Allomorphy and Locality in the Irish Verbal Complex*

Jason Ostrove  
jostrove@ucsc.edu

No matter what theory or subfield of linguistics one is working in, the question of locality comes up time and time again (morphological locality: Embick 2010; Bobaljik 2012; Bobaljik and Harley to appear; Merchant 2015; Deal and Wolf In press, a.o.).

- What interactions are possible?
- What are the domains for interactions between linguistic elements? How ‘far’ is too far?

Many notions of locality make reference to the idea of a cycle:

(1) Adapted Locality Conditions from Embick (2010)

Two nodes stand in a local relation iff:

a. The Adjacency Hypothesis: They are linearly adjacent.  
b. The Domain Hypothesis: They are in the same cycle.

But what/where are the morphological cycles?

(2) ‘Category-defining heads n, v, a, and so on, are cyclic heads: such heads define the phases that trigger Spell-Out.’  

‘The natural move in a theory with cyclic locality domains is to assume that the significant domains for (morpho)phonological...interactions are identical to syntactic ‘phases.’”  

But what/where are the morphological cycles?

Importantly though, Embick does not address the status of C; he mentions this gap in his fn. 10.

“These [category defining heads] are not necessarily the only phases in the theory; phases implicated in the work of Chomsky (2000, 2001) and others - for instance, C and D - could be part of this type of theory as well. There is a question as to whether category-defining heads and heads like C and D have the same status, however.” (Embick 2010, pg. 194, fn. 10)

*Many thanks, first and foremost, to the Irish speakers who have so generously shared their time and judgments with me throughout the course of this project, particularly Ailbhe Nic Giolla Chomhail, Lee Vahey, and Conal McShane. Many thanks as well to my advisor, Jim McCloskey, for his time and support in all aspects of this project. Heartfelt thanks additionally are due to my committee members, Armin Mester and Sandy Chung, for their invaluable support and comments along the way. Thanks are due as well to the participants of the 2015 290 Research Seminar at UCSC, particularly to its leader, Junko Itô, for her guidance along the way. Abbreviations: auto=autonomous form, c=embedded declarative complementizer, c.neg=embedded negative complementizer, cond=conditional, dep=dependent allomorph, fut=future tense, gen=genitive case, indep=independent allomorph, neg=negative complementizer, past=past tense, past.hab=past habitual, pres=present tense, prog=progressive, q=interrogative complementizer, real=realis conditional marker.
This point is not worth taking lightly, as much work has argued that C is a phase head in the syntax; in fact, it seems to be the only phase head whose status is uncontroversial (Chomsky, 2000, 2001, 2008; McCloskey, 2002).

The goal of this talk is to investigate this open possibility by asking the question:

(3) **Is C a cyclic head in the morphology as well as in the syntax?**

To go about this, we will explore data from Irish.

- Complementizers are morphologically quite active.
- McCloskey (2002) has argued quite cogently that C is a syntactic phase head in this language.

Our discussion will be focused on two closely related phenomena in the language:

- **Complementizer-lowering** (C-Lowering) (McCloskey, 1996; Oda, 2012; Acquaviva, 2014; Ostrove, 2015)
- **The dependent/independent alternation** (Oda, 2012; Acquaviva, 2014; Ostrove, 2015)

The latter is a typologically rare form of verbal suppletion triggered by adjacent complementizers, and is therefore interesting to discussions of morphological locality.

(4) a. Bhí mé ann.
   be.PAST I there
   ‘I was there.’

b. . . . go raibh mé ann
   be.PAST.DEP I there
   ‘. . . that I was there.’

(5) a. Gheobhaidh tú carr nua.
   get.FUT you car new
   ‘You will get a new car.’

b. An bhfaighidh tú carr nua?
   q get.FUT.DEP you car new
   ‘Will you get a new car?’

By examining these data in detail, I hope to convince you of the following conclusions:

1. That C is **not** a cyclic head in the morphology.
   
   **Syntactic phase head ≠ Morphological cyclic head**
   
   **But phase heads can still interact morphologically with elements in the complements.**

2. Provide support for locality conditions such as those in (6), from Bobaljik (2012) and Bobaljik and Harley (to appear).

(6) **Where A triggers allomorphy on B:**


These locality conditions will be optimal for us because they do not require us to make reference to cycles. They do not allow for a free-for-all thought: *A and B must still be in the same morphological word, defined here as a complex head.*

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1. Although note that it is present in the other descendants of Old Irish, Scottish Gaelic and Manx. For information on Scottish Gaelic, and interesting problems in applying the analysis here to it, see Appendix B.

2. Throughout this handout, for those not familiar with and perhaps intimidated by Irish orthography, in this handout complementizers are in blue and finite verbs are in red.

3. Bobaljik and Harley (to appear) nuance this in interesting ways that will not be relevant to us.
The talk is organized as follows:

- §1 begins by presenting the basics of the Irish verbal complex, then shows the dependent/independent alternation.
- §2 discusses the data which motivate C-Lowering in the first place, drawing on McCloskey (1996) and Ostrove (2015).
- §3 demonstrates the morphological analysis from Ostrove (2015), which relies heavily on Embick and Noyer (2001) and Oda (2012).
- §4 returns to the broader questions of locality.
- §5 concludes.

1 Irish Verbal Complexes and The Dependent/Independent Alternation

The Irish finite verb is composed of a root and tense marking.

(7) a. rith -eann
    run -PRES
    ‘runs’
  b. cuir -fidh
    put -FUT
    ‘will put’

Additionally, Acquaviva (2014) argues that Irish has an overt exponent of v in the verbal suffix -(a)igh [i].

(8) a. Ceann -aigh!
    buy -v
    ‘Buy!’
  b. ceann -ai -onn
    buy -v -PRES
    ‘buys’

This leads us to the morphological decomposition in (9).

(9) \[
\text{T} \\
\text{v} \quad \text{T} \\
\text{\sqrt{\text{ROOT}}} \quad \text{v} \quad \text{-onn} \\
\text{ceann} \quad -\text{ai-}
\]
‘Verbal complex’ in the Irish literature, as introduced by McCloskey (1996), also includes complementizers.

(10) Irish Verbal Complex = C V (v) T

(11) Example Verbal Complexes
a. go bhfiil -fidh
   c return -FUT
   ‘. . . that will return . . .’

   b. go gceann -ai -onn
   c buy -v -PRES
   ‘. . . that buys . . .’

The elements in the verbal complex are thought of as a ‘single word’ because:

- They form a single prosodic word (Elfner, 2012).
- Nothing may intervene between the pieces.

The complete list of elements analyzed as complementizers, going back to McCloskey (1978), is given in (12). We can be confident in the claim that these elements are properly treated as on par with English ‘that,’ namely a C, from the work of McCloskey (2002).

(12) Irish Complementizers

<table>
<thead>
<tr>
<th>Complementizer</th>
<th>Meaning</th>
<th>Trigger the dependent form?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ní</td>
<td>Negation</td>
<td>Yes</td>
</tr>
<tr>
<td>b. an</td>
<td>Interrogative Marker</td>
<td>Yes</td>
</tr>
<tr>
<td>c. go</td>
<td>Embedded Declarative Complementizer</td>
<td>Yes</td>
</tr>
<tr>
<td>d. nach</td>
<td>Embedded Negative Complementizer</td>
<td>Yes</td>
</tr>
<tr>
<td>e. a</td>
<td>Direct Relative Marker</td>
<td>Yes</td>
</tr>
<tr>
<td>f. dá</td>
<td>Irrealis Conditional Marker</td>
<td>Yes</td>
</tr>
<tr>
<td>g. a</td>
<td>Indirect Relative Marker</td>
<td>No</td>
</tr>
<tr>
<td>h. má</td>
<td>Realis Conditional Marker</td>
<td>No</td>
</tr>
</tbody>
</table>

As can be seen in (12), complementizers in Irish carry out a wide range of functions⁶:

- Negation (12a and 12d)
- Question marker (12b)
- Conditional markers (12g and 12h)
- Finite Embedded Complementizers (12c)
- Relativizers (12e and 12f)

⁶This wide range of functions may make it tempting to appeal to a nanosyntactic or Cartographic decomposition of the left periphery in Irish. This is not pursued here.
Additionally, as seen in the rightmost column, a seemingly random subset of the complementizers in (12) trigger the dependent form. I will refer to this subset as the triggering complementizers.

(13) Dependent/Independent Alternation: A pattern of verbal suppletion which is triggered by certain complementizers.
This suppletive form is thought of as ‘dependent’ on the preceding complementizer.

(14) The Independent/Dependant Alternation in Modern Irish

<table>
<thead>
<tr>
<th>Citation Form</th>
<th>Past Tense Alternations</th>
<th>Dependent Form</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>bí ‘be’</em></td>
<td><em>bhi</em></td>
<td><em>raibh</em></td>
</tr>
<tr>
<td>[bi:]</td>
<td>[vi:]</td>
<td>[rɔv] or [ro]</td>
</tr>
<tr>
<td><strong>b.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>déan ‘do’</em></td>
<td><em>rinne</em></td>
<td><em>dear‘na</em></td>
</tr>
<tr>
<td>[d3en]</td>
<td>[rɪn̪a]</td>
<td>[d3arna]</td>
</tr>
<tr>
<td><strong>c.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>feic ‘see’</em></td>
<td><em>chonaic</em></td>
<td><em>faca</em></td>
</tr>
<tr>
<td>[f3ɪk]</td>
<td>[xo.nɪk]</td>
<td>[fa.xa]</td>
</tr>
<tr>
<td><strong>d.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>téigh ‘go’</em></td>
<td><em>chuaigh</em></td>
<td><em>deach‘aigh</em></td>
</tr>
<tr>
<td>[tʃeː]</td>
<td>[xu.i]</td>
<td>[d3a.xi]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Citation Form</th>
<th>Future Tense Alternations</th>
<th>Dependent Form</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>e.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>faigh ‘get’</em></td>
<td><em>gheobhaidh</em></td>
<td><em>bhfaigh‘d</em></td>
</tr>
<tr>
<td>[f3ai]</td>
<td>[jɔ.i]</td>
<td>[wɔi]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Citation Form</th>
<th>Present Tense Alternations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>f.</strong></td>
<td></td>
</tr>
<tr>
<td><em>bí ‘to be’</em></td>
<td><em>tá</em></td>
</tr>
<tr>
<td>[bi:]</td>
<td>[taː]</td>
</tr>
</tbody>
</table>

There is no way in the synchronic phonology to get from the dependent form to the independent form or vice versa, so these seem to be cases of true suppletion.

The dependent form occurs if and only if a triggering complementizer precedes the verb (15-16).

(15) a. An ṭ raibh tú tinn?
\( \text{Q was.DEP you sick} \)
`Were you sick?`

b. *An ṭ bhi tú tinn?*
\( \text{Q was.INDEP you sick} \)
Intended: ‘Were you sick?’

Adapted from Oda (2012)

(16) a. Bhí mé tinn.
\( \text{was.INDEP I sick} \)
`I was sick.’

b. *Raibh mé tinn.*
\( \text{was.DEP I sick} \)
Intended: ‘I was sick.’

Oda (2012)
Use of the dependent form after a non-triggering complementizer is ungrammatical (17).

(17)  
\begin{align*}
\text{a. } & \text{ Må}^{NT} \textit{ bhí tú } \ldots \\
& \text{if.real was.indep you} \\
& \text{‘If you were…’}
\end{align*}
\begin{align*}
\text{b. } & *\text{Må}^{NT} \textit{ raibh tú } \ldots \\
& \text{if.real was.dep you} \\
& \text{Intended: ‘If you were…’}
\end{align*}

Oda (2012)

So, to take stock of the relevant data here:

- The verbal complex consists of C V (ν) T, in this order.
- These elements form a single prosodic constituent (Elfner, 2012).
- Nothing may intervene between these elements.
- The verbal complex is the domain for suppletion: the dependent/independent alternation.
- This suppletion is triggered by some complementizers, and is triggered when and only when one of these verbs follows a triggering complementizer.

**The verbal complex is a morphological domain in Irish.**

2 Motivating Complementizer Lowering

McCloskey (1996) proposes that complementizers lower to the position of the verb (T).

2.1 Leftward Adjuncts

Irish allows adjuncts to appear to the left of the complementizer in an embedded clause. Importantly though, these are obligatorily interpreted in the lower clause, not the higher clause.

(18)  
\begin{align*}
\text{a. } & \text{Deiridís } \text{ CP[ an chéad Nollaig eile go dtiocfadh sé aníos].} \\
& \text{say.3pl.past.hab the first Christmas other c comeCOND he up} \\
& \text{‘They used to say that next Christmas he would come up.’}
\end{align*}
\begin{align*}
\text{b. } & \text{Tá eagla orm } \text{ CP[ leath an ama nach feasach mé an beo nó marbh thú].} \\
& \text{is fear on.me half the time c.neg knowing I q alive or dead you} \\
& \text{‘I’m afraid that half the time I don’t know whether you’re alive or dead.’}
\end{align*}
\begin{align*}
\text{c. } & \text{Tá a fhios agam } \text{ CP[ i lár an gheimhridh] [ón ngrinneal aníos] go gcaitear} \\
& \text{is knowledge at.me in middle winter.gen from-the sea.bed up c throw.AUTO} \\
& \text{wrasse on the beach} \\
& \text{‘I know that in the middle of winter wrasse are thrown up onto the beach from the seabed.’}
\end{align*}
There is both comparative and language-internal evidence these adverbs attach below C. McCloskey proposes that these adjuncts are adjoined to TP, and then C lowers around them.

(19)

Deiridíš go an chéad Nollaig eile dtiocfadh... → Deiridíš go an chéad Nollaig eile go dtiocfadh...

2.2 The Interaction of Disjunction and Negation

The final piece of evidence for C-lowering comes from the interaction between negation and disjunction. Consider an example like (20).7

(20) [Ní-or ith mé prátaí] nó [ní-or ól mé deoch.]

neg-r eat.past I potatoes or neg-r drink.past I drink

‘I didn’t eat potatoes and I didn’t drink a drink.’

Sentences like (20) are interesting because of what they mean. Based on the lexical item nó ‘or,’ we expect this sentence to mean something like (¬P ∨ ¬Q). But, as shown by the English gloss for (20), it actually means something (¬P ∧ ¬Q).

The argument that this is evidence for C-lowering works as follows. Even though semantically (20) has conjunction, we want to incorporate disjunction into the representation of the meaning because the Irish equivalent of disjunction, nó, is used. We can get to a representation with disjunction from (¬P ∧ ¬Q) easily with De Morgan’s Law, giving us ¬(P ∨ Q).

The question then is how we get from ¬(P ∨ Q) to the actual Irish in (20). I propose that we can do this by claiming that in (20) there is only one semantic negation present, consistent with the semantic representation. The two instances of morphological negation, níor, in (20) are the result of C-lowering into each conjunct, as shown in (21).

(21)


This analysis gives us an understanding of these interesting semantic facts as well as the actual form of sentences like (20).

2.3 Interim Summary

So far, we have seen:

• Irish demonstrates a pattern of verbal allomorphy triggered by a subset of complementizers.

• Irish shows independent evidence for a process of C-lowering, which forces C to be adjacent to the finite verb.

Proposal: C-Lowering creates the local domain.

7Examples like this are provided from Jim McCloskey (p.c.).
3 Morphological Lowering

In 1996 when McCloskey proposed C-lowering, the theoretical landscape was very different because of a strict ban on syntactic lowering and no notion of a powerful morphological component which can alter structures, as that in DM (Halle and Marantz, 1993).

“Lowering analyses are almost always proposed with a certain degree of embarrassment. The embarrassment here focussed on the question of how the proposed C-lowering rule could combine two properties which, in standard terms, are deeply incompatible - the property of not leaving a trace, and the property of being subject to (something remarkably like) the ECP.”

But the theoretical landscape has changed quite a bit since 1996, and now Lowering is widely considered within DM one of the standard tools available within the morphology (Embick and Noyer, 2001; Harley and Noyer, 1999; Oda, 2012).

Here I will adopt Embick and Noyer (2001)’s formalism of Lowering. This is demonstrated in (22), and in tree form in (23).

\[
\text{(22)} \quad \left[ X_P X^o \ldots [ Y_P \ldots Y^o \ldots ] \right] \rightarrow \left[ X_P \ldots [ Y_P \ldots [ Y^o + X^o ] \ldots ] \right]
\]

\[
\text{(23)}
\]

Lowering takes the head of a phrase and lowers it and adjoins it to the head of its complement, sort of like head-movement by adjunction in reverse.

3.1 Excursus into Morphological Lowering in English

The poster child for Lowering is English T-lowering, traditionally referred to as “affix hopping.” It has several properties which will be relevant to us.

3.1.1 Intervening Adverbs are Invisible

T lowering to V is blind to intervening adverbs.\(^8\)

\[
\text{(24)} \quad \begin{align*}
\text{a.} & \quad \text{John has } \textbf{completely} \text{ destroyed the opposition.} \\
\text{b.} & \quad \text{*John } \textbf{completely} \text{ has destroyed the opposition.} \\
\text{c.} & \quad \text{John } t \textbf{completely} \text{ destroy-}ed \text{ the opposition.}
\end{align*}
\]

(24a) and (24b) demonstrate that the adjunction site of the adverb ‘completely’ must be between T and V, as it is allowed to follow T (24a) but it cannot precede it (24b). This tells us that (24c) is the correct representation for the Lowering here.

\(^8\)I follow Embick and Noyer and mark the proposed origin site for a Lowered element with \(t\) for ease of following. I do not claim that Lowering creates a trace of movement.
3.1.2 “Across the Board” Lowering

When VPs are conjoined, T must lower in each of the conjuncts. This is reminiscent of ATB head movement\(^9\).

(25) a. Mathilda \( t \), completely \( V_P[\text{destroy-ed}, \text{the opposition}] \) and \( V_P[\text{crush-ed}, \text{their dreams}] \). 
   \textit{Both conjuncts}

b. *Mathilda \( t \), completely \( V_P[\text{destroy-}∅, \text{the opposition}] \) and \( V_P[\text{crush-ed}, \text{their dreams}] \). 
   \textit{Only right conjunct}

c. *Mathilda \( t \), completely \( V_P[\text{destroy-ed}, \text{the opposition}] \) and \( V_P[\text{crush-}∅, \text{their dreams}] \). 
   \textit{Only left conjunct}

(26) a. Samantha had quickly \( V_P[\text{mastered quantum physics}] \).

b. *Samantha quickly had \( V_P[\text{mastered quantum physics}] \).

c. Samantha \( t \) quickly \( V_P[\text{master-ed quantum physics}] \).

d. Samantha \( t \) quickly \( V_P[\text{master-ed, quantum physics}] \) and \( V_P[\text{solve-d, world hunger}] \). 
   \textit{Both conjuncts}

e. *Samantha \( t \) quickly \( V_P[\text{master-}∅, \text{quantum physics}] \) and \( V_P[\text{solve-d, world hunger}] \). 
   \textit{Only right conjunct}

f. *Samantha \( t \) quickly \( V_P[\text{master-ed, quantum physics}] \) and \( V_P[\text{solve-}∅, \text{world hunger}] \). 
   \textit{Only left conjunct}

3.2 Irish and Lowering

How does C-lowering stack up against these properties of Lowering?

3.2.1 Irish and the Invisibility of Intervening Adjuncts

We’ve already seen above in §2.2 that C-lowering is blind to intervening adjuncts.

(27) a. Deiridís \( t \), an chéad Nollaig eile go dtiocfadh sé aníos __.
   \textit{say.3PL.PAST.HAB the first Christmas other c come.condition he up}

   ‘They used to say that next Christmas he would come up.’

b. Tá eagla orm \( t \), leath an ama nach féasach mé __ an beo nó marbh thú.
   \textit{is fear on.me half the time c.neg knowing I q alive or dead you}

   ‘I’m afraid that half the time I don’t know whether you’re alive or dead.’

c. Tá a fhios agam \( t \), [i lár an gheimhridh] [on ngrinneal aníos] go gcaitear
   \textit{is knowledge at.me in middle winter.gen from-the sea.bed up c throw.automatically}

   ‘I know that in the middle of winter wrasse are thrown up onto the beach from the seabed.’

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\(^9\)Cases of ATB head movement are examples like (i).

(i) Who will \{ t John like \} and \{ t Mary dislike \)
3.2.2 Irish and ATB Lowering

We’ve also already seen that C-lowering applies to each conjunct, similarly to T-lowering in English.

(28)

\[
\text{Níor } [\text{[ith mé prátaí] nó [ól mé deoch]}] \rightarrow \text{[Níor [níor ith mé prátaí] nó [níor ól mé deoch]]}
\]

3.3 Interim Summary #2

- Lowering is a process within DM which lowers the head of a phrase to the head of its complement.
- Lowering processes in English and Irish exhibit similar effects.
  - Insensitivity to intervening adjuncts.
  - ATB Lowering effects into coordinated phrases.

To conclude this section, the proposed Lowering account of C-lowering is shown in (30), which parses the verbal complex given in (29).

(29) \[\ldots\text{ go} \ g\text{ceann-aí-onn} \ldots\]

\[\text{c buy -v-pres}\]

\[\ldots\text{that buys.} \ldots\]

(30) *Irish C-lowering as morphological Lowering*

4 Returning to the Question of Domains

First, recall the original tension laid out in the introduction.

- Morphology is sensitive to *phases* introduced by cyclic heads (Embick, 2010; Deal and Wolf, In press).
- There is a desire to equate the morphological cycles with syntactic phases (Chomsky, 2000, 2001).
• We know that C is a cyclic head in the syntax, especially in Irish (Chomsky, 2001; McCloskey, 2002).

• **Is C a cyclic head in the morphology as it is in the syntax?**

  We have seen that there is quite a bit of evidence in favor of C-Lowering in Irish\(^{10}\):

  1. Leftward Adjuncts (§2.1)

  2. Interactions between negation and disjunction (§2.2)

  Note that C-Lowering straight-forwardly provides the right environment for the locality conditions from Bobaljik (2012) and Bobaljik and Harley (to appear) to apply, giving us an explanation for the dependent/independent alternation in Irish without having to say anything more.

  (31)  *Where A triggers allomorphy on B:*

  a. \[ A . . . ]_X^0 . . . B \]

  b. \[ *A . . . ]_X^P . . . B \]

  Without C-Lowering, a maximal projection boundary would separate C (‘A’) from the verb (‘B’).

  But with it, we can understand why Irish demonstrates this exotic form of allomorphy.

4.1 Why C Cannot be a Cyclic Head in the Morphology

A Sample Derivation Using Embick (2010)

Embick (2010)’s system is used as it is one of the most fleshed out and detailed systems available.

(32)

\[ \begin{array}{c}
  y \\
  W \\
  Z \\
  x \\
  \sqrt{\text{ROOT}} \\
\end{array} \]

\[ \begin{array}{c}
  y \\
  W \\
  x \\
  \bar{Z} \\
\end{array} \]

- \( x \) and \( y \) are cyclic heads.

- When \( x \) is merged in the syntax, any cyclic domains in its complement are sent to Spell-Out. Note that none are illustrated here, but this would be relevant if the root took a complement, for example.

- When \( y \) is merged in the syntax, \( x \), the root (\( x \)’s complement), \( W \), and \( Z \) are sent to Spell-Out\(^{11}\).

Now, let us see how the derivation of the Irish verbal complex would go if C were a cyclic head in the morphology\(^{12}\).

---

\(^{10}\)See McCloskey (1996) for further evidence.

\(^{11}\)Merge of cyclic \( y \) triggers Spell-Out of cyclic domains in the complement of \( y \). For a cyclic domain headed by cyclic \( x \) in the complement of \( y \), this means that the complement of \( x \), the head \( x \) itself, and any edge\(^+\) material attached to \( x \)’s domain undergoes Vocabulary Insertion.'

\(^{12}\)Head movement is not shown for expository purposes.
(33) **Step 1: v merges with √ROOT**

\[
\begin{array}{c}
\text{v} \\
\text{√ROOT} \\
\text{v}
\end{array}
\]

- v is a cyclic head. Therefore, it sends any cyclic domains within its complement to Spell-Out.
- There are no cyclic domains in its complement. Nothing happens for us here.

(34) **Step 2: T merges**

\[
\begin{array}{c}
\text{T} \\
\text{v} \\
\text{T}
\end{array}
\]

\[
\begin{array}{c}
\text{√ROOT} \\
\text{v}
\end{array}
\]

- Again, nothing happens, because T is not a cyclic head.

(35) **Step 3: C merges**

\[
\begin{array}{c}
\text{CP} \\
\text{C} \\
\text{TP} \\
\text{T} \\
\ldots \\
\text{v} \\
\text{T}
\end{array}
\]

\[
\begin{array}{c}
\text{√ROOT} \\
\text{v}
\end{array}
\]

- When C is merged in the syntax, it ‘activates’ the cycle below it, here the v cycle. This causes the root, v, and T to be sent to Spell-Out.

**This means that the root, v, and T are subject to VI in a cycle without C.**

**Therefore, the dependent/independent alternation should not exist.**

- But recall that we know that C is a syntactic *phase* head in Irish (McCloskey, 2002).
- But we have just seen that making C a cyclic head in the morphology makes the wrong predictions for the Irish data.

**Syntactic phase head ≠ Morphological cyclic head**

Now, this clearly does not provide an argument against cycles in morphology, rather just that we cannot equate syntactic phases with morphological cycles. But we have learned that Embick (2010)’s assumption that cyclic heads in the morphology are equal to phase heads in the syntax cannot be right.
5 Conclusion

- Irish shows evidence that C is in the same morphological cycle as the following verb.
- This falls out naturally if C is not a cyclic head in the morphology.
- But we know that it is a phase head in the syntax.
- Therefore, syntactic phase head ≠ morphological cyclic head

- With locality conditions such as those in Bobaljik (2012) and Bobaljik and Harley (to appear), we do not need to reference cycles; C-Lowering by itself does everything for us.
- Furthermore, these locality conditions leave us in a theoretically optimal situation with respect to the theory of locality for suppletive allomorphy - consistent with a maximally restrictive theory of such interactions and making use only of concepts independently needed, morphological words and Extended Projections, without adding new technology, such as cycles within complex head.

The question of how we should understand the locality conditions on allomorphic interactions is a very important one and one that is the topic of a lot of interesting and productive current work. The main thing that I hope to have shown here is that one potentially very troublesome case actually, when examined closely, conforms well to a theoretically attractive and restrictive view of such conditions. In Irish, as we have seen, the crucial interactions all take place within the morphological word and among elements of the same extended projection. This is true even though a superficial view of the facts might suggest otherwise. Many questions remain open, of course (especially involving the difficult case of number-driven verbal root suppletion discussed by Bobaljik and Harley to appear). But in Irish at least (initial appearances notwithstanding) we have strong support for, rather than a difficulty for, a maximally restrictive theory of such interactions.

Where do we go from here?

1. Do we need a more detailed syntax for the Irish left periphery? Probably (McCloskey et al. 2014; Elfner 2011, 2012; Ostrove 2015, a.o.).
2. How does the system know which heads are morphological cyclic heads and phase heads if they are not equivalent?
3. The necessity of linear adjacency, as highlighted prominently in Embick (2010), is still alive and well.
4. If C-Lowering is indeed the right way to think about the Irish data discussed above, we still are lowering a phase head into Spell-Out domain. This should not be possible in classical phase theory. But regardless, the Irish facts make it clear that phase heads must be able to interact morphological with elements in their complements.
References


McCloskey, J., R. Bennett, and E. Elfner. 2014. “Prosody, Focus and Ellipsis in Irish”. In Talk at UCSC for the LRC Workshop on Syntax and Information Structure.


A

Are we sure C-Lowering is not phonology?

This point is particularly worth making, as when McCloskey originally proposed C-lowering, he claimed that it was phonological, “driven by the prosodically dependent status of the complementizer particles” (McCloskey 1996, pg. 97-98).

While prosodic movement accounts are too varied to argue against them all, here I will give my reasons for not pursuing a prosodic account.

Let us revisit the list of complementizers in Irish from (7).

<table>
<thead>
<tr>
<th>Complementizer</th>
<th>Meaning</th>
<th>Phonological shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>ní²</td>
<td>[nliː]</td>
</tr>
<tr>
<td>b.</td>
<td>an²</td>
<td>[ɔ]</td>
</tr>
<tr>
<td>c.</td>
<td>go²</td>
<td>[go]</td>
</tr>
<tr>
<td>d.</td>
<td>nach²</td>
<td>[nax]</td>
</tr>
<tr>
<td>e.</td>
<td>a³</td>
<td>[ɔ]</td>
</tr>
<tr>
<td>f.</td>
<td>a³</td>
<td>[ɔ]</td>
</tr>
<tr>
<td>g.</td>
<td>dá³</td>
<td>[dɔː]</td>
</tr>
<tr>
<td>h.</td>
<td>má³</td>
<td>[mɔː]</td>
</tr>
</tbody>
</table>

Clearly, some of these are phonologically weak, by any definition of phonological weakness (7b, 7c, 7e, 7f). **But some of the complementizers are not phonologically weak.** For example, (7a) contains a long vowel, and (7d) contains the bimoraic sequence [ax] (see Bennett (Submitted) for the argument for bimoraicity of this sequence in Irish and the citations therein).

Therefore, I argue that an argument from phonological weakness misses the facts that:

- Complementizers in Irish do not form a coherent class phonologically. Therefore pinning their uniform Lowering behavior on something they do not share is unproductive.

- **The relevant factor of C-lowering seems to be category.**
  The category C is attracted to the category of the finite verb.
  A prosodic account does not capture this core generalization as intuitively as a morphological account using the system of Embick and Noyer (2001).

B

Extension to Scottish Gaelic?

As has been noticed in the past (Bonet and Harbour, 2012), Scottish Gaelic shows a very similar pattern to Irish.

(36) a. **Chaidh** mi dhan phub a-raoir.
  go.PAST I to.the pub last.night
  ‘I went to the pub last night.’
Therefore, it would be nice if we could tell the same C-lowering story for Scottish Gaelic that we told for Irish. But as has been noticed in the past (Adger, 1997)\(^\text{13}\), the Irish data which indicate C-lowering are not replicable in Scottish Gaelic\(^\text{14}\).

(37) **NPI Fronting**
   a. *Duine sam bith chan fhaca mi!*
      person any NEG see.PAST.DE I
      Intended: ‘Not a single person have I seen!’
   b. *C`ail d-rinn mi do.*
      cabbage NEG T\(_\text{HIGH}\) do.PAST I on my vacation
      Intended: ‘Not a single thing did I do on my vacation.’

(38) **Leftward Adjuncts**
   a. **Deirid´s** [an ch´ead Nollaig eile] go dtiocfadh sé aníos.
      say.3PL.PAST.HAB next Christmas c come.COND he up
      ‘They used to say that next Christmas he would come up.’ \(\text{Irish, McCloskey (1996)}\)
      say.PAST they next Christmas c return.COND he
      Intended: ‘They said that next Christmas he’d come back.’ \(\text{Scottish Gaelic}\)

(39) **Negation and Disjunction**
   a. Thuirt do sheanmhair gu robh feum agad rudeigin ithe mus deach
      said your grandmother c be.PAST.DE need at.you something eat.NONFIN before go.PAST.DE
      thu dhachaigh, ach cha robh an t-acras ort.
      you home but NEG be.PAST.DE the hunger on.you
      ‘Your grandmother told you that you needed to eat something before you went home, but you weren’t hungry.’
   b. *Cha do dh’ith thu an t-iasg air neo cha do dh’ol thu am bainne...*
      NEG do eat.PAST you the fish or NEG do drink.PAST you the milk
      Intended: ‘You didn’t eat the first or drink the milk.’
   c. ... oir bha thu d`reach airson dol dhachaigh.
      because be.PAST.INDEP you just for go.NONFIN home
      ‘... because you just wanted to go home.’

The data which convinced us of C-lowering in Irish show the opposite for Scottish Gaelic. The question is then, what technology do we need to account for the dependent/independent alternation in Scottish Gaelic? Perhaps if the grammar has a morphological lowering operation, it has a morphological raising operation too?

\(^{13}\)Although note that Adger (1997) only mentions this in passing. As far as I know there has been no substantive investigation of the corresponding Scottish Gaelic facts.

\(^{14}\)Adger notes that there may be dialectal differences here. The data presented here are from the judgments of two native speakers, both female and in their 20’s, from Skye.