A Case of Non-Linearily Conditioned Contextual Allomorphy in Scottish Gaelic*

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An understanding of locality is crucial no matter what subfield of linguistics one works in. While each field may be concerned with different notions of locality, everyone needs to worry about questions like ‘What is the right domain for a process to apply?’ or ‘How close do two elements need to be in order to influence each other?’

Here we will be concerned with morphological locality by asking the later question through the lens of contextual allomorphy. Specifically, we will ask the question in (1).

(1) How close do elements need to be in order for contextual allomorphy to be triggered?

Let us rephrase the question slightly differently in the context of Distributed Morphology (Halle and Marantz 1993, 1994, a.o.). Within DM, contextual allomorphy is modeled through environment specifications in Vocabulary Entries1. Consider the sample Vocabulary Entry in (2).

(2) <f1, f2> [bl@q] /___←

Essentially, the question becomes what restrictors are possible in Vocabulary Entries to the right of the ‘/’ symbol.

This question has been answered in various ways. Here I will focus on one, that in classical DM. We will examine the system developed in Embick (2010). This is solely because his theory is the most recent and the most well-developed. The concerns and challenges presented here though apply to a much wider range of theories than just that in Embick (2010).

In Embick (2010), the author develops an account of contextual allomorphy which is restricted in two ways.

(3) a. The Domain Hypothesis: In order for a node A to trigger allomorphy on a node B, A and B must be within the same domain.

b. The Adjacency Hypothesis: In order for a node A to trigger allomorphy on a node B, A and B must be linearly adjacent (concatenated).

Here we will be concerned only on (3b), the requirement that nodes be adjacent. To see this visualized, consider a situation like (4). (4) shows three nodes, α, β, and γ, which are concatenated in that order.

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1I follow Arregi and Nevins (2012) in making a terminological distinction between Vocabulary Insertion (VI) and Vocabulary Entries (VEs), instead of Vocabulary Items. This is to avoid confusion in the abbreviations.
(4) \( \alpha \sim \beta \sim \gamma \)

a. \( \alpha \leftrightarrow \beta \)  
   \text{Contextual Allomorphy: } \checkmark

b. \( \beta \leftrightarrow \gamma \)  
   \text{Contextual Allomorphy: } \checkmark

c. \( \alpha \not\leftrightarrow \gamma \)  
   \text{Contextual Allomorphy: } \times

(4a-c) shows which nodes may trigger allomorphy on which other nodes. Only the linearly concatenated nodes may trigger allomorphy on each other. This is what allows (4a-b), but excludes (4c).

In this paper I present a series of data from Scottish Gaelic (or simply Gaelic\(^2\)) which I will argue show a true counterexample to Embick’s adjacency condition in (3b)\(^3\). These data come from future tense morphology on Gaelic verbs.

(5) a. Pòg-\(\text{aidh} \) mi mo luaidh a-nochd.  
   kiss-fut I my love tonight  
   ‘I’ll kiss my love tonight.’

b. Cò a phòg-\(\text{as} \) mi a-nochd?  
   who ‘a’ kiss-fut I tonight  
   ‘Who will I kiss tonight?’

c. Cha phòg-∅ mi mo luaidh a-nochd.  
   neg kiss-fut I my love tonight  
   ‘I won’t kiss my love tonight.’

As we can see in (5), the future suffix has three allomorphs: -(a)idh \([i]\), -(e)as \([\partial s]\) and \(\emptyset\)\(^4\). Here I will argue that the licensing conditions of each allomorph are not phonologically or syntactically conditioned. Instead, I argue that this is true contextual allomorphy of a single node, namely \(T_{[\text{fut}]}\), which is triggered by the identity of the complementizer which forms a verbal complex with it.

The argument is structured as follows. §1 will lay out the basics of Scottish Gaelic verbal morphology. First, in §1.1 I will present the basics of the Gaelic verbal complex, focusing on which nodes must be present. §1.2 presents the allomorphy shown in (5) in more depth, focusing on which complementizers trigger which allomorphs. §2 takes a step back and lays out the arguments for analyzing the alternation shown in (5) as involving true contextual allomorphy. §2.1 presents the argument against it being phonological either. I show that no phonological motivation can be identified, again, requiring that this alternation not be phonologically conditioned. §2.2 shows why this argument cannot be syntactic, focusing on its distribution in various syntactic constructions. What we will see is that no single syntactic environment can be isolated. This requires that the context for the allomorphy cannot be syntactic.

§3 lays out a morphological account of these patterns, focusing even further on why we should think that of these morphs -(idh, -eas and \(\emptyset\) as allomorphs of a single node. The data come from a class of irregular verbs which

\(^2\) Pronounced \([\text{gælik}]\), not \([\text{gælik}]\). \([\text{gælik}]\) refers to the language of Scotland, while \([\text{gælik}]\) refers to the language of Ireland, particularly the Northern dialects.

\(^3\) Note that other apparent counterexamples have been reported in the literature. The two which seem to be the most well-known are from Itelmen (Bobaljik, 2000) and Itzaj Mayan ‘status’ suffixes, which Radkevich (2011) argues expone \(v\). There is some reason to be suspicious of these though (Bonet and Harbour, 2012). We will discuss these cases below in §3.

\(^4\) The careful reader will notice below that there are several orthographic alternations. None of these seem to matter in any way besides the orthography. Below are all the attested orthographic forms of these allomorphs.

(i) a. \([i]\) ⇒ -(a)idh, -(idh

b. \([\partial s]\) ⇒ -(as, -eas, -os
do not take -idh in the future, and likewise are barred from appearing with -eas. This can be straightforwardly explained if they are allomorphs of a single node. In this section I also briefly present another reason for taking different ‘classes’ of complementizers seriously. Specifically, verbal allomorphy is triggered by some complementizers and not others. Importantly, these ‘triggering complementizers’ pattern together in other places in the language, including, I argue, in determining the correct allomorph of the future suffix.

§4 then presents how we should think about restricting contextual allomorphy given that we cannot do it adjacently. The Gaelic facts allow us to restrict this in the maximally restrictive way in (6).

(6) **Contextual Allomorphy Locality Requirement:** In order for a node \( \alpha \) to trigger allomorphy on a node \( \beta \), \( \beta \) must be the head of \( \alpha \)’s complement.

The requirement in (6) allows \( \alpha \) to trigger allomorphy on \( \beta \) in (7), but not in (8).

(7) \[
\begin{array}{c}
\alpha' \\
\alpha \beta P \\
\beta \ldots
\end{array}
\]

(8) \[
\begin{array}{c}
\alpha' \\
\alpha \gamma P \\
\gamma \beta P \\
\beta \ldots
\end{array}
\]

The proposal is that \( \alpha \) may trigger contextual allomorphy on \( \beta \) in (7), because \( \beta \) is the head of \( \alpha \)’s complement here, but it cannot in (8). This is because \( \gamma \) is the head of \( \alpha \)’s complement, not \( \beta \).

After this is discussed as being a possible solution to the Gaelic cases discussed here, we examine the other cases of non-linearly conditioned contextual allomorphy presented in the literature which I am aware of, namely that from Itzaj Mayan (Radkevich, 2011) and Itelmen (Bobaljik, 2000). I argue both of these cases can be subsumed under the analysis presented here by showing that they both obey the Contextual Allomorphy Locality Requirement in (6).

§5 concludes and discusses some lingering questions.

## 1 Scottish Gaelic Verbal Morphology

### 1.1 The Basics

Scottish Gaelic verbal morphology, at first glance, is rather simple. The full paradigm for the verb *cuir* ‘put’ is given in (9).\(^5\)

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\(^5\)The careful reader may notice the second person singular pronoun alternating between *thu* and *tu*. This is allomorphy conditioned by the the ending which precedes it; the future endings -idh and -eas, as well as the conditional suffix -eadh require *tu*, while *thu* is used elsewhere. A full discussion of these very interesting facts is beyond the scope of this paper.
(9) **Scottish Gaelic Verbal Paradigm**

<table>
<thead>
<tr>
<th></th>
<th><strong>Future</strong></th>
<th><strong>Past</strong></th>
<th><strong>Conditional</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>cuir-<em>idh</em> mi</td>
<td>chuir mi</td>
<td>chuir-<em>inn</em></td>
</tr>
<tr>
<td>2SG</td>
<td>cuir-<em>idh</em> tu</td>
<td>chuir thu</td>
<td>chuir-<em>eadh</em> tu</td>
</tr>
<tr>
<td>3SG</td>
<td>cuir-<em>idh</em> e/i</td>
<td>chuir e/i</td>
<td>chuir-<em>eadh</em> e/i</td>
</tr>
<tr>
<td>1PL</td>
<td>cuir-<em>idh</em> sinn</td>
<td>chuir sinn</td>
<td>chuir-<em>eamaid</em></td>
</tr>
<tr>
<td>2PL</td>
<td>cuir-<em>idh</em> sibh</td>
<td>chuir sibh</td>
<td>chuir-<em>eadh</em> sibh</td>
</tr>
<tr>
<td>3PL</td>
<td>cuir-<em>idh</em> iad</td>
<td>chuir iad</td>
<td>chuir-<em>eadh</em> iad</td>
</tr>
</tbody>
</table>

In (9), we can observe a few facts.

First, Gaelic does not have a morphological present. Instead, the language has a few options to correspond to the cases where English would use the simple present. Consider the examples in (10).6

(10) a. Tha *mi ag ithe* brochan.
    be.pres I eat.nonfin porridge
    ‘I’m eating porridge.’

b. Ith *-idh mi* brochan gach madainn.
    eat -fut I porridge every morning
    ‘I eat porridge every morning.’

c. B *-idh mi ag ithe* brochan gach madainn (nuair a thig thu a-steach).
    be -fut I eat.nonfin porridge every morning when ‘a’ come.fut you inside
    ‘I eat porridge when you come in.’

Let us start with (10a). This is a present progressive construction. The present progressive involves the use of the auxiliary *tha* ‘be.’ This is the only verb in the language which has a distinct present form. The lexical verb then occurs in a nonfinite form traditionally called ‘the verbal noun.’

(10b) shows the closest equivalent to the English simple present is the morphological future in Gaelic. Here, no auxiliary is used, and the lexical verb appears in initial position with tense morphology.

(10c) shows that these two broad ways of forming clauses can cooccur. In this sentence, the auxiliary *bidh* ‘be,’ the morphological future form of *tha* in (10a), occurs with tense morphology. The lexical verb again appears as a nonfinite ‘verbal noun.’

These considerations may point to this suffix which I call ‘future’ to instead be something more like [-past] as opposed to [fut]. For the purposes of this paper I abstract away from the exact semantics of *-idh* and focus only on the morphology. I will analyze it as an exponent of T with a [fut] feature, although nothing hinges on this particular feature inventory; a more articulated and semantically accurate feature bundle could be used instead, but the morphological results should be unaffected. As such, I will only refer to the ‘morphological future’ here to refer to these forms.

Now let us look at a more fine-grained morphological decomposition of Gaelic verbs.

First, Gaelic has an overt exponent of *v* in *-ich*, which is totally productive.7

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6 The distribution of *a*, unglossed in (10c), will be discussed in much more detail below in §2.2, as well as the distribution of *an*.

7 The forms in (11a-b) occur in the dictionary. (11c) was heard in a spontaneous utterance produced by a native speaker (age: 40, dialect: Harris) in reference to loanword adaptation.
(11) a. cuimhne ∼ cuimhn -ich
    memory memory -v
    ‘memory ∼ remember’
b. beò ∼ beòth -aich
    alive alive -v
    ‘alive ∼ enliven, arouse’
c. Gàidhlig ∼ Gàidhlig -ich
    Gaelic Gaelic -v
    ‘Gaelic ∼ Gaelicize’

This gives us a morphological decomposition such as (12).

(12) v
    \sqrt{\text{ROOT}}  v
    \mid \mid
    cuimhn- -ich

The position of tense/mood morphology is a bit more complex. First, remember that Gaelic has one two morphologically synthetic tense/mood endings.

(13) a. Glèidh -idh mi an tuisge-beatha dhut.
    reserve -FUT I the whisky for.you
    ‘I’ll hold onto the whisky for you.’
b. Nan glèidh -eadh tu an tuisge-beatha dhomh, bhit'hinn taght'.
    if.IRREAL reserve -COND you the whisky for.me be.COND.1SG happy
    ‘If you were to hold on to the whisky for me, I’d be happy.’
    memory -v -FUT I that
    ‘I’ll remember that.’

This is the expected Mirror Principle order (Baker, 1985, 1988), and can thus be captured easily, as in (14).

(14) T
    \sqrt{\text{ROOT}}  v
    \mid \mid
    cuimhn- -idh

There is a slight complication in the past tense. As can be seen in the table above in (9), past tense is normally marked by leniting the initial consonant. This is marked in the orthography by putting an ‘h’ after the first consonant.

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8I abstract away from the difference between them for the time being, because, morphologically speaking, there does not seem to be an important difference between them in Celtic.

9There are, of course, exceptions to this, but for the purposes of this paper we will not be terribly interested in the orthography or distribution of initial consonant mutations.
(15) a. Chuir mi an t-uisge-beatha 'san fhuaradair.
put.PAST I the whisky in.the refrigerator
'I put the whisky in the refrigerator.'
b. Ghlac na balaich a’ bhratach.
capture.PAST the.PL boys the flag
'The boys captured the flag.'
c. Chuímnich mi sin.
remember.PAST I that
'I remembered that.'

The complication occurs when a verb in the past tense is preceded by certain complementizers. The set of complementizers which does this will feature prominently in the discussion to follow. In these cases, the morpheme do [tɔ] is obligatorily inserted between C and the verb. The lexical verb is still lenited.

(16) a. Cha do chuir mi an t-uisge-beatha 'san fhuaradair.
NEG do put I the whisky in.the refrigerator
'I did not put the whisky in the refrigerator.'
b. An do ghlac na balaich a’ bhratach?
Q do capture.PAST the.PL boys the flag
'Did the boys capture the flag?'
c. Thúirt mi gun do chuímnich mi sin.
say.PAST I C do remember.PAST I that
'I said that I remembered that.'

The list of complementizers which obligatorily occur with do are given in (17)\(^{10}\).

(17) Complementizers that occur with and without 'do'

<table>
<thead>
<tr>
<th>Without 'do'</th>
<th>With 'do'</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>an</td>
</tr>
<tr>
<td>‘a’</td>
<td>‘an’</td>
</tr>
<tr>
<td>na</td>
<td>cha</td>
</tr>
<tr>
<td>Free relatives</td>
<td>Matrix negation</td>
</tr>
<tr>
<td>ma</td>
<td>an</td>
</tr>
<tr>
<td>Realis conditionals</td>
<td>Q</td>
</tr>
<tr>
<td>nach</td>
<td></td>
</tr>
<tr>
<td>Embedded negation</td>
<td></td>
</tr>
<tr>
<td>gun</td>
<td></td>
</tr>
<tr>
<td>Embedded declaratives</td>
<td></td>
</tr>
<tr>
<td>mun</td>
<td></td>
</tr>
<tr>
<td>‘before’</td>
<td></td>
</tr>
<tr>
<td>mur(a)</td>
<td></td>
</tr>
<tr>
<td>Negative conditionals</td>
<td></td>
</tr>
<tr>
<td>nan</td>
<td></td>
</tr>
<tr>
<td>Irrealis conditionals</td>
<td></td>
</tr>
</tbody>
</table>

\(^{10}\)The distribution of 'a' and 'an' will be discussed in detail in §2.2.
This set of complementizers will be of crucial importance to the discussion that follows, as the split is very important to understand Gaelic morphology. For now, I will call the complementizers which occur with do the ‘triggering complementizers’ and those that occur without it the ‘non-triggering complementizers.’ The choice of this terminology will become apparent as we continue through the paper. For now, what is important is that there are two sets of complementizers, one which occur with do and one which occurs without it. In the discussion that follows I will refer to triggering complementizers with a superscript ‘t’ and to the non-triggering complementizers with a superscript ‘nt.’

Now, how should we analyze do? Here I treat it in the maximally simple way: I analyze do as T, just like the T (14), which just linearizes to the lef t, as opposed to the right. This means that the sequence do chuimhnich ‘remembered’ in (16c) can be modeled as in (18).

\[(18)\]

We can capture the distribution of do easily with Vocabulary Entries such as those in (19)\(^{11}\).

\[(19)\]

Finally, complementizers are also a part of the verbal complex in Scottish Gaelic. Exactly how C enters the verbal complex is not totally clear. My goal here is not to provide an analysis of how this part of the Gaelic verbal complex is formed. Instead, the important thing is that, no matter how one wants to analyze this, C has to be in a local domain with the rest of the verbal complex. Here I will follow Bobaljik (2012) and take the necessary domain for allomorphy triggering to occur to be the morphological word\(^{12}\). This requires that C be in the same morphological word as the verb.

There are in principle three ways of doing this. The first, C-lowering, is not possible. The issue becomes apparent when one compares Scottish Gaelic to Irish. Irish has good evidence for C-lowering into the verbal complex (McCloskey, 1996; Harley and Noyer, 1999; Oda, 2012; Acquaviva, 2014), but these same diagnostics yield opposite results in modern Scottish Gaelic, as observed in passing Adger (1997). I won’t reproduce these data here for purposes of space.

The second is syntactic head movement of the verbal complex to C, followed by category-specific linearization of C to the left. The third would be to propose that there is also morphological Raising, parallel to Lowering in the sense of Embick and Noyer (2001), but in the same direction as syntactic head movement. For our purposes here we can remain agnostic; the only important thing is that the verbal complex looks something like in (20), and that the clausal spine looks as in (21).

\(^{11}\)Note that the instance of contextual allomorphy shown in (19b) is underdetermined in terms of the discussion in the introduction; an analysis based solely on concatenation and one based on hierarchical adjacency would capture the same facts here.

\(^{12}\)Or, rather, as highlighted in Bobaljik and Harley to appear, two nodes are local enough if no maximal projection boundaries separate them.
With this basic introduction to Gaelic verbal morphology in mind, let us examine the core data in this paper: future suffix allomorphy.

1.2 The Allomorphy

The shown briefly in the introduction, the future suffix -idh\(^{13}\) shows three allomorphs: -idh [i], -eas [əs], and ∅. This allomorphy is apparently conditioned by the complementizer which occurs in the same verbal complex.

\[(22)\]

a. Gèarr -aidh an tìdsear am pàipear.
   cut -FUT the teacher the paper
   ‘The teacher will cut the paper.’

b. Cuin a\(^{NT}\) gheàrr- as an tìdsear am pàipear?
   when ‘a’ cut -FUT the teacher the paper
   ‘When will the teacher cut the paper?’

c. Cha\(^{NT}\) gheàrr- ∅ an tìdsear am pàipear.
   NEG cut-FUT the teacher the paper
   ‘The teacher will not cut the paper.’

\[(23)\]

a. Pòg -aidh mi mo luaidh a-nochd.
   kiss -FUT I my love tonight
   ‘I will kiss my love tonight.’

b. Ma\(^{NT}\) phòg -as mi mo luaidh a-nochd, bidh mi taht’.
   if.REAL kiss -FUT I my love tonight be.FUT I happy.
   ‘If I kiss my love tonight, I’ll be happy.’

c. Am\(^{NT}\) pòg -∅ thu do luaidh a-nochd?
   Q kiss -FUT you your love tonight
   ‘Will you kiss your love tonight?’

\(^{13}\)This pattern, or subparts of this pattern, are found throughout all of the modern Gaelic languages. Northern dialects of Irish show an alternation between -idh-∼-eas, and Manx shows ee-∼∅. But as far as I can tell, use of the -eas for in Irish is optional and only occurs in relative clauses, while the Manx alternation seems to be phonologically conditioned in a way Scottish Gaelic’s isn’t. We’ll only worry about the Scottish Gaelic cases here.
There are a few things worth observing in sets of sentences like (22-23). The first is that all of these allomorphs carry a future interpretation. All three can also carry the ‘simple present’ interpretation discussed in (10) above. This is shown in (24).\(^1\)

\[
(24) \quad \begin{align*}
\text{a. } & \text{Ith -idh mi brochan gach madainn.} \quad \text{eat -FUT I porridge every morning} \\
& 'I eat porridge every morning.' \\
\text{b. } & \text{Chan\(\text{\textsuperscript{G}}\) ith -∅ mi brochan gach madainn.} \quad \text{NEG eat -FUT I porridge every morning} \\
& 'I do not eat porridge every morning.' \\
\text{c. } & \text{am brochan a\textsuperscript{A} dh’ith -eas mi gach madainn.} \quad \text{the porridge ’a’ eat -FUT I every morning} \\
& 'the porridge I eat every morning'
\end{align*}
\]

Now that it is clear that all of these suffixes at least mean the same thing, which complementizers trigger which allomorph? The table is given below in (25).

\[
\begin{array}{|c|c|c|}
\hline
\text{-idh} & \text{-eas} & \text{-∅} \\
\hline
\text{∅} & a & an \\
\hline
\text{Root declaratives} & \text{Direct relative clauses} & \text{Indirect relative clauses} \\
\hline
\text{na} & \text{cha} & \\
\text{Free relatives} & \text{Root negation} & \\
\hline
\text{ma} & an & ə \\
\text{Realis conditionals} & \\
\hline
\text{nach} & \\
\text{Embedded negation} & \\
\hline
\text{gun} & \\
\text{Embedded declaratives} & \\
\hline
\text{mun} & \\
\text{‘before’} & \\
\hline
\text{mur(a)} & \\
\text{Negative conditionals} & \\
\hline
\text{nan} & \\
\text{Irrealis conditionals} & \\
\hline
\end{array}
\]

The important thing here is that the complementizers fall into classes along the same lines as they did with the distribution of do in (17). Specifically, the triggering complementizers take the ∅ allomorph, while the non-triggering complementizers occur with -eas.

(26) provides a summary of the differences thus far between the two classes of complementizers, which will be expanded in §3.

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\(^1\)Note that the orthographic ‘dh’ [\(\text{\textsuperscript{G}}\)] inserted before the verb in (24c) is totally regular. ‘dh’ [\(\text{\textsuperscript{G}}\)] is inserted when a vowel occurs in a lenition environment. The direct relative marker a causes lenition. This is not of interest to us here.
(26) Triggering and Non-Triggering Complementizers

<table>
<thead>
<tr>
<th></th>
<th>Triggering Complementizers (C₁)</th>
<th>Non-Triggering Complementizers (C²NT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occur with do?</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Which Future Allomorph?</td>
<td>∀</td>
<td>-eas</td>
</tr>
</tbody>
</table>

Below we will add more distinctive behaviors to the table in (26). But for now, before we pursue this morphological account, let us pause and review why we should not pursue a different kind of analysis.

2 Are We Sure It’s Morphology?

In this section I will sketch two competing potential analyses for these allomorphic alternations besides pure contextual allomorphy in the morphology. We will see that both of these accounts is unsatisfactory for different reasons. First, in §2.1 I show that the alternation between -idh~∅ is, despite first appearances, not phonologically optimizing or phonologically conditioned. This makes a phonology-based account unlikely. In §2.2 I will present a syntactic analysis of the alternation between -eas and ∅ inspired by the fine-grained featural distinctions between certain complementizers proposed in McCloskey (2002) for similar facts in Irish. But we will see that extraction in Scottish Gaelic is very different for its Irish corespondent, making an account which is built around these features, or through any other system which takes extraction to be the key factor, unlikely.

2.1 Phonology?

While the alternation between -idh~eas cannot be reducible anything obviously phonological, it may be that the alternation between -idh~∅ is. Additionally, this alternation does have phonological motivation historically\(^{15}\). But what would such a synchronic phonological account look like?

First, let us consider a simple case.

(27) caill -idh ∼ cha chaill -∅
    lose -FUT NEG lose -FUT
    [kʰaɪːl] ∼ [xa.xaɪːl]
    ’will lose ∼ will not lose’

If we think solely about these cases, it looks like maybe this allomorphy is phonologically optimizing in that it deletes what would be an unparsed syllable if we think that the footing is [(kʰaɪːl)] and [(xa.xaɪːl)] respectively. This account can be formalized using the system developed in Mascaró (2007) using a constraint like PARSE, which requires all syllables be parsed into feet.

\(^{15}\)This alternation between -idh~∅ is Scottish Gaelic’s reflex of the ’dependent/independent’ alternation. This alternation is incredibly old in the Gaelic languages, originating from the conjunct/absolute distinction in Old Irish (Thurneysen, 1946) and surviving, in one form or another, in all of Old Irish’s extant descendants. We will obviously not be concerned with the history here.

Additionally, here I use the term ’dependent/independent’ alternation for something different, but ultimately related to, its use in discussion of Old Irish. We will return to my use of ’dependent/independent alternation’ below in §3.
A Phonological Account of ‘-idh’~’∅’

\[
\begin{array}{|c|c|}
\hline
\text{[xa aɪl} \{i, \emptyset\}] & \text{PARSE} \\
\hline
a. /xa.xaɪl]/ & \\
\hline
b. /xa.xaɪl;i]/ & ‘!’ \\
\hline
c. /xa.xaɪl;i]/ & ‘!’ \\
\hline
\end{array}
\]

Such an account is logically consistent, but we have good reason not to pursue it further. First, we can be reasonably certain that the footing required for the phonological account to produce the correct winner, (’xa.xaɪl’) in (28a), is wrong. To see this, we need to examine how Gaelic stress works.

Stress in Scottish Gaelic is always initial\(^{16}\) (Green, 1997).

\[
\begin{array}{|l|l|l|}
\hline
(29) & (\sigma, \sigma) & (\sigma, \sigma) \\
\hline
a. gobhar & (\sigma, \sigma) & a. togalach \\
\text{’goat’} & (\sigma, \sigma) & ‘building’ \\
\hline
b. dorus & (\sigma, \sigma) & b. cuimhneachadh \\
\text{’door’} & (\sigma, \sigma) & ‘remembering’ \\
\hline
c. iosal & (\sigma, \sigma) & c. cudromach \\
\text{’low’} & (\sigma, \sigma) & ‘important’ \\
\hline
d. Uibhist & (\sigma, \sigma) & (\sigma, \sigma) \\
\text{’Uist’} & (\sigma, \sigma) & \\
\hline
e. cuimhnich & (\sigma, \sigma) & (\sigma, \sigma) \\
\text{’remember’} & (\sigma, \sigma) & \\
\hline
f. innis & (\sigma, \sigma) & (\sigma, \sigma) \\
\text{’tell’} & (\sigma, \sigma) & \\
\hline
\end{array}
\]

In (28-30), we see that multisyllabic words always have initial stress. Words longer than four syllables are very difficult to find, but we have no reason to believe that their stress patterns would be different.

\(^{16}\)There is a small handful of exception to this. They all involve what, historically, is the definite article.

\[\text{(i)}\]

\[
\begin{array}{l}
\text{a. a-mach} \\
[\sigma.a.n \text{ max}] \\
\text{’out’} \\
\text{b. a-màireach} \\
[\sigma.a.m ár]\text{ max} \\
\text{’tomorrow (the morrow)’} \\
\end{array}
\]

These are almost certainly different though. First, they are clearly marked in the orthography as being deviant. Second, the schwa which occurs in all of these forms behaves synchronically identically to how it would if it were the definitely article, as discussed below. We will not worry about these apparent exceptions here.
Function words, like prepositions or determiners, are never stressed. Instead, they are clitic on their associated content word.

(32) \( (\sigma.\sigma) \)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>bàta</td>
<td>a.</td>
</tr>
<tr>
<td>a.</td>
<td>(‘paː.hɪɔ)</td>
<td>(tɔ.go)( \rangle)ɔx</td>
</tr>
<tr>
<td>a.</td>
<td>‘boat’</td>
<td>‘my building’</td>
</tr>
<tr>
<td>b.</td>
<td>am bàta</td>
<td>b.</td>
</tr>
<tr>
<td>b.</td>
<td>(‘paː.hɪɔ)</td>
<td>mo.(‘hɔ.go)( \rangle)ɔx</td>
</tr>
<tr>
<td>b.</td>
<td>‘the boat’</td>
<td>‘my building’</td>
</tr>
<tr>
<td>c.</td>
<td>air a’ bhàta</td>
<td>c.</td>
</tr>
<tr>
<td>c.</td>
<td>(vɛ.ðɔ)(vaː.hɪɔ)</td>
<td>tro.mɔ.(tɔ.go)( \rangle)ɔx</td>
</tr>
<tr>
<td>c.</td>
<td>‘on the boat’</td>
<td>‘through my building’</td>
</tr>
</tbody>
</table>

(33) \( (\sigma.\sigma)\sigma \)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>leumadairean</td>
<td>a.</td>
</tr>
<tr>
<td>a.</td>
<td>(lɛ.mɔ)(dɛ.ðm)</td>
<td>(lɛ.mɔ)(dɛ.ðm)</td>
</tr>
<tr>
<td>a.</td>
<td>‘dophins’</td>
<td>‘dophins’</td>
</tr>
<tr>
<td>b.</td>
<td>mo thogalach</td>
<td>b.</td>
</tr>
<tr>
<td>b.</td>
<td>(‘hɔ.go)( \rangle)ɔx</td>
<td>ar.(lɛ.mɔ)(dɛ.ðm)</td>
</tr>
<tr>
<td>b.</td>
<td>‘my building’</td>
<td>‘our dolphins’</td>
</tr>
<tr>
<td>c.</td>
<td>tro mo thogalach</td>
<td>c.</td>
</tr>
<tr>
<td>c.</td>
<td>tro.mɔ.(tɔ.go)( \rangle)ɔx</td>
<td>le.ar.(lɛ.mɔ)(dɛ.ðm)</td>
</tr>
<tr>
<td>c.</td>
<td>‘through my building’</td>
<td>‘with our dolphins’</td>
</tr>
</tbody>
</table>

(34) \( (\sigma.\sigma)(\sigma.\sigma) \)

In (32-34) we see that no matter the size of the head noun, determiners and prepositions are clitic on it. Complementizers pattern with prepositions and determiners in that they are never stressed.

(35) a. cha’ do choisich
   xa.to(‘xɔ,jɪç)  ‘did not walk’

b. am’ bithinn
   ɔm(‘pi.in)i  ‘Would I be?’

c. gun’ do chuimhnich
   kɔn.ɔ(‘xɪ.niçi)  ‘that remembered’

d. cha’ chaill
   xa.(‘xâil)  ‘will not loose’

In (32-34) we see that no matter the size of the head noun, determiners and prepositions are clitic on it. Complementizers pattern with prepositions and determiners in that they are never stressed.

(36) dio -chuimhn -ich -idh ∼ cha’ dio -chuimhn -ich -∅
   un -memory -v -FUT NEG un -memory -v -FUT
   ['dɪ.i:xɪn].(nɪ.i.çi) ∼ [xa.(dɪ.i:xɪn).nɪ.içi]
   ‘will forget ∼ will not forget’

In (36), we see that the -idh-∅ allomorphy affects rather large verb stems, such as diochuimhnich ‘forget.’ Crucially, it does not produce a more optimal form; its result [xa.(dɪ.i:xɪn).nɪ.içi] has two unparsed syllables where the form without the allomorphy only has one, as shown in (37).

This already raises concern about a stray-erasure account such as that in (28).
There is another glaring problem with the stray-erasure account: the -idh-∅ alternation does not always produce phonologically optimal forms. Take for example (36).

(37) dio -chuimhn -ich -idh ∼ cha’ dio -chuimhn -ich -∅
   un -memory -v -FUT NEG un -memory -v -FUT
   ['dɪ.i:xɪn].(nɪ.i.çi) ∼ [xa.(dɪ.i:xɪn).nɪ.içi]
   ‘will forget ∼ will not forget’
If this allomorphy were phonologically optimizing with respect to syllable parsing, then the ungrammatical form in (37) should harmonically bound the attested form shown in (36) because it has one less violation of parse. But clearly this is not the case.

From this discussion, I conclude two things. First, the alternation between -idh~∅ is not phonologically conditioned. Second, it is not phonologically optimizing. So, while historically this alternation may have been phonologically motivated and phonologically optimizing, this does not seem to be the case in the modern language.

2.2 A Syntactic Account of -eas?

Another possible route could be that to say that these involve something about the syntax of extraction/A'-movement. To see how this would play out, let us think momentarily about Irish, whose relative clauses have been much better documented that Gaelic’s (although see Adger and Ramchand 2005, 2006).

First, Irish has three complementizers which mark finite, embedded, declarative clauses. The first we will look at is go, spelled gu before -r, which is equivalent roughly to English ‘that.’

(38) Dúirt siad gu -r ghoid na síogaí an ghirseach.
    say.PAST they C -r steal.PAST the.PL fairies the girl
    ‘They said that the fairies stole the girl.’

(38) shows how basic, finite declarative clauses work in Irish. First, the embedded clause is marked by the complementizer go. Note that go is a triggering complementizer in Irish, just like its Gaelic equivalent gu, and is required to take Irish’s equivalent of do, which is -r. Consider the Gaelic translation of (38) below in (39).

(39) Thuir ón gu -a do ghoid na sitheagan a’ chaileag.
    say.PAST they C DO steal.PAST the.PL fairies the girl
    ‘They said that the fairies stole the girl.’

Now, let us consider what happens when we extract from the most deeply embedded clause, starting with the Irish in (40).

(40) An ghirseach aÉ dúirt siad aÉ ghoid na síogaí ___.
    the girl aÉ say.PAST they aÉ steal.PAST the fairies
    ‘the girl that they said the fairies stole.’

Now, let us break (40) down. In this example, a DP an ghirseach ‘the girl’ has been extracted from the most deeply embedded clause. Via successively cyclicity, in order to each its position in the highest clause, the DP must move through each Spec,CP position. McCloskey (2002) argues that the change in complementizers from go to aÉ in the most deeply embedded clause marks this successive cyclic movement through its intermediate Spec,CP position.

Second, let us examine this aÉ a little more closely. As McCloskey points out, this element is actually just
pronounced a [a]. Importantly for us, this is a non-triggering complementizer, which can be seen in that it does not occur with -r.

Gaelic presents exactly the same pattern in this respect.

(41) A' chailleag aNT thuirt iad aNT ghoid na sitheagan ___.

the girl ‘a’ say.PAST they ‘a’ steal.PAST the fairies

‘the girl that they said the fairies stole.’

Importantly, in the Gaelic, this is the right environment for the -eas allomorph to be used. This can be seen if we put (41) into the future.

(42) a. Can -aidh iad gunr goid -∅ na sitheagan a’ chailleag.

say -FUT they c steal -FUT the.PL fairies the girl

‘They will say that the fairies will steal the girl.’

b. A’ chailleag aNT chan -as iad aNT ghoid -eas an sitheagan ___.

the girl ‘a’ say -FUT they ‘a’ steal -FUT the fairies

‘the girl who they will say the fairies will steal.’

(42a) shows the future version of (39), with no extraction. (42b) shows that when we exact through these clauses, similarly to how we did in (40-41), the complementizer which must be used, a, takes the -eas allomorph of the future suffix.

McCloskey (2002) analyzes the difference between a’ and go as featural differences on the same category, namely C, which relate to extraction. He proposes that a’-marked clauses, as they do not involve any movement, should have two features. The first is an [+EPP] feature, which drives the movement in the first place, and the second is an ‘[OP]’ feature. This [OP] feature exists to ensure that a’ s [EPP] feature be satisfied by raising an element undergoing operator/A’-movement, in this case the relativized constituent\(^\text{17}\). By contrast, go, which occurs when nothing is in Spec,CP and in clauses from which nothing has been extracted, does not have either of these features. This can be schematized in the table in (43).

(43)

<table>
<thead>
<tr>
<th>+OP</th>
<th>a’</th>
<th>[−EPP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>+EPP</td>
<td></td>
<td>[−EPP]</td>
</tr>
<tr>
<td>[−OP]</td>
<td></td>
<td>go</td>
</tr>
</tbody>
</table>

With this in mind, we can begin to see the starts of a syntactic account for the future allomorphy in Scottish Gaelic. Importantly, go, which is [−OP, −EPP] does not trigger -eas, but a, which is [+EPP, +OP] does take -eas. Thus, if we adopt this feature system for Scottish Gaelic C’s, then perhaps we can analyze the distribution of -eas and ⊥ in terms of contextual allomorphy to a feature relating to extraction, and not to purely morphological classes of complementizers.

McCloskey further argues that one more cell in this table exists in Irish: a complementizer which is [−OP], but still [+EPP]. This is what is present in Irish’s famous resumptive clauses. To see this, consider the examples in (44). The resumptive pronouns are italicized.

\(^\text{17}\)It doesn’t matter for our purposes whether this moving constituent is a silent operator or the actual head of the relative clause. The important thing is that something is moving from the embedded clause through Spec,CP.
(44) a. An ghirseach a\textsuperscript{N} -\textsubscript{R} chreid siad gu -\textsubscript{R} ghoid na siogáí.
the girl a\textsuperscript{N} -\textsubscript{R} believe\textsc{Past} they c -\textsubscript{R} steal\textsc{Past} the.pl fairies her
‘the girl that the fairies stole.’

b. An ghirseach a\textsuperscript{N} -\textsubscript{R} chreid siad gu -\textsubscript{R} chuir an buachaille cúta mór uirthi.
the girl a\textsuperscript{N} -\textsubscript{R} believe\textsc{Past} they c -\textsubscript{R} put\textsc{Past} the boy coat big on.her
‘the girl that they believe the boy put a big coat on’

c. An ghirseach a\textsuperscript{N} -\textsubscript{R} chreid siad gu -\textsubscript{R} fhan a máthair san ospideal.
the girl a\textsuperscript{N} -\textsubscript{R} believe\textsc{Past} they c -\textsubscript{R} stay\textsc{Past} her mother in.the hospital
‘the girl whose mother they thought started in the hospital’

Let us examine (44) in a little more detail. First, all of these sentences employ a resumptive pronoun where their equivalent in (40) had a gap. Also, the complementizers are different from (40). Here, the highest CP is marked with a\textsuperscript{N}, not a\textsuperscript{L}, and the intermediate CPs are marked with go\textsuperscript{18}. (44a) shows what is called ‘free choice resumption,’ which means that Irish freely allows direct objects to occur as either resumptive pronouns or using the gap strategy. (44b) demonstrates a resumptive pronoun in a PP. Note that Irish does not allow extraction from PPs; this resumptive strategy is the only way of expressing the English provided as a translation. (44c) shows a resumptive possessive pronoun. Again, Irish does not allow possessor extraction, and so this resumptive strategy is the language’s only option.

McCloskey presents extensive arguments for thinking that cases with resumption like (44) do not involve movement. Therefore, he analyzes a\textsuperscript{N} as being [+\textsc{EPP}], because it still requires something in its specifier, but [-\textsc{OP}], because it does not attract a moving constituent like a\textsuperscript{L}.

Thus we fill in our table in (43)\textsuperscript{19}.

\begin{tabular}{|c|c|}
\hline
\textbf{[+\textsc{EPP}]} & \textbf{[-\textsc{EPP}]} \\
\hline
\textbf{[+\textsc{OP}]} & a\textsuperscript{L} & - \\
\hline
\textbf{[-\textsc{OP}]} & a\textsuperscript{N} & go \\
\hline
\end{tabular}

Now let us turn our attention to Gaelic, as this language is very different from Irish in this respect. The goal here is not provide an analysis of Gaelic relative clauses, but instead to just show that a feature-based account with ties to the syntax of extraction will not work in this language.

Now, while Gaelic does have the equivalent of a\textsuperscript{L} and a\textsuperscript{N} in a and an, the distribution of an in Gaelic is very different from that of a\textsuperscript{N} in Irish.

\textsuperscript{18}Note that McCloskey (2002) reports examples like (i).

(i) an bhean a\textsuperscript{N} raibh mé ag súil a\textsuperscript{N} bhfaigninn uairí ó.
The woman a\textsuperscript{N} be\textsc{Past.Det} I hope\textsc{Prog} a\textsuperscript{N} get\textsc{Cond.Det}.1sg from.her it
‘the woman that I was hoping I would it from (her)’

The crucial thing about (i) is that the intermediate CP is marked a\textsuperscript{N}, not go. We’ll abstract away from these cases for the time being because they have no equivalent in Gaelic.

\textsuperscript{19}Note that the missing cell, a complementizer which is [-\textsc{EPP}] but [+\textsc{OP}] is logically possible but not attested in any of the Celtic languages. It would involve a C which must enter into a relationship with a \textit{wh}-element, but would leave that \textit{wh} in situ. As far as I know, no Celtic language allows \textit{wh}-in situ.
First, Gaelic lacks resumption of the Irish sort of (44a). This is shown in (46)\(^\text{20}\).

(46) *a’ chailleag an’ tuirt iad gun’ do ghoird na sitheagan.
    the girl ‘an’ say.PAST they c do steal the.PL fairies her
Intended: ‘the girl that they said the fairies stole.’

It also lacks the kind of possessor resumption Irish demonstrates. In fact, there does not seem to be any good way of extracting possessors in the language\(^\text{21}\).

(47) a. *?am balach a\(^\text{NT}\) bhi -os a mhàthair san ospadal
        the boy ‘a’ be -FUT his mother in.the.hospital
    Intended: ‘the boy whose mother will be in the hospital’

b. *am balach am’ bi -∅ a mhàthair san ospadal
        the boy ‘an’ be -FUT his mother in.the.hospital
    Intended: ‘the boy whose mother will be in the hospital’

c. Sin am balach. Tha a mhàthair san ospadal.
        that the boy be.PRES his mother in.the.hospital
    ‘That’s the boy. His mother’s in the hospital.’

(47a) and (47b) show that possessor resumption, no matter what the complementizer, is severely degraded. Additionally, since possessor extraction is banned in the language, speakers use circumlocutions such (47c).

So, what then is the distribution of an in Gaelic if it is not linked to resumption? It seems to be restricted to relative clauses headed by PPs, regardless of whether they derive via movement.

Gaelic has two ways for forming relative clauses from PPs. The choice is largely dialectal (Adger and Ramchand, 2006). The first choice involves a ‘quasi-resumptive’ as the object of the PP and a in all CPs (Adger and Ramchand, 2005).

(48) a’ chailleag a\(^\text{NT}\) chan -as iad a\(^\text{NT}\) bhruidhnn -eas e ris.
    the girl ‘a’ say -FUT they ‘a’ speak -FUT he with.him
    ‘the girl that they say he’ll speak to’

This is considered a ‘quasi-resumptive’ because, unlike in the Irish case, the object of the PP does not agree in gender with the head of the relative clause; cailleag ‘girl’ is a grammatically feminine noun, but the ‘resumptive’ at the foot of the relative clause is masculine. A feminine ‘resumptive’ is degraded.

(49) *?a’ chailleag a\(^\text{NT}\) chan -as iad a\(^\text{NT}\) bhruidhnn -eas e rithe.
    the girl ‘a’ say -FUT they ‘a’ speak -FUT he with.her
Intended: ‘the girl that they say he’ll speak to’

The second way of forming relative clauses from PPs involves heading the relative clause with a preposition

\(^{20}\)Changing the complementizers around does not ameliorate anything either. I do not reproduce all nine of these for reasons of space.

\(^{21}\)Adger and Ramchand (2006) report that some speakers may be coerced into judging examples like (47a) ‘acceptable.’

To call the reactions I’ve gotten from my speakers towards this example that it is ‘acceptable’ would be overly generous. The reactions I’ve gotten are much more in line with it being simply ungrammatical, things like ‘people would understand you, but I’d never say it’ or ‘it is alright I guess, but it doesn’t sound like the way we talk.’ One speaker even reported a potential generation gap, reporting that her father may say things like (47a). Either way, the empirical domain is far from settled, but everyone seems to be in agreement that (47b) is much worse than that (47a).
which is in a form which is conjugated as third singular and masculine. The first CP is headed by *an*, while any other CPs may be headed by either *a* or *gu*. Speakers show a slight preference for *gu*, but *a* is perfectly fine here as well. *an* in any intermediate CPs is ungrammatical.

(50) a. *a' chailleag ris anT tuirt thu guT robh thu a' bruidhinn.
    the girl with.him ’an’ say.PAST you c be.PAST.DEP you speak.NONFIN
    ’the girl you said you were talking to’

b. a' chailleag ris anT tuirt thu aNT bha thu a' bruidhinn.
    the girl with.him ’an’ say.PAST you ’a’ be.PAST you speak.NONFIN
    ’the girl you said you were talking to’

c. *a’ chailleag ris anT tuirt thu anT robh thu a’ bruidhinn.
    the girl with.him ’an’ say.PAST you ’an’ be.PAST.DEP you speak.NONFIN
    Intended: ’the girl you said you were talking to’

d. **a’ chailleag ris aNT tuirt thu guT robh thu a’ bruidhinn.
    the girl with.him ’a’ say.PAST you c be.PAST.DEP you speak.NONFIN
    Intended: ’the girl you said you were talking to’

Importantly, this pattern perfectly mirrors *wh*-extraction of *cà(ite) ‘where’. *an* is required immediately after the PP *cà ‘where’, just like after *ris ‘with him’ in (50a-b). Crucially, either *a* or *gu* may occur in intermediate clauses. Importantly, *an* is totally out.

(51) a. Cà anT tuirt iad aNT bhi -os a’ bhanais ___
    where ’an’ say.PAST they ’a’ be -FUT the wedding
    ’Where did they say the wedding will be?’

b. Cà anT tuirt iad gumT bi -∅ a’ bhanais ___
    where ’an’ say.PAST they c be -FUT the wedding
    ’Where did they say the wedding will be?’

c. *Cà anT tuirt iad amT bi -∅ a’ bhanais ___
    where ’an’ say.PAST they ’an’ be -FUT the wedding
    Intended: ’Where did they say the wedding will be?’

d. *Cà aNT tuirt iad aNT bhi -os a’ bhanais ___
    where ’a’ say.PAST they ’a’ be -FUT the wedding
    Intended: ’Where did they say the wedding will be?’

Crucially, the difference between *gu* and *a* here does not seem to have to do with extraction, unlike the Irish cases. In both (51a) and (51b), extraction occurs through the intermediate CP, but the *-eas* allomorph is not triggered with *gu*, even though both complementizers here seem to be in free variation.

Additionally, *an* really does seem to be restricted simply to relative clauses headed by PPs. For instance, *carson ‘why’ shows the exact same pattern as *cà ‘where’ in terms of how the intermediate clauses behave, but may not have *an* following it.

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22We will discuss in detail what is meant by the DEP gloss in §3.
23Speakers report the opposite preference here than they do for relative clauses like (50), but there is a confound in that *gu* in intermediate clauses here is a part of the written language, but *a* is preferred in the spoken language.
(52) a. Carson \(a^{NT}\) tha thu a’ smaoineachadh \(a^{NT}\) ghoid na sithichean an nighean ____?
why ‘a’ be.PRES you think.NONFIN ‘a’ steal.PAST the.PL fairies the girl
‘Why do you think the fairies stole the girl?’
b. Carson \(a^{NT}\) tha thu a’ smaoineachadh \(\text{gun}^T\) do ghoid na sithichean an nighean ____?
why ‘a’ be.PRES you think.NONFIN c PAST steal the.PL fairies the girl
‘Why do you think the fairies stole the girl?’
c. *Carson \(a^{NT}\) tha thu a’ smaoineachadh \(a^T\) do ghoid na sithichean an nighean ____?
why ‘a’ be.PRES you think.NONFIN ‘an’ PAST steal the.PL fairies the girl
Intended: ‘Why do you think the fairies stole the girl?’
d. *Carson \(a^T\) bheil thu a’ smaoineachadh \(a^T\) ghoid na sithichean an nighean ____?
why ‘an’ be.PRES.DEP you think.NONFIN ‘a’ steal.PAST the.PL fairies the girl
Intended: ‘Why do you think the fairies stole the girl?’

Now, what are we to make of this discussion? Let us say that we want to analyze Gaelic PP relatives (50) and the \(wh\)-cases in (51-52) as involving movement. Therefore, by a feature-based account such as that sketched above, the intermediate CPs in the (a-b) pairs in (50-52) must be featurally identical in terms of the features McCloskey sketches for Irish in (45), as they both allow extraction through their specifiers. But we see that the -eas allomorph is not triggered in any of the intermediate clauses that have \(gu\) instead of \(a\). Furthermore, -eas in these cases is totally out, resulting in uninterpretable word salad.

(53) a. *a’ chailleag ris \(an^T\) can -\(\emptyset\) thu \(\text{gun}^T\) bi -\(\text{os}\) tu a’ bruiddhinn.
the girl with.him ‘an’ say.PAST you c be.PAST.DEP you speak.NONFIN
Intended: ‘The girl you said you were talking to’
b. **Cá an\(^T\) tuirt iad \(\text{gun}^T\) bi -\(\text{os}\) a’ bhanais ____
where ‘an’ say.PAST they c be -FUT the wedding
Intended: ‘Where did they say the wedding will be?’
c. **Carson \(a^{NT}\) tha thu a’ smaoineachadh \(\text{gun}^T\) goid -\(\text{eas}\) na sithichean an nighean ____?
why ‘a’ be.PRES you think.NONFIN c steal -FUT the.PL fairies the girl
Intended: ‘Why do you think the fairies stole the girl?’

The parallel use of the \(\emptyset\) allomorph after \(a\) is equally ungrammatical.

(54) a. *a’ chailleag ris \(an^T\) can -\(\emptyset\) thu \(a^{NT}\) bhi -\(\emptyset\) thu a’ bruiddhinn.
the girl with.him ‘an’ say.PAST you ‘a’ be -FUT you speak.NONFIN
Intended: ‘The girl you said you were talking to’
b. **Cá an\(^T\) tuirt iad \(a^{NT}\) bhi -\(\emptyset\) a’ bhanais ____
where ‘an’ say.PAST they ‘a’ be -FUT the wedding
Intended: ‘Where did they say the wedding will be?’
c. **Carson \(a^{NT}\) tha thu a’ smaoineachadh \(a^{NT}\) goid -\(\emptyset\) na sithichean an nighean ____?
why ‘a’ be.PRES you think.NONFIN ‘a’ steal -FUT the.PL fairies the girl
Intended: ‘Why do you think the fairies stole the girl?’

This is important because, in terms of the features which motivate extraction, \(gu\) and \(a\) must be identical in these examples because they drive identical extraction patterns. But they do not trigger the same allomorphy. Therefore, the allomorphy must not be linked to the syntax of extraction, or the features relating to it.

There is further reason to be suspicious of a syntactic account of this allomorphy. This is because -eas
occurs with the complementizer *ma*, which marks realis conditionals and does not seem to involve any movement/relative clause syntax in any way.

(55) **Ma**̃̃ *dichuimhnich* -eas tu an t-usige-beatha, chã̃ bhi -∅ mi taght’.
    if:real forget -FUT you the whisky NEG be -FUT I happy
    ‘If you forget the whisky, I won’t be happy.’

Even if these, or conditionals in general, did involve movement/relative clause syntax, this should be extendable to the irrealis conditionals, predicting that -eas should occur with irrealis conditionals identically as with realis ones. This prediction does not pan out.

(56) **Nan**̃ *cůir* (*-eas*) thu . . .
    if:irreal put -FUT you
    ‘If it were the case that you put . . .’

Therefore, movement-based or relative clause syntax cannot be what underlies the allomorphic patterns under investigation here. This is because there is no isolable syntactic environment which licenses certain allomorphs but not others. So, if a syntactic environment cannot be isolated, the phenomenon must not be syntactic.

2.3 **Interim Summary**

In this section I presented two potential non-morphological accounts for the distribution of the future allomorphs. We saw that both ran into the same problem. Both could account for a subset of the data, but not all of it. The phonological account could not handle that the alternation between -idh and ∅ because it is not always phonologically optimizing, even producing phonologically worse forms in places.

The syntactic account presented was built to handle the pattern because it, at first blush, mirrors Irish’s famous extraction patterns. Specifically, the Gaelic equivalents the complementizers which McCloskey argues for Irish do not involve movement (*go* and *a*) both trigger ∅, while the Gaelic equivalent of the complementizer which has been argued to involve movement in Irish (*a*) triggers -eas. But we saw that Gaelic’s extraction patterns are much messier than Irish’s, and Gaelic seems to freely allow extraction through *gu*-marked clauses just as easily as through *a*-marked clauses. Therefore, the features associated with movement in Irish cannot be associated with certain allomorphs in Gaelic.

With this discussion in mind, let us consider an account which is sufficiently flexible to capture all the data: a morphological analysis.

3 **A Morphological Analysis**

Now that we have seen that phonological or syntactic accounts cannot handle the allomorphy Gaelic exhibits, let us pursue a purely morphological account.

First, recall the two ‘classes’ of complementizers which I presented above in §1: the **triggering complementizers** and the **non-triggering complementizers**. The table of these elements is reproduced below in (57).
The Classes of Gaelic Complementizers

<table>
<thead>
<tr>
<th>Non-triggering Complementizers</th>
<th>Triggering Complementizers</th>
</tr>
</thead>
<tbody>
<tr>
<td>a ‘a’</td>
<td>an ‘an’</td>
</tr>
<tr>
<td>na Free relatives</td>
<td>cha Root negation</td>
</tr>
<tr>
<td>ma Realis conditionals</td>
<td>an Q</td>
</tr>
<tr>
<td>nach Embedded negation</td>
<td>gun Embedded declaratives</td>
</tr>
<tr>
<td>mun ‘before’</td>
<td>mur(a) Negative conditionals</td>
</tr>
</tbody>
</table>
| nan Irrealis conditionals    | 24

Additionally, recall that these two sets of complementizers have particular properties.

Triggering and Non-Triggering Complementizers

<table>
<thead>
<tr>
<th>Occur with do?</th>
<th>Triggering Complementizers (C*)</th>
<th>Non-Triggering Complementizers (CNT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>-Ø</td>
<td>×</td>
</tr>
</tbody>
</table>

Now, there is one more morphologically important property of these classes of complementizers. To see this, we need to consider a form of verbal suppletion which I term ‘the dependent/independent alternation.’ As far as I know, very little morphological work exists on the dependent/independent alternation in Scottish Gaelic, but it is quite well studied and documented in Irish (Oda, 2012; Ostrove, 2015a). Nicely for us, this aspect of the two languages is identical.

So, what is this dependent/independent alternation? I define it as follows in (59).

Dependent/Independent Alternation: A pattern of verbal suppletion which is triggered by complementizers which are in the same verbal complex as the verb. The suppletive form is thought to be ‘dependent’ on the complementizer, whence the name.

The dependent/independent alternation does not occur in all verbs, but rather, as is typical for suppletive paradigms, with the most common verbs in the language. The verbs which undergo the alternation in modern

24 Although it is mentioned, though not analyzed in depth, in Bonet and Harbour (2012).

25 Note that this definition differs from the classical definition of the dependent/independent alternation which is common in the historical and philological literature on the Celtic languages. There, it refers, largely, to a set of alternations which take place in the verbal complex due to certain phonological properties introduced by certain complementizers. Here I use it to refer only to the pattern of suppletion exhibited by the modern Celtic languages.
Scottish Gaelic are given below in (60).

(60) The Independent/Dependent Alternation in Modern Scottish Gaelic

<table>
<thead>
<tr>
<th>Citation Form</th>
<th>Past Tense Alternations</th>
<th>Dependent Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>bi 'be'</td>
<td>*bha</td>
<td>*robh</td>
</tr>
<tr>
<td>[pι]</td>
<td>[va]</td>
<td>[ro]</td>
</tr>
<tr>
<td>rach 'go'</td>
<td>*chaidh</td>
<td>*deach</td>
</tr>
<tr>
<td>[rax]</td>
<td>[xai]</td>
<td>[d3ax]</td>
</tr>
<tr>
<td>faic `see'</td>
<td>*chunnaic</td>
<td>*faca</td>
</tr>
<tr>
<td>[faiχkι]</td>
<td>[xu.nukι]</td>
<td>[fa.xka]</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>d`ean 'do, make'</td>
<td>*ni</td>
<td>*d`ean</td>
</tr>
<tr>
<td>[d3ι.οn]</td>
<td>[nιi:]</td>
<td>[d3ι.οn]</td>
</tr>
<tr>
<td>faigh 'get, find'</td>
<td>*gheibh</td>
<td>faigh</td>
</tr>
<tr>
<td>[fai]</td>
<td>[jev] or [jo]</td>
<td>[fai]</td>
</tr>
<tr>
<td>abair 'say'</td>
<td>*their</td>
<td>abair</td>
</tr>
<tr>
<td>[apirι]</td>
<td>[he:ρι]</td>
<td>[apirι]</td>
</tr>
<tr>
<td>toir 'give, take'</td>
<td>*bheir</td>
<td>toir</td>
</tr>
<tr>
<td>[ho:ρι]</td>
<td>[verι]</td>
<td>[t4oρι]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Citation Form</th>
<th>Present Tense Alternations</th>
<th>Dependent Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>bi 'be'</td>
<td>*tha</td>
<td>*bheil/eil</td>
</tr>
<tr>
<td>[pι]</td>
<td>[ha]</td>
<td>[velι]/[elι]</td>
</tr>
</tbody>
</table>

In the table in (60), we see the verbs in modern Scottish Gaelic which undergo the dependent/independent alternation. As mentioned above, this alternation is suppletive; there is no way in to get from either the dependent form to the independent form or vice versa in the regular phonology of the language.

As stated in (59), the dependent forms are triggered by complementizers. But which ones? Unsurprising, it is the triggering complementizers which trigger the dependent form. To see this, consider (61).

(61) a. Cha₇ d`ean mi e.  
    "NEG do.FUT.DEP I it  
    'I won't do it.'

b. *Cha₇ ni mi e.  
    "NEG do.FUT.INDEP I it  
    Intended: 'I won't do it.'

c. Ni mi e.  
    "do.FUT.INDEP I it  
    'I will do it.'

d. *D`ean mi e.  
    "do.FUT.DEP I it  
    Intended: 'I will do it.'
First, let us consider the pair in (61a-b). In (61a) we see that when a triggering complementizer is used, in this case the root negative complementizer cha, the dependent form déan is required. This is because the verb is in the same verbal complex as the triggering complementizer, requiring the dependent form to be use. This is what explains why (61b) is ungrammatical. Here, the independent form ni is used even though the verb occurs in the same verb complex as a triggering complementizer, which should require the dependent form.

(61c-d) show the opposite pattern from (61a-b). Here, the independent form is required (61c), because there is no triggering complementizer to ‘activate’ the dependent form. Therefore, use of the dependent form (61d) leads to ungrammaticality.

As expected, use of a non-triggering complementizer likewise blocks the use of a dependent form.26

(62) a. Ma bheir thu do lámh dhomh, danns -aídh mi leat.
   if.real give.fut.indep you your hand to.me dance fut I with.you
   'If you give me your hand I will dance with you.'

b. *Ma thoir thu do lámh dhomh, danns -aídh mi leat.
   if.real give.fut.dep you your hand to.me dance fut I with.you
   Intended: 'If you give me your hand I will dance with you.'

(62) shows us the expected pattern. When a non-triggering complementizer is used, the dependent form may not be used (62b). Instead, the independent form must be used (62a).

Without going into detail about how exactly the dependent/independent alternation works, it is clear that it will have to reference the classes of complementizers we have laid out throughout this paper. Informally, this would look something like (63).

(63) a. V \leftrightarrow Independent
b. V \leftrightarrow Dependent / C

These informal Vocabulary Entries in (63) do two things. First, the independent form in (63a) is the ‘Elsewhere’ allomorph, occurring whenever the more specific environment in (63b) is not met. (63b) encodes the observation made above, namely that dependent forms only occur after triggering complementizers.

But the important thing about the dependent/independent alternation for us is that this is another case in which the class of the complementizer is morphologically relevant. Therefore, it should not be surprising that the morphology uses these classes of complementizers in other places in the grammar. This is precisely what I propose is happening in terms of future allomorph selection.

We can complete our table of the defining properties of each class of complementizer as in (64).

(64) Triggering and Non-Triggering Complementizers

<table>
<thead>
<tr>
<th></th>
<th>Triggering Complementizers (C↑)</th>
<th>Non-Triggering Complementizers (C↑)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occur with do?</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Which Future Allomorph?</td>
<td>-∅</td>
<td>-eas</td>
</tr>
<tr>
<td>Trigger Dependent Form?</td>
<td>✓</td>
<td>×</td>
</tr>
</tbody>
</table>

Once we accept the morphological reality of these classes of complementizers, writing Vocabulary Entries for the different future allomorphs becomes quite easy to do. To see this, consider the Vocabulary Entries in (65).

26The observant reader will wonder why the verb in (62a) does not end in -eas; it is morphologically future and follows a non-triggering complementizer. We will discuss this shortly.
The Vocabulary Entries in (65) capture the generalization which I have been alluding to throughout this paper: the choice of allomorph of the future suffix depends solely on the morphological class of the complementizer which it forms a verbal complex with.

But are we sure that all of these suffixes, -idh, ∅, and -eas are all allomorphs of the same head? We could perhaps imagine analyses where they are not, and instead reflect deeper syntactic differences between the different constructions in which the different complementizers are used.

I argue that such an approach would be fundamentally misguided. To see this, we need to examine ‘irregular’ verbs. These verbs are ‘irregular’ because they do not take the -idh suffix in the morphological future. There are two groups of these irregular verbs.

The first we have already looked at: verbs which undergo the dependent/independent alteration. As the reader may have noticed in the discussion above, these verbs never occur with -idh.

(66) Bheir (*-idh) mi mo l`amh dhut.
    give.fut -fut I my hand to.you
    ‘I will give you my hand.’

Instead, it is probably best to consider these forms as portmanteaux, because forms like bheir ‘will take’ are specified as morphologically future despite the absence of -idh.

Now, these verbs are also banned from taking -eas, even when they occur after non-triggering complementizers.

(67) a. MaNT bheir (*-eas) tu do l`amh dhomh, danns -aidh mi leat.
    if.real give.fut -fut you your hand to.me dance -fut I with.you
    ‘If you give me your hand I’ll dance with you.’

b. an t-uisge-beatha aNT bheir (*-eas) mi dhut
    the whisky ‘a’ give.fut -fut I to.you
    ‘the whisky that I will give you’

This pattern is easy to account for if the suffixes -idh, -eas, and ∅ are treated as allomorphs of the same head. If these dependent forms are portmanteaux, they will contain the node T, blocking Insertion of this node. This portmanteau account is shown explicitly in (68).

(68) a. \(<\sqrt{\text{Give}}, v, T: \text{FUT} > \Leftrightarrow [\text{VER}^j] (\text{bheir})\) \hspace{1cm} \text{Independent Form}

b. \(<\sqrt{\text{Give}}, v, T: \text{FUT} > \Leftrightarrow [t^h\text{OR}^i] (\text{toir}) / C^T \) \hspace{1cm} \text{Dependent Form}

By whatever principle of grammar requires portmanteaux to be used when they are available, the forms in (68) will always out-compete the less-specific Vocabulary Entries in (65). This blocks Insertion of T in these cases. This account straightforwardly explains why these verbs do not allow -eas. This is because I have argued that -eas expones future T. Crucially, these portmanteaux contain this node. This blocks its separate Insertion\(^{27}\).

The second class of irregular verbs which are important to us here is very small, with only two members. They are the future forms of the verbs \(\sqrt{\text{GO}}, \text{th`eid}\) and \(\sqrt{\text{COME}} \text{thig}\). These verbs are irregular in that they do

\(^{27}\)Note that a portmanteau-analysis of dependent forms predicts that these verbs should not occur with do in the past tense by this same logic, as I have argued that do expones T as well. This prediction bears out.
not take -idh, but they do not undergo the dependent/independent alternation. Importantly, these verbs cannot occur with -eas either. All of this is shown in (69) and (70) respectively.

(69) **thèid** ‘will go’
   a. Thèid (**-idh**) mi dhachaigh.
      go.FUT -FUT I home
      ‘I will go home.’
   b. Ma**r** thèid (**-eas**) mi dhachaigh...
      if.REAL go.FUT -FUT I home
      ‘If I go home...’

(70) **thig** ‘will come’
   a. Thig (**-idh**) mi dhachaigh.
      come.FUT FUT I home
      ‘I will come home.’
   b. Ma**r** thig (**-eas**) mi dhachaigh...
      if.REAL come.FUT -FUT I home
      ‘If I come home...’

(69) and (70) show that the claim made above to be true: when -idh does not occur, -eas cannot occur. This falls out straightforwardly if these two morphs, -idh and -eas, are allomorphs which expone the same head. Thus, we can account for these facts the same way that we handled the dependent/independent alternation, by treating forms like thèid ‘will go’ and thig ‘will come’ as portmanteaux which contain T. This is shown in (71).

(71) a. $\langle \sqrt{\text{GO}}, v, T: \text{FUT} > \equiv [\text{he:d}] $ thèid
   b. $\langle \sqrt{\text{COME}}, v, T: \text{FUT} > \equiv [\text{hig}] $ thig

Thus, the technology of portmanteaux developed for the dependent/independent alternation is applicable here as well. The only difference in this system between the verbs in (71) and verbs which undergo the dependent/independent alternation is that the latter have contextual allomorphs while the former do not.

But importantly, all of the distributional facts shown in this section can easily be understood if we analyze -eas and -idh as allomorphs of the same node, namely T. Therefore, I will consider the Vocabulary Entries for these items, as well as the third allomorph $\emptyset$ shown in (65), and reproduced in (72), to be necessary for understanding the distributions of these suffixes.

(72) a. $< T: \text{FUT} > \Leftrightarrow [i] (-idh)$
   b. $< T: \text{FUT} > \Leftrightarrow [\text{\ddot{a}s}] (-eas) / C^{NT}$
   c. $< T: \text{FUT} > \Leftrightarrow [\emptyset] / C^{r}$

(i) An’ (*do) deach thu dhachaigh?
   Q PAST go.PAST you home
   ‘Did you go home?’

I take this as further confirmation that the account presented here is on the right track.
4 Contextual Allomorphy, Locality, and Linear Adjacency

While the Vocabulary Entries in (72) above capture the Scottish Gaelic facts, they are ruled out under certain theories of locality, as discussed in the introduction. Here we will specifically examine the system in Embick (2010)\(^\text{28}\).

Embick proposes that in order for contextual allomorphy to be triggered, the two nodes must be concatenated. This is shown in (73), reproduced from (4) in the introduction.

\[
\begin{align*}
(73) & \quad \alpha \overset{\dddot{\_}}{\beta} \overset{\dddot{\_}}{\gamma} \\
& \quad \text{Contextual Allomorphy: } \checkmark \\
(73) & \quad \beta \overset{\dddot{\_}}{\gamma} \\
& \quad \text{Contextual Allomorphy: } \checkmark \\
(73) & \quad \alpha \overset{\dddot{\_}}{\gamma} \\
& \quad \text{Contextual Allomorphy: } \times
\end{align*}
\]

(73) schematizes the claim made in Embick (2010): contextual allomorphy is only possible when two nodes are concatenated. When the two nodes are not concatenated, as in (73c), contextual allomorphy is not possible.

This clearly cannot handle the Scottish Gaelic facts discussed here. To see this, let us remember how the nodes which comprise the verbal complex are concatenated\(^\text{29}\).

\[
(74) \quad \text{Scottish Gaelic Verbal Complex: } C \overset{\text{\textasciitilde}}{\sqrt{\text{ROOT}}} \overset{\text{\textasciitilde}}{v} \overset{\text{\textasciitilde}}{T}
\]

Thus, Embick predicts only the following contextual allomorphic relations to be possible.

\[
\begin{align*}
(75) & \quad C \overset{\text{\textasciitilde}}{\sqrt{\text{ROOT}}} v \\
& \quad \text{Contextual Allomorphy: } \checkmark \\
(75) & \quad \sqrt{\text{ROOT}} \overset{\text{\textasciitilde}}{v} T \\
& \quad \text{Contextual Allomorphy: } \times
\end{align*}
\]

Importantly for us, Embick’s system rules out C from triggering contextual allomorphy on T, as they are not linearly adjacent.

But I hope to have shown here that we do want to allow (75c) into our system in order to capture the distribution of the future suffix allomorphs. This is because, as I’ve argued extensively, the best way to capture this distribution is to appeal to the independently necessary morphological classes of complementizers present in the language. Thus, we want to allow Vocabulary Entries such as those in (72), reproduced below in (76), as possible Vocabulary Entries.

\[
\begin{align*}
(76) & \quad \alpha \overset{\dddot{\_}}{\beta} \overset{\dddot{\_}}{\gamma} \\
& \quad \text{Contextual Allomorphy: } \checkmark \\
(76) & \quad \beta \overset{\dddot{\_}}{\gamma} \\
& \quad \text{Contextual Allomorphy: } \checkmark \\
(76) & \quad \alpha \overset{\dddot{\_}}{\gamma} \\
& \quad \text{Contextual Allomorphy: } \times
\end{align*}
\]

More specifically, in order for these Vocabulary Entries to be possible, we need to allow non-linearly adjacent nodes to be able to trigger contextual allomorphy on each other.

But once we allow this, as the empirical reality of Scottish Gaelic strongly suggests we need to, how do we constrain it? Nicely, the Scottish Gaelic facts suggest that we can do so in the maximally restrictive way. All we

---

\(^{28}\)Although he is certainly not the only one to make this claim. We focus on his proposal specifically because it is recent and is one of the most well-articulated available.

\(^{29}\)Specifically in the morphological future cases we are concerned with here.
need to do is claim that contextual allomorphy is possible between *hierarchically* adjacent nodes, not linearly adjacent nodes. This predicts that, given a syntactic structure such as that for Scottish Gaelic, reproduced below in (77), only the allomorphic interactions in (78) should be possible.

\[(77)\]
\[
\begin{align*}
& \text{CP} \\
& \text{C} \quad \text{TP} \\
& \text{T} \quad \text{vP} \\
& \text{v} \quad \sqrt{\text{ROOT}}
\end{align*}
\]

Locality restrictions such as these are appealing for two reasons. First, they allow us to handle the Scottish Gaelic facts without giving up on locality entirely. This is because the two nodes involved, C and T, are maximally local in one respect, hierarchically, even if they are not local linearly. Second, by adopting these locality conditions we can reanalyze this apparently non-local interaction as one which is, in fact, very local, albeit not linearly.

How does this proposal fare against the other cases of non-linearly conditioned contextual allomorphy put forward in the literature? It turns out that it does quite well. First, let us look at the Itzaj Mayan facts examined in Radkevich (2011). Radkevich argues certain morphemes in this language, termed the ‘status suffixes’ show contextual allomorphy to Aspect. The status suffixes are glossed as ‘ss’, and are bolded in the following examples, along with aspect.

\[(79)\]
\[
\begin{align*}
& \text{a. k- } \text{u- } \text{sätz’- } \text{ik} \\
& \text{INC 3A stretch ss} \\
& \text{‘S/he stretches it.’} \\
& \text{b. t- } \text{u- } \text{sätz’- } \text{aj} \\
& \text{COM 3A stretch ss} \\
& \text{‘S/he stretched it.’}
\end{align*}
\]

Building off previous literature on Mayan language, Radkevich proposes that these status suffixes are the realization of \(v\). Additionally, she proposes the following syntax for Itzaj Mayan.

---

30This proposal is similar to that made in Radkevich (2011), but does not make reference to the notion of a ‘cycle.’ I do this to be maximally cautious, as the Gaelic facts do not seem to contradict this, as, no matter how one wants to define morphological cycles, C must be in the same one as the following verbal root, as evidenced by the dependent/independent alternation. This is because, presumably, in order for contextual allomorphy to be triggered, two nodes must be in the same cycle. Additionally, this possibility is suggested in Bonet and Harbour (2012), but is not pursued due to a dearth of empirical evidence available to the authors. Hopefully this work can help to fill this gap in the literature.

31Note that this makes the dependent/independent alternation if we restrict Vocabulary Insertion to terminal nodes. But the dependent/independent alternation facts from Scottish Gaelic conform to the Span Adjacency Hypothesis put forward in Merchant (2015). So all is not lost if we adopt Merchant’s proposal here.
Using this syntax, and assuming that these status suffixes expone v, then these cases are not counterexamples to the proposal made here that structural adjacency is key. This is because, as is clear in (80), Asp and v are structurally adjacent, even though, as can be seen in (79), they do not end up linearly adjacent.

The second case for non-linearly conditioned contextual allomorphy is reported in Bobaljik (2000) from Itelmen. Additionally, these cases can largely be accounted for by the system developed here. Without getting bogged down in the incredibly intricate Itelmen facts, Bobaljik observes the following.

- Object suffixes show allomorphy conditioned by subject prefixes.
- ‘Class suffixes’ show allomorphy for both the subject and object.

Furthermore, Bobaljik proposes the following syntactic structure for the Itelmen verb.

If Bobaljik is on the right track with this structure, then we can straightforwardly account for the first pattern of allomorphy, namely between object suffixes and subject prefixes. This is because these two positions, B and A respectively, are hierarchically adjacent, even though they are linearized at opposite peripheries of the verbal complex.

The second pattern of allomorphy Bobaljik discusses is a bit trickier, that of the ‘class suffixes,’ which occupy position C in Bobaljik’s structure. This is because they apparently show sensitivity to the features of the subject, in A, as well as to the object in B. A and C are not hierarchically adjacent, so it appears as though we have a problem.

But all is not lost. In the environments provided by Bobaljik for the different allomorphs of the Class Suffixes, Bobaljik fails to observe that all of them involve a third person object. This is crucial, as third person objects are always encoded with special suffix forms in B, which expone both the features of the object and of the subject. If we take this to be significant, then it is the case that only elements in B can trigger allomorphy on C, which is what the account here predicts.
Thus, the two other cases of non-linearly conditioned contextual allomorphy which I am aware of, that of Itzaj Mayan (Radkevich, 2011) and Itelmen (Bobaljik, 2000) can be accounted for using the analysis presented here.

5 Conclusion

In this paper I argued for a few things. First, I argued that the suffixes -idh, -eas, and ∅ in Scottish Gaelic all allomorphs of the same node, namely T[fur]. Furthermore, I argued that the distribution of these allomorphs is contextually determined by the morphological ‘class’ of the complementizer it occurs in the same verbal complex with.

Second, I argued that, if the first argument is successful, we need to abandon a linearly-adjacency requirement between two nodes in order for contextual allomorphy to be triggered, contra Embick (2010), among many others. But I argued that locality is still present on contextual allomorphy, but instead of linear-adjacency being the defining notion, hierarchical adjacency is what is important. By making this move, we can reduce the apparently non-local cases of contextual allomorphy reported here and elsewhere in the literature (Radkevich, 2011; Bobaljik, 2000) to this same hyperlocal relation between a head and its complement.

A few open questions remain though. The first is what exact these ‘classes’ of complementizers in Scottish Gaelic are. To my knowledge, there is no syntactic difference which can explain the division, and there do not seem to be any featural similarities among members of a given class. Therefore, ‘class’ information for complementizers should not be present in the syntax. If this is true, then class information must be a property of Vocabulary Entries, as opposed to being inherent on certain C’s. This is a problem though if we think, following Bobaljik (2000), that Vocabulary Insertion is cyclic and starts at the most deeply embedded node. This would require us to Insert C last, and therefore class membership should not be available when more deeply embedded nodes, such as T[fur] are undergoing Insertion.

But this is only a problem if we are convinced that there is no featural unity in the different classes of complementizers. If one can be determined, then we do not have this problem. This is because class membership would be an emergent property determined by the presence or absence of a particular feature on C. But importantly for us, even if such an account were proposed, the non-adjacency point made here would still be valid, as this feature would be a part of a node (C) which is non-adjacent to the undergoer of the allomorphy (T[fur]) in this case.

Another remaining issue is one of typology. Why should such cases of non-linearly conditioned contextual allomorphy be so hard to find? The answer may be that the complex heads in which it has been reported (the verbal complexes of Scottish Gaelic, Itelmen, and Itzaj Mayan) do not fully obey the Mirror Principle. Thus, instead of a lack of attested cases of non-linearly conditioned contextual allomorphy, what we actually have is a lack of attested violations of the Mirror Principle. We can therefore reframe this issue in the following way: ‘Why is the Mirror Principle so robust cross-linguistically?’ Answering this question is beyond the scope of this paper, but seems to be where the answer to the typological problem leads.

With these questions in mind, let us return to our original question in (1): ‘How close do elements need to be in order for contextual allomorphy to be triggered?’ Here we answered this question in a way which did not make reference to linear adjacency, but instead to hierarchical adjacency by adopting the locality condition in (82).

(82) **Contextual Allomorphy Locality Requirement**: In order for a node α to trigger allomorphy on a node β, β must be the head of α’s complement.

(82) allows us to account for cases of non-linearly conditioned contextual allomorphy such as those exhibited
in Scottish Gaelic, Itzaj Mayan, and Itelmen, while still imposing maximally restrictive conditions on contextual allomorphy.

But of course, there are many instances of contextual allomorphy which have not received attention in the morphological literature, and therefore any restriction on locality is contingent on the empirical landscape, which is still emerging. But hopefully I have shown that at least some allomorphic alternations are not linearly conditioned, but can still be handled in a maximally local way.
References


