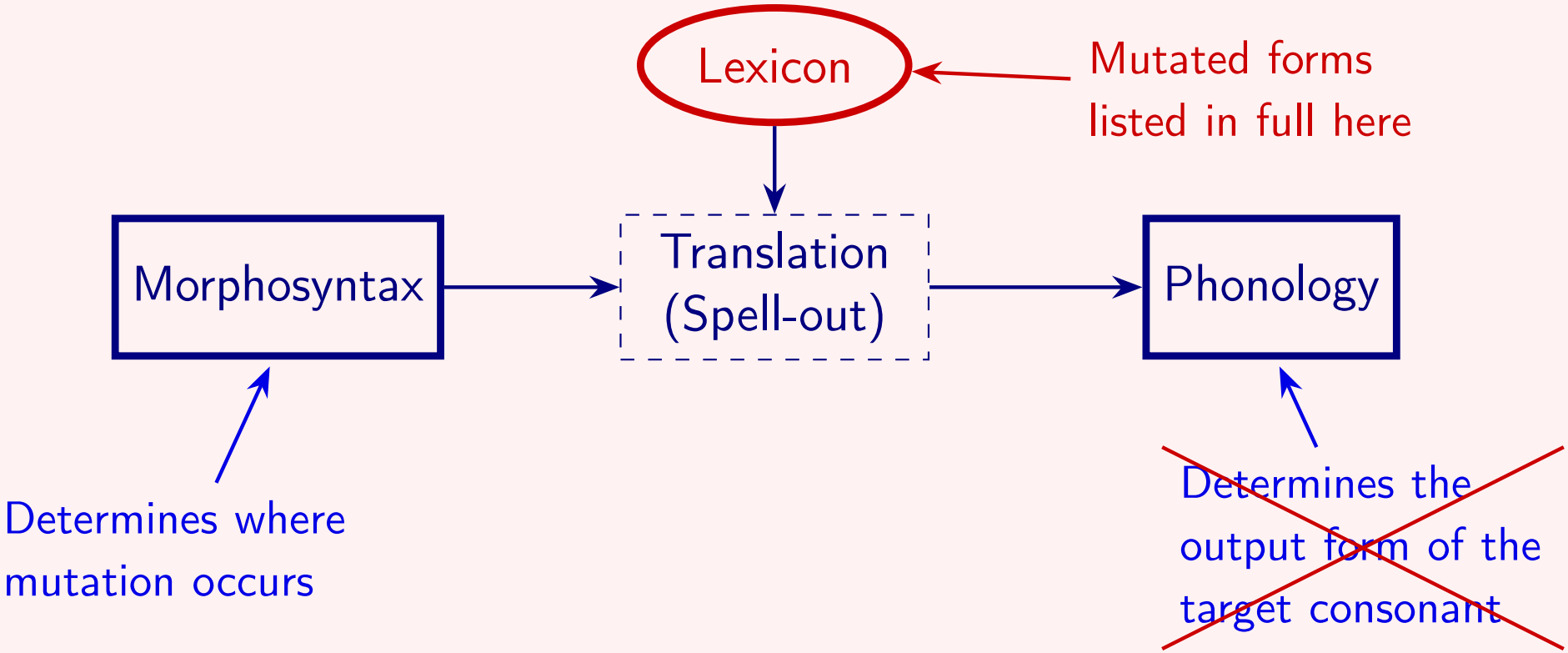
Q: How can we reconcile this with our commitment to strict modularity?

Option 1: loosen modularity requirements



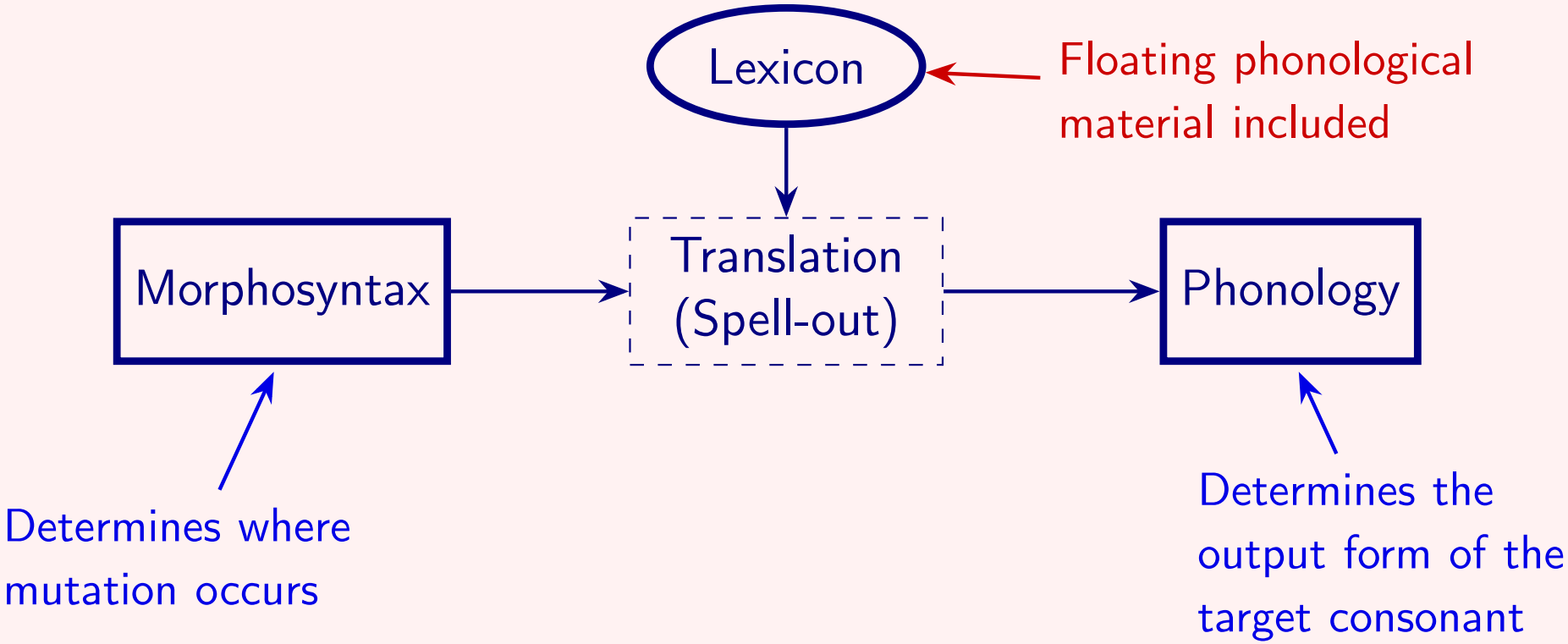
(e.g. Hamp 1951; McBrearty 1980; Pyatt 1997)

Option 2: mutated forms are precompiled



(e.g. Green 2006, 2008; Stewart 2004; Hannahs 2013)

Option 3: "floating" phonological material



(e.g. Lieber 1983; Swingle 1993; Iosad 2014; Breit 2019)

Option 3: "floating" phonological material

Recall: Eclipsis mutates **voiceless** [p, t, k, f] $\longrightarrow$ **voiced** [b, d, g, v]

$\Rightarrow$ Floating [+Voice] in eclipsis contexts

e.g. *i*-[+Voice] 'in' + *Páras* 'Paris' $\longrightarrow$ *i* ***bP****áras* 'in **E**.Paris'

More generally,

Floating phonological material + Target consonant $\longrightarrow$ Mutated target

e.g. floating features (Lieber 1983; Wolf 2005), floating "grid marks" (Trommer 2009), floating bare class nodes (Iosad 2014), floating elements (Breit 2019), ...

Here: {L} = lenition-inducing material; {E} = eclipsis-inducing material

Sources of floating material: two possibilities

Type 1: Mutation material at the right edge of a "trigger word"

an-{L} *bróg* ⟶ *an* ***bh****róg* 'the **L**.shoe'

i-{E} *grá* ⟶ *i* ***ng****rá* 'in **E**.love'

Type 2: Mutation material as a prefix on the target word

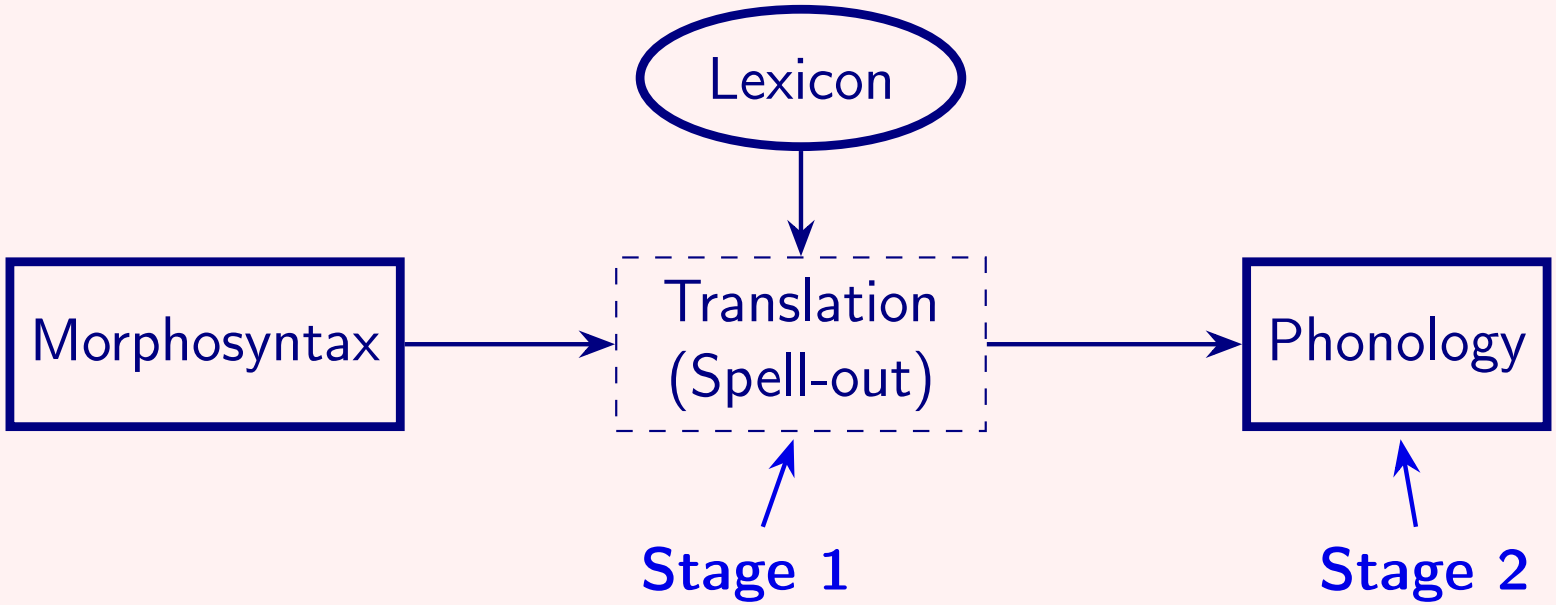
bean {L}-*beag* {L}-*dílis* ⟶ *bean* ***bh****eag* ***dh****ílis* 'a **L**.small **L**.loyal woman'

bád (mór) {L}-*Caoimhín* ⟶ *bád (mór)* ***Ch****aoimhín* '**L**.Caoimhín's (big) boat'

{L}-*buaigh mé* ⟶ ***bh****uaigh mé* 'I **L**.won'

(Laoide-Kemp 2024)

Summary of the strictly modular model



Stage 1: Mutation-inducing phonological material {L/E} is inserted

Stage 2: {L/E} interacts with a following consonant to produce output

Evaluating the strictly modular model

Strengths:

- Compatible with strict modularity (cf. Option 1 above)
- Captures phonological regularities (cf. Option 2 above)
- Principled distinction between two subtypes

Issues still to be addressed:

- Precise contents of {L} and {E}
- Exceptional non-mutation (thesis Ch.3)
- Ordering paradoxes (thesis Ch.4)

Additional strength: strict modularity as a research methodology

- Principled method for generating/comparing hypotheses
- Insights into the nature of the morphosyntax-phonology interface

Case study: coronal blocking of mutation

an ***bh****róg* 'the **L**.shoe'
gan ***ch****óta* 'without a **L**.coat'

an ***d****uilleog* 'the leaf'
gan ***t****each* 'without a house'

Coronal blocking

Blocking of ICM when two **coronal consonants** [d, l, n, t, s] come together at a word boundary

bróg ***dh****earg* 'a **L**.red shoe'
bád ***Ch****aoimhín* '**L**.Caoimhín's boat'

traein ***dh****earg* 'a **L**.red train'
bád ***Sh****eáin* '**L**.Seán's boat'

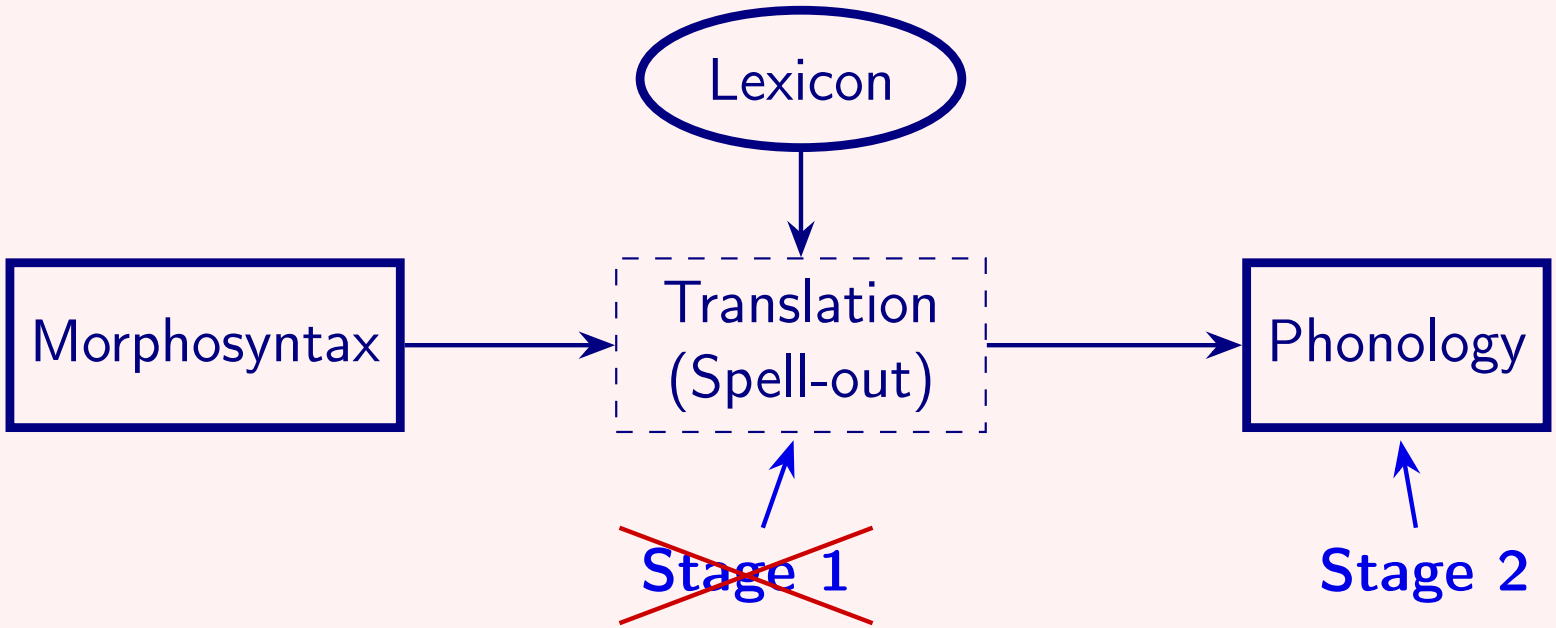
*glan-****ch****innte* 'fully-**L**.sure'

*gla****n****-****t****irim* ∼ *glan-****th****irim* 'fully-(**L**).dry'

Coronal blocking: the strictly modular approach

Coronal blocking

Blocking of ICM when two **coronal consonants** [d, l, n, t, s] come together at a word boundary

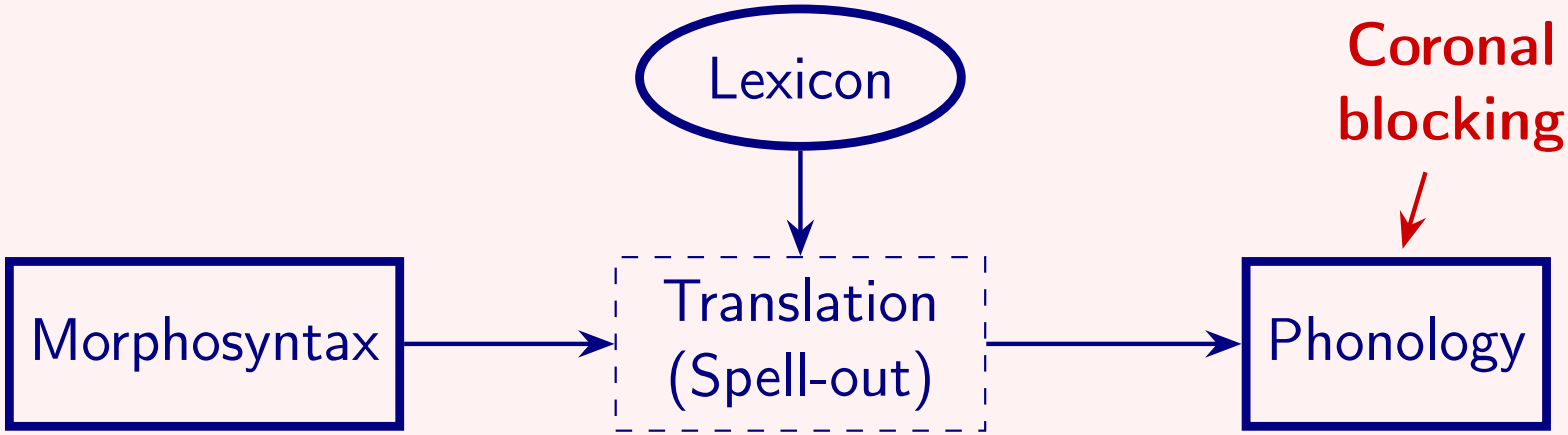


Coronal blocking as a phonological effect

Analysis: "coronal fusion" (Ní Chiosáin 1991: 34)

- Adjacent coronal consonants [d, l, n, t, s] must share their [+Cor(onal)] feature
- Target consonant becomes inaccessible as a host for {L/E}
- e.g. *ga**n** **t**each* 'without a house'

The domain of coronal blocking



But... coronal blocking only found in a **subset** of mutation contexts

Q: How does the phonology "know" where mutation should be blocked?

A: Relates to the **Type 1 vs. Type 2** distinction

The domain of coronal blocking

Assume spell-out occurs **item-by-item** in pre-defined **chunks**

(e.g. Bobaljik 2000; Embick 2010; Kalin 2021)

Type 1: Mutation material {L/E} at the right edge of a "trigger word"

teach
[*gan*-{L} *teach*]
[*gan* *teach*] ⇒ **Coronal blocking** of mutation

Type 2: Mutation material {L/E} as a prefix on the target word

dearg
[{L} *dearg*]
[*dhearg*] ⇒ **Mutation** proceeds as usual
traein [*dhearg*]

The domain of coronal blocking

But what about the cases with variable **coronal blocking** / **mutation**?

*gla**n**-**t**irim* ∼ *glan-**th**irim* ‘fully-(**L**).dry’

Analysis:

- A case of **Type 2 mutation**...
- ...but the preceding coronal belongs to the **same spell-out chunk**

tirim
{L}-*tirim*
[*gla**n*** {L}-*tirim*]
[*gla**n**-**t**irim*] ∼ [*glan-**th**irim*] ⇒ Both outcomes possible!

The domain of coronal blocking

Consequences of the analysis:

- A diagnostic for **spell-out domain structure** in Irish
- Evidence for **two stages** of phonological computation
- Constraints on the **nature of {L/E}** and the mutation process itself

More generally...

- Offers **fresh insights** into the structure of the modular interface
- Highlights potential avenues for **further research**

A strictly modular account of Irish ICM: conclusions

Goal 1

To demonstrate that Irish initial consonant mutation is **fully compatible with a strictly modular model** of language structure

- "Floating" phonological material {L/E}
- Two distinct subtypes

Goal 2

To make the case for a **research methodology that commits to strict modularity** from the outset

- Principled method for generating hypotheses
- Fresh insights and avenues for future research

Go raibh míle maith agaibh!

References I

- Bobaljik, Jonathan David (2000). "The ins and outs of contextual allomorphy". In: *University of Maryland Working Papers in Linguistics* 10. Ed. by Kleanthes K. Grohmann and Caro Struijke, pp. 35–71.
- Breit, Florian (2019). "Welsh mutation and strict modularity". Doctoral dissertation. University College London.
- Embick, David (2010). "Localism versus globalism in morphology and phonology". In: *Linguistic Inquiry Monographs*. Ed. by Samuel Jay Keyser. Vol. 60. Cambridge, MA: MIT Press.
- Fodor, Jerry A (1983). *The modularity of mind*. Cambridge, MA: MIT Press.
- Green, Antony D (2006). "The independence of phonology and morphology: the Celtic mutations". In: *Lingua* 116.11, pp. 1946–1985.
- — (2008). "Coronals and compounding in Irish". In: *Linguistics* 46.2, pp. 193–213.
- Hamp, Eric P (1951). "Morphophonemes of the Keltic mutations". In: *Language* 27.3, pp. 230–247.
- Hannahs, S. J. (2013). "Celtic initial mutation: pattern extraction and subcategorisation". In: *Word Structure* 6.1, pp. 1–20.
- Iosad, Pavel (2014). "The phonology and morphosyntax of Breton mutation". In: *Lingue e linguaggio* 13.1, pp. 23–42.

References II

- Kalin, Laura (2021). "Verbal plural allomorphy in Hunzib and its implications for the cyclicity of the morphosyntax- phonology interface". In: *Glossa* 7.1, pp. 1–25.
- Laoide-Kemp, Anna (2024). "Irish initial consonant mutation: disentangling phonology from morphosyntax". In: *Proceedings of the Thirty-Fifth Western Conference on Linguistics*. Ed. by MJ Jaurena and Zach Metzler. Vol. 29. California State University, Fresno, pp. 58–68.
- Lieber, Rochelle (1983). "New developments in autosegmental morphology: consonant mutation". In: *Proceedings of the West Coast Conference on Formal Linguistics*. Vol. 2. Stanford Linguistics Association (Stanford University, Department of Linguistics), pp. 165–175.
- McBrearty, Jane Roscoe (1980). "Initial mutation in Modern Irish and its implications for phonological theory". PhD thesis. University of London.
- Ní Chiosáin, Máire (1991). "Topics in the phonology of Irish". Doctoral dissertation. University of Massachusetts, Amherst.
- Pyatt, Elizabeth (1997). "An integrated model of the syntax and phonology of Celtic mutation". Doctoral dissertation. Harvard University.
- Scheer, Tobias (2011). *A guide to morphosyntax-phonology interface theories*. Berlin/New York: De Gruyter Mouton.

References III

- Stewart, Thomas W (2004). "Mutation as morphology: Bases, stems, and shapes in Scottish Gaelic". Doctoral dissertation. The Ohio State University.
- Swingle, Kari (1993). "The Irish and other mutations". In: *Proceedings of WCCFL*. Ed. by Jonathan Mead. Vol. 11, pp. 451–466.
- Trommer, Jochen (2009). "Chain-Shifting Mutation in Irish and Multi-Valued Features". In: *OCP, Edinburgh, January 2009*.
- Wolf, Matthew (2005). "For an autosegmental theory of mutation". In: *Proceedings of the 24th West Coast Conference on Formal Linguistics*. Ed. by John Alderete et al. Somerville, MA: Cascadilla Proceedings Project, pp. 370–378.