

THE MORPHOSYNTAX OF IRISH AGREEMENT*

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Introduction

This paper examines the complementary distribution between agreement and pronouns in Modern Irish. I demonstrate that the Irish agreement patterns are crucially different from those found in more well-studied *pro*-drop languages, and thus require a different explanation. One explanation previously proposed, that pronouns undergo incorporation in Irish, is shown to be problematic on empirical grounds. Instead of an incorporation-based analysis, I propose an agreement-based analysis, couched in the framework of Distributed Morphology. The analysis requires two modifications to this morphological framework. First, the morphology must operate top-down, instead of bottom-up as previously assumed. Second, the operation of Vocabulary insertion must be clarified, so that morpho-syntactic features unrealized by a Vocabulary item are deleted. Finally, I consider the implications of the Irish data for lexicalist theories of morphology, demonstrating that lexicalist theories need to posit powerful mechanisms of trans-derivational comparison in order to account for the Irish patterns, and that these mechanisms undergenerate. Therefore, the Irish data are concluded to constitute an argument for a post-syntactic morphological component.

1 The Irish Data

In order to understand the discussion of Irish agreement in the following sections, some familiarity with the framework of Distributed Morphology being assumed will be necessary. Thus, in this section, I briefly outline the relevant aspects of this morphological framework.

Distributed Morphology explicitly denies the Lexicalist Hypothesis, positing an autonomous level of morphology (henceforth Morphological Structure, or MS) that operates after the syntax and moderates between the syntactic and phonological modules of the grammar. The framework adopts a late-insertion model, in which syntactico-semantic features occupy

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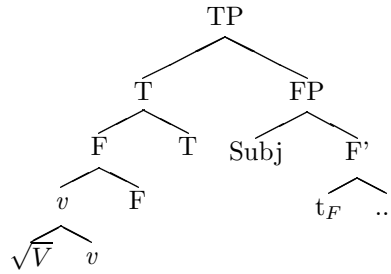
(indeed, define) the X^0 positions of syntactic structure until *Vocabulary Insertion* at MS. During vocabulary insertion, *Vocabulary Items* consisting of phonological and morphological features compete for insertion into the morphemic slots,¹ according to the Subset Principle, defined below.²

(1) *The Subset Principle* (Halle 1997)³

The morphological exponent of a Vocabulary item is inserted into a morpheme in the terminal string if the item matches all or a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the Vocabulary item contains features not present in the morpheme. Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen.

Since the morphology operates on the terminal nodes of a syntactic tree, it is important to know the syntactic structure of the language under consideration. (2) illustrates the syntactic structure of Irish verbal clauses I assume, where \sqrt{V} represents the root, here governed by v and so realized as a verb. See McCloskey (1996a,b) for extensive arguments that the verb raises to T and that the subject raises to the specifier of a projection between TP and the verb phrase. I have chosen to refer to this projection simply as FP.

(2) *The Syntactic Structure of Irish*



¹On a terminological note, a *morpheme* is understood to comprise a cluster of syntactico-semantic features defining an X^0 position; morpho-phonemic information, on the other hand, is added during vocabulary insertion.

²It is important to note, however, that Vocabulary items may lack phonological information, or in other words, have a null phonological matrix. This position, although not universally accepted, is well-established in the morphological literature, and finds strong support, for example, in English *do*-support. Notice that *do* is inserted not only when a tense affix can be identified phonologically, as in *He does not play*, but also when no tense affix appears phonologically, as in *We do not play*. A natural analysis of *do*-support, then, posits a null affix to be supported by *do*: *We do-ønot play*. I thank Morris Halle for the example and discussion of these issues.

³This principle clearly has roots throughout the history of grammatical analysis, notably including the Pañinian principle of “more complex first”, and Kiparsky’s (1973) *Elsewhere Condition*.

With this background, let us now consider the patterns of agreement in Irish. Verbal agreement suffixes in Irish are limited in availability, the distribution of these suffixes varying across dialects. (3) illustrates the forms of the verb *cuir* “to put” found in two dialects: West Munster, the dialect which contains the most suffixes, and Ulster, the dialect which exhibits the fewest suffixes.⁴

(3) *Verbal Paradigms*⁵

West Munster

	Pres	Fut	Past	Imperf	Cond
1s	cuirim	(cuirfead)	chuireas	chuirinn	chuirfinn
2s	(cuirir)	(cuirfir)	chuiris	chuirteá	chuirfeá
3s	—	—	—	—	—
1pl	cuirimíd	cuirfimíd	chuireamar	chuirimís	chuirfimís
2pl	—	—	(chuireabhair)	—	—
3pl	(cuirid)	(cuirid)	chuireadar	chuiridís	chuirfidís
Impers	cuirtear	cuirfear	cuireadh	chuirteá	chuirfeá
Analy	cuireann	cuirfidh	chuir	chuireadh	chuirfeadh

Ulster

	Pres	Fut	Past	Imperf	Cond
1s	cuirim	—	—	chuirinn	chuirfinn
2s	—	—	—	chuirteá	chuirfeá
3s	—	—	—	—	—
1pl	—	—	—	chuirimís	chuirfimís
2pl	—	—	—	—	—
3pl	—	—	—	—	—
Impers	cuirtear	cuirfear	cuireadh	chuirteá	chuirfeá
Analy	cuireann	cuirfidh	chuir	chuireadh	chuirfeadh

When a suffix realizing the appropriate person and number features is available, it cannot co-occur with a subject pronoun. So in (4), we see that the verb bears a first person singular suffix and adding the first person singular pronoun renders the sentence ungrammatical.

⁴Forms in parenthesis are described as “optional” or “preferred”.

⁵The following abbreviations are used throughout:

pres	=	present	fut	=	future	hab	=	habitual
imperf	=	imperfect	cond	=	conditional	impers	=	impersonal
analy	=	analytic	part	=	participle	VN	=	verbal noun
agr	=	agreement	fem	=	feminine	masc	=	masculine
contr	=	contrastive	reflex	=	reflexive	gen	=	genitive
demon	=	demonstrative	Q	=	question C	neg	=	negation

(4) *ϕ -feature Agreement Cannot Co-occur with Pronoun*⁶

- a. Chuirf-**inn** isteach ar an phost sin
put.cond-**1sg** in on the job that
'I would apply for that job.'
- b. *Chuirf-**inn** **mé** isteach ar an phost sin
put.cond-**1sg** **I** in on the job that
'I would apply for that job.' (McCloskey & Hale 1984)

When a suffix realizing the needed ϕ -features is not available, a default suffix is used instead, along with the appropriate pronoun. In the Irish literature, this is referred to as the “analytic”. An example is given in (5) (exclusively in the simple past tense the default suffix is null, as shown above in (3)).

(5) *Default Agreement Co-occurs with Pronoun*

Mhol- \emptyset **mé** dó cur isteach ar an
advise.past-**agr** **I** to.3sg put.VN in on the
phost
job
'I advised him to apply for the job.' (McCloskey 1984)

The default status of this suffix is witnessed by its compatibility with any subject, regardless of the ϕ -features of the subject, provided that an agreeing suffix is not available. Furthermore, the suffix is used in the salient unaccusative construction, a construction whose characteristic property is that it is lacking a grammatical subject. Thus, in (6) the only noun phrase is embedded in a prepositional phrase, and this phrase fails all the tests for subjecthood in the language (see McCloskey 1996a for detailed discussion and analysis). Therefore, the suffix cannot be expressing any subject agreement features because there is no subject.

(6) *Default Agreement with Salient Unaccusatives*

Chuir- \emptyset ar an stoirm
put.past-**agr** on the storm
'The storm increased.' (McCloskey 1984)

⁶Glosses have been slightly altered from published sources so that more detailed information could be provided and so that a single abbreviation system could be used. In some cases, two examples have been combined into one for ease of exposition.

When an agreement suffix is available, the speaker cannot opt instead to use the default suffix and the pronoun. This is shown in (7). (7a) recalls the basic pattern in which an agreement suffix cannot be accompanied by an overt subject pronoun. (7b) demonstrates that employing the default suffix and a subject pronoun is ungrammatical when an agreeing suffix is available.

(7) *Verbal Agreement versus Subject Pronoun*

- a. Chuirf-**inn** (***mé**) isteach ar an phost sin
 put.cond-**1sg** (***I**) in on the job that
 ‘I would apply for that job.’
- b. *Chuirf-**eadh mé** isteach ar an phost sin
 put.cond-**agr I** in on the job that
 ‘I would apply for that job.’ (McCloskey & Hale 1984)

This interaction between agreement morphology and pronouns is not only found with verbs in Irish, but also with prepositions and nouns, as illustrated in (8) and (9).⁷

(8) *Prepositional Agreement versus Overt Object*

- a. Bhí mé ag caint le-**ofa** (***iad**) inné
 be.past 1sg at talk.VN with-**3pl** (***them**) yesterday
 ‘I was talking to them yesterday.’ (McCloskey & Hale 1984)
- b. Bhí mé ag éisteach le-**ofa** (***iad**) ag argáil.
 be.past 1sg at listen.VN with-**3pl** (***them**) at argue.VN
 ‘I was listening to them arguing.’ (Chung & McCloskey 1987)

(9) *Nominal Agreement versus Overt Genitive Complement*

- mo** theach (***mé**)
1sg house (***my**)
 ‘my house’ (McCloskey & Hale 1984)

A property of the agreement morphology in Irish which distinguishes it from superficially similar *pro*-drop languages like Spanish and Italian, is that in general the grammar does not distinguish between sentences with a pronoun and those without. Thus, (10a) illustrates that a contrastive suffix may attach onto a pronoun; (10b), (10c), and (10d) show that the suffix may also occur with agreeing verbs, prepositions, and nouns, respectively.

⁷With few exceptions, the agreement paradigms are complete for prepositions and nouns.

(10) *Agreement Morphology with Contrastive Particles*

- a. **tu -sa**
2sg -contr
'you'
- b. dá ndéanf-á -sa
if do.cond-**2sg -contr**
'if you would do'
- c. le-at -sa
with-**2sg -contr**
'with you'
- d. **mo** leanbh bocht -sa
1sg child poor -**contr**
'my poor child' (McCloskey & Hale 1984)

In (11), we see that both pronouns and agreement suffixes can serve in resumptive pronoun contexts.

(11) *Agreement Morphology in Resumptive Pronoun Contexts*

- a. daoine nach mbíonn fhios agat ariamh
people C.neg be.hab knowledge at.2sg ever
an dtiocfaidh **siad** in am
Q come.fut **they** in time
'people that you never know if they will come on time'
- b. daoine nach raibh fhios againn ariamh
people C.neg be.past knowledge at.1pl ever
an dtiocfa-**idís** in am
Q come.fut-**3pl** in time
'people that we never knew if they would come on time'
- c. daoine nach mbíonn fhios agat ar chóir duit
people C.neg be.hab knowledge at.2sg Q proper to.2sg
a bheith ag caint le-**ofa**
be.VN at talk.VN with-**3pl**
'people that you never know if you should be talking to them'
- d. fear nach bhfuil fhios agam Q
man C.neg be.pres knowledge at.1sg an
bhí **a** mhac beo nó marbh
be.past **3sg** son alive or dead
'a man that I don't know if his son is alive or dead'
(McCloskey & Hale 1984)

Both pronouns and agreement suffixes can also head relative clauses, as shown in (12).

(12) *Agreement Morphology Heading a Relative Clause*

- a. **iad** sin aN raibh aithne agam orthu
them demon. C be.past acquaintance at.1sg on.3pl
'those that I knew'
- b. Chua-**dar** sin aN raibh aithne agam orthu
go.past-**3pl** demon. C be.past acquaintance at.1sg on.3pl
go Meiriceá
to America
'Those that I knew went to America.'
- c. Labhair mé le-**ofa** sin aL bhí i láthair
speak.past 1sg with-**3pl** demon. C be.past in location
'I spoke to those who were present.'
- d. Bhí mé **á** mbualadh sin aL bhí ag teacht
be.past 1sg **3pl** beat.VN demon. C be.past at come.VN
anís an dréimire
up the ladder
'I was beating those who were coming up the ladder.'
(McCloskey & Hale 1984)

Finally, in (13) we see that agreement morphology can also be conjoined with a noun phrase.

(13) *Agreement Morphology in Coordinate Structures*⁸

- a. **mi** -se agus tu -sa
I -contr. and you-contr.
'you and I'
- b. dá mbe-**inn** -se agus tu -sa ann
if be.cond-**1sg** -contr. and 2sg -contr. there
'if you and I were there'
- c. Tá teach ag-**am** féin agus *(ag) Eoghan
be.pres house at-**1sg** reflex. and *(at) Owen
'Owen and I have a house.'
- d. Bhí an gradh **á** scaoileadh féin agus Ghaoileain
be.past the love **3sgfem** separate.VN reflex. and Gaoilean.gen
ón tsaoghal mhór
from.the life great
'Love was separating her and Gaoilean from the outside world.'
(McCloskey & Hale 1984)

In *pro*-drop languages, on the other hand, the grammar does distinguish between sentences with and without an overt pronoun. Consider a couple of illustrative examples from Spanish and Italian.^{9,10} To begin, in these *pro*-drop languages agreement can co-occur with a pronoun, unlike in Irish.

(14) *Co-occurrence of Agreement and Pronouns*

a. *Spanish*

Yo voy al cine esta noche
 I go.1sg to.the movies this night
 ‘I am going to the movies tonight.’ (Guilfoyle 1990)

b. *Italian*

Io sto andando al cinema stasera
 I be.1sg go.prespart to.the movies this.evening
 ‘I am going to the movies tonight.’

Furthermore, there are limitations on the types of constructions which allow *pro*-drop in these languages. (15) shows that relative clauses cannot be headed by *pro*.

(15) *Limitations on the Availability of pro-drop: Relative Clauses*

a. *Spanish*

(Digo) *(yo) que nunca he salido de
 (say.1sg)*(I) that never have.1sg gone.outbf
 la casa (digo)
 the house (say.1sg)
 ‘I who have never gone out of the house say ...’ (Guilfoyle 1990)

b. *Italian*

*(Io) che non sono mai andato fuori di
 (I) that Neg be.1sgnever go.pastpart out of.the
 casa dico che
 house say.1sg that
 ‘I who have never gone out of the house say ...’

⁸Conjunction of inflected prepositions with other DPs is significantly degraded. However, McCloskey & Hale (1984) suggest that this is due to another fact about the language, namely that a conjoined DP complement of a preposition is always dispreferred. Instead, the preposition is repeated, resulting in conjoined PPs.

⁹See Montalbetti (1984) for discussion of other differences between overt pronouns and *pro* in *pro*-drop languages.

¹⁰I would like to thank Michela Ippolito for help with the Italian examples.

(16) reveals that *pro*-drop is also impossible in coordinate structures, whether the verb shows agreement with the whole coordination or just with *pro*.

(16) *Limitations on the Availability of pro-drop: Coordination*

a. *Spanish*

*Juan y decimos/digo
John and say.1pl/say.1sg
'John and I say' (Guilfoyle 1990)

b. *Italian*

*Gianni ed diciamo/dico che
John and say.1pl/say.1sg that
'John and I say that ...'

Thus, we conclude that expressions which display agreement morphology without an overt pronoun behave quite differently in Irish than in *pro*-drop languages like Italian and Spanish. Whereas the Irish expressions without an overt pronoun are undifferentiated from those containing one, the Spanish and Italian expressions without an overt pronoun have a special status in the grammar.¹¹

In the next section, I examine an approach to the Irish data which attempts to capture this generalization, by claiming that pronouns in Irish undergo a process of incorporation. It is argued that although such an approach is initially attractive, it fails to capture the complete range of data.

2 Ruling out an Incorporation Analysis

Doron (1988) and Guilfoyle (1990) propose analyses which explain the complementary distribution of agreement affixes and pronouns in Irish by equating the two. Thus, according to this approach, the pronominal arguments undergo a process of incorporation into the verb, preposition, or noun that governs them. The pronominal is then realized as either a pronoun or an affix, subject to the availability of affixes.

Initial support for this hypothesis is provided by the fact that subject pronouns are clitics in Irish, forming a phonological word with the verb.

¹¹Thus the Avoid Pronoun Principle (Chomsky 1981) cannot be fruitfully applied to explain the Irish data. The principle was designed to account for the Spanish/Italian case, the intuition being that the grammar prefers to not use an overt pronoun, but will if some property of the expression renders it necessary. The Irish case is crucially different in that the pronoun cannot ever be used, regardless of the construction-type or focus properties of the expression.

Thus, adverbs which appear between the verb and a full DP subject cannot intervene between the verb and a subject pronoun.

(17) *Adverbs cannot Intervene between the Verb and Pronoun*

- a. *Chuartaigh, ar ndóigh, siad an bád
 search.past, of course, they the boat
 ‘They of course searched the boat.’
- b. Chuartaigh, ar ndóigh, na saighdiúirí an bád
 search.past, of course, the soldiers the boat
 ‘The soldiers of course searched the boat.’
 (Chung & McCloskey 1987)

In addition, focus on the verb is realized either by stressing the suffix, as in (18a), or stressing the pronoun, as in (18b).

(18) *Focal Stress on the Verb Realized by Stressing the Affix/Pronoun*

- a. A: ní dhéanfainn a leithéid
 C.neg do.cond.1sg 3sg like
 ‘I wouldn’t do such a thing’
 B: dhéanFA
 do.cond.2sg
 ‘you would’
- b. A: an dtabharfaidh siad an phost dó
 Q give.fut they the job to.3sg
 ‘Will they give him the job?’
 B: caithfidh SIAD
 must.pres they
 ‘They have to’
 (Doron 1988)

However, the fact that the pronoun is a phonological clitic does not indicate that the pronoun incorporates into the verb prior to Vocabulary insertion. It is movement prior to Vocabulary insertion which is at issue since movement of the clitics after Vocabulary insertion would not create the complementary distribution between the affixes and clitics required for this analysis. In fact, there is ample evidence that the pronoun and the verb do not form a single syntactic word.

First, if the pronouns incorporate into the verb/preposition/noun and are realized either as an affix or as a pronominal clitic, we expect that the affixes could never co-occur with the clitics. As we have seen, this is true, in general. However, in the Cois Fhairrge dialect of Irish a number of the agreement particles found with nouns have collapsed into one.¹² The resulting Vocabulary item is a default that fails to realize all the features

¹²Note that the following consonant mutations do still distinguish the particles. Given

of the possessor. In this situation, the pronoun does co-occur with the agreement particle, as shown in (19).

(19) *Cois Fhairrge Doubling of Agreement and Pronouns*

- a. a muirín **si** -se
agr family **her** -contr.
'her family'
 - b. a chuid **se** -isan
agr portion **his** -contr.
'his portion'
 - c. a nglór **muid** -e
agr voice **our** -contr.
'our voice'
- (McCloskey & Hale 1984)

The second piece of evidence against incorporation is that this movement would violate the Coordinate Structure Constraint. In (20a) (data repeated from (13) above) the pronominal subject would move out of the first conjunct, becoming a suffix on the verb, but not out of the second conjunct. Therefore, an incorporation analysis would predict these structures to be ungrammatical, contrary to fact.

(20) *Apparent CSC Violations*

- a. dá mbe-**inn** [t -se] agus [tu -sa] ann
if be.cond-**1sg** [t -contr.] and [you -contr.] there
'if you and I were there'

that the particles themselves have merged, we may conclude that they are analysed as a single vocabulary item in this dialect. The following mutations can then be seen as readjustment rules triggered in the environment of certain features of the possessor. For the reader unfamiliar with the Irish literature, consonant mutations are a notorious problem of Irish morpho-phonology. Certain morphemes, certain Vocabulary items, and certain environments trigger a change in a word-initial consonant. There are two such mutations. *Lenition* is orthographically represented by an *h* following the affected consonant, and commonly represented in linguistic description by a superscript *L* on the element triggering the mutation. Lenition affects consonants as follows (*L*, *N*, and *R* are tense):

- (i) *lenition*
p t k b d g f s m ^L n r →
f h x v γ γ ø h ^v l n r

Eclipsis is orthographically represented by a voiced consonant or nasal preceding the affected consonant, and commonly represented in linguistic description by a superscript *N* on the element triggering the mutation. Eclipsis epenthesizes an /n/ onto initial vowels and affects initial consonants as follows:

- (ii) *eclipsis*
p t k b d g f →
b d g m n n v

See Massam (1983), Duffield (1995), among others for discussion of this phenomenon.

- b. Bhí an gradh **á** scaoileadh [*t féin*] agus
 be.past the love **3sgfem** separate.VN [*t reflex.*] and
 [Gaoileain] ón tsaoghal mhór
 [Gaoilean.gen] from.the life great
 ‘Love was separating her and Gaoilean from the outside world.’

A further difficulty with the incorporation analysis involves the contrastive particles. As discussed above, contrastive particles appear suffixed onto the noun phrase they modify, and this seems to be true of the agreement morphology as well. However, when we consider the possessive agreement particle we discover that the contrastive affix does not appear suffixed to the agreement particle, but rather appears stranded in the apparent base-position of the pronoun, as illustrated in (21a) and (21b). Consider (21a). In this example, although the agreement particle for first person singular occurs before the noun, the contrastive suffix that modifies “my” appears after the noun and its adjective, exactly where a possessive noun phrase normally occurs. If the first person singular particle here truly were the pronominal possessor incorporated into the noun, it would be the only place in the language where we find the contrastive particle separated from the noun it modifies.

(21) *Stranded Contrastive and Reflexive Particles*

- a. **mo** leabh bocht **-sa**
1sg child poor **-contr**
 ‘my poor child’
- b. **a** shaol suarach **féin**
3sg.masc life wretched **reflex**
 ‘his own wretched life’ (McCloskey & Hale 1984)

The final empirical difficulty with the incorporation analysis is that evidence from ellipsis indicates that the pronoun does not form a syntactic word with the verb. When responding to a yes-no question in Irish, one repeats the verb and elides everything that follows the verb, i.e. the FP. When the subject of the sentence is expressed by a suffix on the verb, of course this suffix is retained when the rest of the sentence is elided. This is shown in (22a). However, when the subject of the sentence is expressed by a pronoun, the pronoun is elided with the rest of the sentence, as shown in (22b). This clearly demonstrates that the subject pronoun does not syntactically incorporate into the verb, but rather remains in the subject position in spec, FP, and is thus elided with the rest of FP.

(22) *FP-ellipsis-Responsives*

- a. Q: an gcuireann tú isteach ar phostannaí
 Q put.pres you in on jobs

- A: cuir-im / *cuir-eann
 put.pres-1sg / put.pres-agr
 ‘Yes.’
- b. Q: an gcuireann sé isteach ar phostannaí
 Q put.pres he in on jobs
 ‘Does he apply for jobs?’
- A: cuir-eann (*sé)
 put.pres-agr (*he)
 ‘Yes.’ (Doron 1988)

This pattern also appears in tag questions, and environments equivalent to VP-ellipsis in English, as in (23). (23a) is particularly interesting in that it illustrates that agreement suffixes that are no longer in general usage in a given dialect are often retained in FP-deletion environments. Thus, the first clause of (23a) displays a default suffix and the second person singular pronoun, while the tag employs a second person singular suffix.

(23) *FP-ellipsis–Tag Questions, VP-ellipsis*

- a. Glanfaidh tú an bord, an nglanfaís?
 clean.fut-agr you the table, Q clean.fut.2sg
 ‘You will clean the table, will you?’
- b. Ar choinnigh tú an cóta? Ar ndóigh, choinnís
 Q keep.past you the coat of course keep.past.1sg
 ‘Did you keep the coat?’ ‘Of course I did’ (Ó Siadhail 1980)

To conclude, this section considered the possibility that the complementary distribution in Irish between agreement morphology and pronouns could be explained if the pronouns incorporate into the verb/-preposition/noun, and are then realized either as an affix or as a pronominal clitic. However, we have found considerable empirical evidence against incorporation. Therefore, in Section 3 I develop an alternative, agreement explanation for the Irish data.

3 Developing an Agreement Analysis

This section develops an alternative approach to the Irish agreement patterns, drawing insights from McCloskey & Hale 1984. The key ingredients of the proposal are as follows.

The affixes found on verbs, prepositions, and nouns are truly agreement morphology. Pronouns trigger agreement in Irish, and this agreement must be realized with an agreeing affix when possible because such affixes

are more specified than the default suffix. This is a familiar form of morphological blocking, which is captured in Distributed Morphology by the operation of vocabulary insertion proceeding according to the Subset Principle, discussed in Section 1 above.

Next, I claim that Irish has a pronoun with a null phonological matrix. This pronoun is specified to realize any combination of ϕ features; however, its context of insertion requires that it be governed by identical ϕ features. A Vocabulary entry for this pronoun is provided in (24). This entry is to be understood as ‘the zero phonological matrix is inserted to realize $\alpha\phi$ -features in the environment of $\alpha\phi$ -features.’¹³

(24) *A Vocabulary Entry for Irish*

$[\emptyset] \leftrightarrow [\alpha\phi] / [\alpha\phi]$
 where $\alpha\phi$ is any combination of ϕ -features

When its context for insertion is met, this pronoun is the most specific, and thus always wins the competition for insertion.¹⁴ When the verb bears a default morpheme, however, the context for insertion of this pronoun is not met and the appropriate phonologically overt pronoun must be employed.

Two crucial points must be noticed about this proposal. First, it requires that only the features realized by the agreement morphology be visible to form the context of insertion for the pronoun. For example, before Vocabulary insertion the AGR node adjoined to T is always specified for the ϕ -features of the subject. This is how we get subject-verb agreement. However, the phonologically null pronoun is only licensed when an agreement suffix is inserted that actually realizes these agreement features. Thus, when a default suffix is inserted the agreement features in AGR must somehow no longer be available. In particular they must not be visible when vocabulary insertion introduces the subject pronoun.

There are two possible ways to achieve this result. One is to claim that the unrealized syntactico-semantic features remain in the tree, but that the context of insertion of the null pronoun is only sensitive to features actually realized by a Vocabulary item. The other is to make a stronger proposal, that unrealized features are deleted and are therefore unavailable to further operations in the morphological component. As a research strategy, I have chosen to push for the more restrictive theory, that is, that the unrealized features are deleted, keeping in mind that further empirical evidence may require a retreat from this position.

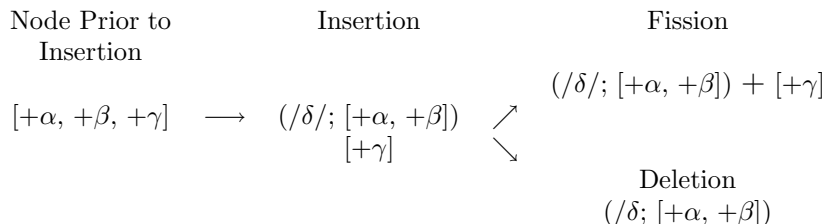
¹³The use of α feature values is, of course, not novel to this proposal. α values are commonly used in phonology, and have been argued for by Noyer (1997) for morphology.

¹⁴The null pronoun is the most specific due to its context of insertion. When two vocabulary items tie with respect to their substantive features, the item with the more specific contextual features is inserted. See, for example, Noyer (1997) on this point.

Thus, I propose that our conception of Vocabulary insertion be clarified as follows. Consider (25). A Vocabulary item δ that realizes the features α and β , has won the competition for insertion into a node with the features α , β , and γ . When the Vocabulary item δ is inserted, the features it realizes are grouped with it. If the node is marked as fissionable, the remaining unrealized feature γ may split off and create its own node (see Halle 1997). Otherwise, γ is deleted in an operation reminiscent of stray erasure, rendering it unavailable to any further operations.

(25) *Vocabulary Insertion*

Vocabulary Item: $/\delta/ \leftrightarrow [+ \alpha, + \beta]$



This results in the empirical prediction that the following condition should hold:

(26) *The Invisibility Condition*

A morphological feature F is inaccessible at MS if Vocabulary Insertion has inserted an item β into the morpheme containing F, β does not realize the feature F, and F cannot undergo fission.¹⁵

The second point to notice about the proposed analysis is that it requires Vocabulary insertion to proceed top-down, instead of bottom-up as normally assumed in the Distributed Morphology literature. In order for the Invisibility Condition to perform the necessary function in the analysis of Irish, it must be the case that Vocabulary insertion affects the verb/preposition/noun before the pronoun, although the verb/preposition/noun is structurally higher.

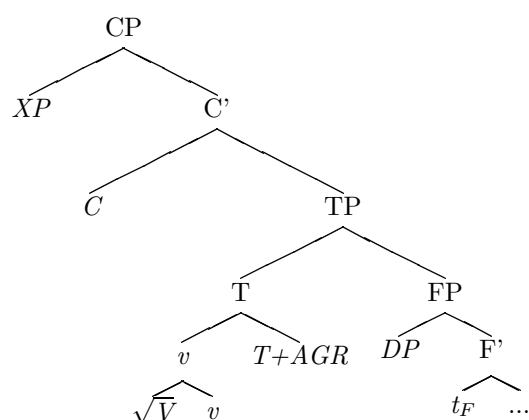
Interestingly, it is not a difficulty with the proposed analysis that it requires top-down Vocabulary insertion. Although previous work in Distributed Morphology makes crucial use of root-out insertion, that is Vocabulary insertion must affect the verbal or nominal root before it affects any functional head adjoined to the root, I have not found any work that employs bottom-up insertion. Indeed, it turns out that top-down morphology has been independently proposed by Yang (1997) and Schlenker (1999) for entirely unrelated issues. I thus propose that vocabulary insertion applies top-down, root-out, as indicated in (27). Note that to achieve this order of

¹⁵See Bobaljik 1999 for an alternative view, whereby all morphological features are deleted after vocabulary insertion, not only those which are unrealized by a vocabulary item.

vocabulary insertion does not require two separate algorithms, one which operates root-out and another which operates top-down. The “depth-first search” algorithm, familiar in computer science, results in this ordering.¹⁶

(27) *Order of Vocabulary Insertion*

XP, C, \sqrt{V} , *v*, T, AGR, DP, ...



There are several advantages to this analysis. First, it explains the co-occurrence of possessive agreement morphology and pronouns in the Cois Fhairrge dialect of Irish discussed above. In this dialect, the agreement no longer realizes all the features of the possessor. Therefore, the context of insertion of the phonologically null pronoun is not met and another pronoun must be used instead.

Second, it reduces the apparent Coordinate Structure Constraint violations to first conjunct agreement (see Munn, to appear, and references therein). The verb agrees with the pronoun in the first conjunct of the coordination, thus providing the context of insertion for the null pronoun.

Furthermore, it explains the apparent stranding of contrastive particles after the noun in possessive constructions. The contrastive particle is suffixed onto the pronoun it modifies as usual, except that in this case the pronoun is phonologically null.

Finally, the analysis allows us to understand why the pronoun is deleted in ellipsis contexts but the agreement suffixes are not. The pronoun occurs in the normal subject position in FP, whereas the agreement suffixes occur in the AGR node adjoined to T. Thus, when FP is elided, the pronoun is deleted but the suffix is not.

¹⁶I thank Charles Yang for discussion on this point.

4 A Lexicalist Alternative

Thus we seem to have an empirically sound analysis of the Irish agreement data which makes crucial use of late insertion and competition among Vocabulary items for insertion. An important question to ask at this point is whether the Irish data constitutes an argument for a post-syntactic morphology, or if an equally adequate lexicalist analysis could be formulated. To begin to answer this question, in this section I examine the LFG analysis of Irish proposed by Andrews (1990). In addition, I briefly discuss the implications of the data for a Chomsky-style lexicalist theory, with early insertion followed by checking of morpho-syntactic features (see, for example, Chomsky 1995).

Andrews (1990) crucially formulates his analysis of Irish in an LFG framework. However, it is more important to understand in an intuitive manner how the results are achieved, rather than examining the details of LFG. Therefore, I only present the relevant elements here.

Andrews proposes that the lexical structure of inflected verbs contains information about their subject, including a feature [Pred] specified as pronominal, as shown in (28).

(28) *Partial f-structure in lexical entry of chuirfinn ‘I was putting’*

$$\left[\begin{array}{l} \text{SUBJ} \\ \text{TENSE} \\ \text{PRED} \end{array} \left[\begin{array}{ll} \mathbf{PRED} & \mathbf{PRO} \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \\ \text{CONDIT} & \text{‘Cuir } \langle (\uparrow \text{SUBJ})(\uparrow \text{PRT})(\uparrow \text{OBL}_{ar}) \rangle \text{’} \end{array} \right] \right]$$

When combined with an indexing condition, this feature makes the verbal agreement behave like a subject pronoun. Thus, verbs carrying agreement morphology cannot appear with an independent subject pronoun, because these verbs already contain a pronoun.

Now comes the more difficult question: how to block the use of a default verb with a separate pronoun when an inflected verb is available. Andrews enlists a general LFG feature percolation convention. So, the features of the constituents of the sentence percolate up to the sentence level, and the features of the sentence percolate down to the verb. This is shown in (29)

(29) *Rule of Sentence Structure for Irish*

$$\begin{array}{ccccccc} \text{S} & \rightarrow & \text{V} & & (\text{NP}) & & (\text{NP}) \\ & & \uparrow=\downarrow & & (\uparrow \text{SUBJ}) = \downarrow & & (\uparrow \text{OBJ}) = \downarrow \end{array}$$

Given this mechanism, Andrews proposes a two-step comparison. First, the f-structure specified in the lexical entry of the agreeing verb is compared with the f-structure specified in the lexical entries of other words, the relevant one here being the verb bearing default morphology. He notes that

the lexical entry of the default verb is a subset of the lexical entry of the agreeing verb, since the agreeing verb includes the subject feature [PRED], and the default verb does not. Next, we compare the f-structure of the verbs after they are integrated into a sentence. The relevant sentences to compare are two that differ only in that one has the default verb and an independent pronoun while the other has only the agreeing verb. Andrews notes that their f-structures are the same, since the features lacking in the lexical structure of the default verb are supplied in the sentence by the subject pronoun. In this situation, Andrews proposes, the sentence with the default verb cannot be used.

(30)

Agreeing Verb	Default Verb
Lexical entry:	Lexical entry:
$\left[\begin{array}{l} \text{SUBJ} \left[\begin{array}{ll} \text{PRED} & \text{PRO} \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \end{array} \right] \\ \text{TENSE} & \text{CONDIT} \\ \text{PRED} & \text{'Cuir}(\uparrow \text{SUBJ})(\uparrow \text{OBL}_{ar}) \end{array} \right]$	$\left[\begin{array}{ll} \text{TENSE} & \text{CONDIT} \\ \text{PRED} & \text{'Cuir}(\uparrow \text{SUBJ})(\uparrow \text{OBL}_{ar}) \end{array} \right]$
F-structure in sentence:	F-structure in sentence:
$\left[\begin{array}{l} \text{SUBJ} \left[\begin{array}{ll} \text{PRED} & \text{PRO} \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \end{array} \right] \\ \text{TENSE} & \text{CONDIT} \\ \text{PRED} & \text{'Cuir}(\uparrow \text{SUBJ})(\uparrow \text{OBL}_{ar}) \end{array} \right]$	$\left[\begin{array}{l} \text{SUBJ} \left[\begin{array}{ll} \text{PRED} & \text{PRO} \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \end{array} \right] \\ \text{TENSE} & \text{CONDIT} \\ \text{PRED} & \text{'Cuir}(\uparrow \text{SUBJ})(\uparrow \text{OBL}_{ar}) \end{array} \right]$

It is important to get a clear picture of how this blocking is accomplished. There is comparison at the sentential level of two sentences containing different lexical items. If the sentences have the same basic featural meaning, the sentence containing the less specific lexical item is blocked. This is thus a very powerful mechanism which essentially rules out wordiness. Andrews cites in support of his theory the oddness of phrases like “the day before/after today”, which could be ruled out by the more specific “yesterday” and “tomorrow”. Similarly, he suggests, while “this afternoon” and “this evening” are perfectly natural, “this night” would be blocked by “tonight”. However, these examples seem crucially different from the Irish agreement case. “The day after today” is not ungrammatical, but rather pragmatically odd. A Gricean-type principle seems to be at work here: “the day after today” requires some sort of justification as to why one chose not to use the simpler “tomorrow”. Clearly, calling a phenomenon “Gricean” is not providing an explanation for it, that is the topic of another paper. My only point here is that the two phenomena are of a completely different nature. “The day before today” is grammatical but requires pragmatic justification, while using the default verb with a pronoun

in Irish when an agreeing verb is available does not require justification, it is simply ungrammatical.

So, it seems that the LFG-lexicalist account of the Irish data is problematic. In order to block the use of the default verb with a pronoun, Andrews must resort to trans-derivational comparison. This is not only a powerful and costly mechanism, it is a mechanism that undergenerates, by incorrectly ruling wordy expressions ungrammatical.

Thus, let us consider an alternative lexicalist theory like that envisioned by Chomsky (1995). In such a theory the morphological component operates before the syntax, creating a numeration that consists of fully inflected words, whose features are checked over the course of the derivation. It turns out the Irish data pose similar difficulties for this type of lexicalist approach as well. In order to block the co-occurrence of pronouns and agreement morphology in Irish, without again resorting to comparison at the sentential level, it seems that one would have to posit complicated constraints on the choice of the numeration. So, before it can be decided whether to choose an overt pronoun or a null pronoun for the numeration, the grammar must have information about what position that pronoun will eventually come to have in the syntactic structure and what agreement morphology will be in its environment. Even knowing that a pronoun will be the subject of a verb bearing agreement morphology is not enough; the grammar also needs information about whether this pronoun will be conjointed, and if so whether it will appear in the left conjunct or the right. Notice that the usual solution of making a random choice and having the derivation crash if the wrong choice is made will not work here. There is nothing to make the derivation crash when the wrong choice (that is, the default verb and pronoun) is made.

Therefore, it appears that the Irish data is quite problematic for lexicalist, early insertion models of morphology. In order to correctly choose between an overt and a null pronoun, information about the pronoun's syntactic environment is required, and this information is simply not available until after the operation of the syntax. Lexicalist approaches are thus forced into positing global comparison of derivations with different lexical items. This then makes incorrect predictions about morphological blocking, leading us to expect wordiness to be ungrammatical.

5 Conclusions

In conclusion, this paper has proposed an analysis of the interaction between agreement morphology and overt pronouns in Irish, which makes crucial use of late insertion and competition between a phonologically overt pronoun and a phonologically null pronoun. In developing the analysis, I argued that vocabulary insertion operates from the top of the syntactic tree down, and I proposed that features unrealized by a Vocabulary item are deleted. I've shown that the proposed analysis does not suffer from the em-

pirical difficulties faced by incorporation analyses. I've also shown that the analysis captures the blocking patterns in a purely local manner, while lexicalist approaches require powerful mechanisms of trans-derivational comparison, mechanisms that end up undergenerating. I am not claiming that a lexicalist analysis could not in principle be found, however at this point it does seem that the Irish data constitute an interesting argument for a post-syntactic, competition-based framework of morphology.

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