Syntactically unjustified morphs and other strategies
for hiatus resolution in Irish prepositions

Previous work has examined cases of lexical conservatism where the phonology uses a syntactically unjustified morph to improve phonotactics (e.g. Steriade 1999). Irish prepositions show that the phonology is not blind to the morphological features attached to these morphs, but chooses the least marked among them. This paper expands on the analysis presented in O'Brien (2007) by explaining the behavior of prepositions before both singular and definite articles and bare NPs, and where they resolve hiatus through morph insertion, schwa deletion, or epenthesis.

1. The problem

Irish prepositions inflect for person and number only when they have no overt object:

(1) a. le   Máire   b. *léi   Máire   c. léi   d. *léi   sí/í   e. *le   sí/í
        with Mary   with.3sGF Mary   with.3sGF   with.3sGF she/her   with she/her

However, the 3sGM form is used by some prepositions to avoid a hiatus before the definite article, /ən/ (2a), while others delete a schwa instead (2b). (2c) shows that the 3sGM morph insertion is triggered by the definite article, and not a [+def] feature on a genitive phrase.

(2)   a. leis an gcat   b. den chat   c. le cat na comharsan
         /lʲɛʃ ən gat/   /dʲən xat/   /lʲɛ kat nə 'koːrsən/
         with.3sGM the cat   off.the cat   with cat the.GEN neighbors.GEN

2. Use of the 3sgM before the singular definite article

Following Wolf (2008), I analyze this using a series of constraints to allow insertion of syntactically unjustified morphs to improve the phonotactics:

(3) **Dep-Morph(F):** For every instance f of the node F at the exponent level, there is an
        instance f' of the node F at the syntactic level, and f corresponds to f'.

Constraints against insertion of the more marked features (e.g. F, PL, 1ST) outrank *Hiatus, and will not be used for hiatus resolution. The less marked features rank low, favoring their insertion (4a) over deletion of a schwa (4c), when either strategy would work to resolve hiatus.

(4)

le + an cat 'with + the cat'	Dep-M (1st/2nd)	Dep-M (f/pl)	*Hiatus	Max(ə)	Dep-M (3rd)	Dep-M (M)	Dep-M (sg)
☞ a. /lʲɛʃ ən gat/ [3,SG,M]					*	*	*
b. /lʲɛ ən gat/ [Ø]			*!				
c. /lʲɛn gat/ [Ø]				*!			
d. /lʲæt ən gat/ [2,SG]	*!						*

However, in prepositions where the 3sGM form ends in a vowel (5c), the schwa deletes (5a), rather than inserting an inflected form which would introduce more marked features (5d).

(5)

do + an cat 'for the cat'	Dep-M (1st/2nd)	Dep-M (f/pl)	*Hiatus	Max(ə)	Dep-M (3rd)	Dep-M (M)	Dep-M (sg)
☞ a. /dən xat/ [Ø]				*			
b. /də ən xat/ [Ø]			*!				
c. /doː ən xat/ [3,SG,M]			*!		*	*	*
d. /dəm ən xat/ [1,SG]	*!						*

3. Use of the 3sGM before the plural definite article

A further puzzle lies in the fact that most of the prepositions which appear in their 3sGM form before a singular definite article also do so before the plural definite article /nə/ despite there being no hiatus. (I explain one of the exceptions as phonetically motivated and the other as morphologically motivated.) To analyze these facts, I claim that correspondence holds between the forms of the preposition appearing before any definite article (and not a [+DEF] feature):

(6) **CorrFeature(prep/_[def])**$_{\text{SG/PL}}$: Assign one violation to any candidate whose features differ from the canonical example of a preposition before a definite article.

    In (7), this correspondence constraint motivates the insertion of the 3sGM morph despite a lack of phonological motivation.

(7)	le + na cait 'with the cats'	CorrF(prep /_[Def])$_{\text{SG/PL}}$	Dep-M (3RD)	Dep-M (M)	Dep-M (SG)
	☞ a./lʲɛʃ nə gatʲ/ [3,SG,M]		*	*	*
	b. /lʲɛ nə gatʲ/ [Ø]	*!			
	+DEF, +SG: lʲɛʃ [3,SG,M]				

    In prepositions which resolve hiatus through schwa deletion in the singular, the base form appears in the plural (8a) (minus the /-n/ of the singular definite article, which appears in (8b)).

(8)	ó + na boscaí 'from the boxes'	CorrF(prep /_[Def])$_{\text{SG/PL}}$	Dep-M (3RD)	Dep-M (M)	Dep-M (SG)
	☞ a. /o: nə bɔski:/ [Ø]				
	b./o:n nə bɔski:/ [Ø, +DEF,+SG]	*!			
	+DEF, +SG: o:- [Ø]				

4. Hiatus resolution before bare NPs

    Before a vowel-initial bare NP, a schwa will delete to avoid hiatus, but hiatus is otherwise tolerated. This appears contrary to the constraint ranking in (4) and (5) where insertion of the 3sGM was less costly than deleting a schwa. To account for this, I propose that there is also correspondence between forms that appear in contexts other than before a definite article:

(9) **CorrFeature(/_[-def])**$_{\text{PREP}}$: Assign one violation to any candidate whose features differ from the canonical example of a preposition not before a definite article.

    In (10), the candidate with hiatus (10a) is the winner. A full vowel cannot be deleted (10b) and the 3sGM morph cannot be inserted without violating the correspondence constraint (10c).

(10)	le + éan /lʲɛ e:ən/ 'with a bird'	Dep-M (1,2,F,PL)	Max(V)	CorrF (/_[-Def])$_{\text{PREP}}$	*Hiatus	Max(ə)	Dep- M(3sGM)
	☞ a. /lʲɛ e:ən/ [Ø]				*		
	b. /lʲe:ən/ [Ø]		*!				
	c. /lʲɛʃ e:ən/ [3,SG,M]			*!			***
	base [-Def]: lʲɛ [Ø]						

    But, in (11), hiatus can be resolved through deletion of a schwa (11a) which satisfies correspondence because no additional features are introduced, as in (11c).

(11)	do + éan /də e:ən/ 'for a bird'	Dep-M (1,2,F,PL)	Max(V)	CorrF (/_[-Def])$_{\text{PREP}}$	*Hiatus	Max(ə)	Dep- M(3sGM)
	☞ a. /dʲe:ən/ [Ø]					*	
	b. /də e:ən/ [Ø]				*!		
	c. /do: e:ən/ [3,SG,M]			*!			***
	base [-Def]: də [Ø]						

O'Brien, J. 2007. Lexical Conservatism in Irish Prepositions. MS. UC Santa Cruz. **Steriade**, D. 1999. *Lexical Conservatism in French Adjectival Liaison.* Formal Perspectives on Romance Linguistics. John Benjamin's Publishing Company, 246-270. **Wolf**, M. 2008. Optimal Interleaving: Serial Phonology-Morphology Interactions in a Constraint-Based Model. PhD dissertation, UMass Amherst.