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Contents

φ-feature Hierarchy and Old Irish Object Pronoun Distribution*

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This paper explains the distribution of the "infixed" and suffixed object pronouns in Old Irish as presented by Cowgill (1987) in terms of agreement and the hierarchy among φ-features. Building on recent developments in syntactic theory—especially Preminger's (2014) rethinking of Chomsky's Agree operation and Deal's (2015) model of interaction and satisfaction—it argues that the distribution is regulated by a person hierarchy with the 2nd person at its top, and a gender hierarchy with the feminine at its top. Under this view, the selection of "infixed" pronoun would only be available when the subject is at the top of the person hierarchy, or when the object is either at the top of the gender hierarchy or is not susceptible to it (not all object pronouns have a value for gender). Conversely, the selection of suffixed pronoun would only be available when both arguments are lower on the hierarchy scale. While this account still leaves some questions unanswered, further research may provide evidence that the posited hierarchies reach areas of the grammar beyond the distribution of the different forms of object pronouns.

1 Introduction

There are two different strategies in Old Irish to express a pronominal object: they can either be "infixed"[1] or suffixed to the verb. Infixed pronouns are placed after a preverbal particle and before the verb. Preverbal particles can be either preverbs,

* I would like to thank Brent Vine, David Goldstein, and the other members of the Program in Indo-European Studies at UCLA for their invaluable comments, corrections, and support for this project.

1 The traditional nomenclature for these particles in Old Irish grammar does not conform to current linguistic practices, where an infix is defined as an affix inserted inside a root. The so-called "infixed" pronouns are actually prefixed to verbal roots. However, they never appear as the first prefixed particle in a verbal complex, but rather always appear as the second one (i.e. they are, or at least historically were [see Griffith 2011:27], in second position), independently of how many particles are prefixed to the verbal root. This type of pronoun is thus always placed between two morphemes, which must have been what prompted scholars to define it as "infixed."

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or particles with other kinds of functions (known in traditional grammar as "conjunct particles"), e.g. negation and complementizers, or the so-called "dummy particle" *no-*, a semantically empty particle whose usage details can be found in the following section. An example of an object infixed pronoun is as follows (in bold): *fo-**s**-ceird* "he throws **it**" (Meid 2015:45, *Táin bó Froích* 16.173). Suffixed pronouns are placed at the end of the verb, e.g. (in bold) *cartha-**i*** "she loves **him**" (Meid 2015:41, *Táin bó Froích* 2.7). It should be mentioned that suffixed pronouns can also be used in conjunction with prepositions for the formation of the "conjugated prepositions." Descriptively, we could say that prepositions in Old Irish inflect for person, and that an inflected prepositional form consists of the preposition with an object pronoun suffixed to it. For example, *dūn* 'to us' (Thurneysen 1935:5, *Scéla mucce Meic Dathó*, 4.2) is a combination of the preposition *do* 'to' and the 1st person plural suffixed pronoun (see Table 2 below). The use of suffixed pronouns with prepositions is not relevant to this paper, however, as there are no distributional issues related to it.

Table 1. Infixed pronouns

	Class A		Class B		Class C	
	sg.	pl.	sg.	pl.	sg.	pl.
1st	m^L	*n*	tam^L	*tan*	dam^L	*dan*
2nd	t^L	*b*	tat^L	*tab*	dat^L	*dab*
3rd M	a^N	} $s^{(N)}$	t^N	} $ta^{(H)}$	$(d)id^N$, $(d)^N$	} $ta^{(H)}$
3rd F	$s^{(N)}$		ta^H		da^H	
3rd N	$(a)^L$		t^L		$(d)id^L$, $(d)^L$	

Table 2. Suffixed pronouns

	Singular	Plural
1st	*-um*	*-unn*
2nd	*-ut*	*-uib*
3rd M	*-i(t)*	} *-(i)us*
3rd F	*-(i)us*	
3rd N	*-(i)t*	

Three separate classes of infixed pronouns, named respectively Class A, Class B, and Class C, exist. The distribution of Class A and Class B pronouns depends on the phonological shape of the preverbal particle that precedes them. Specifically, Class A pronouns are used after preverbal particles that historically ended in a vowel, while Class B pronouns are used after preverbal particles that historically ended in a consonant (Thurneysen 1946:257–8). The use of Class C pronouns is

limited to certain syntactic contexts. Specifically, they are used in relative clauses, including those introduced by *(s)a*^{N} (a relativizing particle) in combination with a preposition and those introduced by *i*^{N} 'in which'; after the conjunct particles *día*^{N} 'if, when', *ara*^{N} 'in order that', and *co*^{N} 'so that'; and after the interrogative particle *in* (Thurneysen 1946:258).[2] For the sake of clarity, examples are limited to Class A pronouns wherever possible. Table 1 above lists the different forms of infixed object pronouns for reference, and Table 2 provides the paradigm for suffixed object pronouns, of which there is only one class.

The distribution of the two types of object pronouns (infixed vs. suffixed) when used in conjunction with a verb was described by Cowgill (1987). The conditioning contexts he identifies are extremely varied, to the point that the distribution seems unnatural from a morphosyntactic perspective. Cowgill (1987) recognized that some morphosyntactic contexts (e.g. the presence of a preverb or conjunct particle; certain tense-aspect-mood categories; relative clauses) only allow infixed pronouns, while, in other contexts (e.g. the absence of a preverb or conjunct particle; certain tense-aspect-mood categories), infixed and suffixed pronouns vary. He also found that, when they vary, they do so depending on the person and number of the verb form, and on the person, number, and gender of the object pronoun, again with patterns that seem to make little sense from a morphosyntactic perspective. In this paper, I account specifically for the cases in which the distribution depends on person, number, and gender, henceforth φ-features, and I do so by framing it in terms of agreement and phenomena of hierarchy among φ-features.

The structure of the paper is as follows. In Section 2, I survey the distribution of the two types of object pronouns as outlined by Cowgill (1987). Section 3 introduces the theoretical framework and analyzes the Old Irish data. In Section 4, I discuss some remaining problems. Conclusions and potential further steps are outlined in Section 5.

2 The distribution

Before the publication of Cowgill's 1987 article, it was usually assumed that infixed and suffixed pronouns in Old Irish were in free variation when they co-occurred with simplex (i.e. preverb-less) verbs with no conjunct particle. For example, *beirth-**i*** (with a suffixed pronoun) and *n-**a**-beir* (with dummy *no-* and an infixed pronoun) would both mean '(s)he takes **it**' with no functional difference

2 As is standard in the literature, I use superscript *N* to indicate that a morpheme triggers nasalization of the first phonological segment of the following morpheme. Similarly, superscript *L* indicates lenition, and superscript *H* aspiration.

between them (Quin 1975:43–4, Sims-Williams 1984:149, among others). Cowgill (1987), prompted by a footnote in Watkins 1963 calling for "an examination of the attestations of [the] two types" (Watkins 1963:7 n.2), surveyed their distribution and discovered that the infixed and suffixed pronouns were in complementary distribution: ***n-a-beir*** is in fact not attested, presumably because it was ungrammatical. In Sections 2.1 and 2.2, I report Cowgill's findings, including the examples he uses for each case. I add some further explanation of basic facts of Old Irish grammar, along with grammatical glosses to Cowgill's examples.

2.1 Verbal categories requiring infixation

In certain morphosyntactic contexts, there is no alternation between infixed and suffixed pronouns, as the infixation pattern is the only possible one. For two of these cases, infixation is easy to account for. If a preverb, as in (1), or a conjunct particle, as in (2), is present, then the second-position slot in the clause is located between it and the verb. The presence of either one of these elements then presumably forces the choice of infixed pronoun.

(1) *d* *a* *gní*
PRV. 3SG.OBJ.NEUT. (LEN.)do.3SG.PRES.

He does it. (Stokes and Strachan 1901:665, Wb[3] 26a12)

(2) *ní* *mboí*
NEG. 3SG.OBJ.MASC. NAS.be.3SG.PRET.

He did not have; *lit*. there was not to him. (Stokes and Strachan 1901:266, Ml 78a4)

In a similar fashion, the second-position slot falls before the verb when it is imperfect, past subjunctive, or secondary future. These tense-aspect-mood categories indeed require, in the absence of another preverbal particle, the dummy particle *no-* even when there are no object pronouns involved. In other words, these categories never appear without a preverbal particle. The following is an example of an imperfect verb with *no-* and an infixed pronoun:

(3) *n* *a* *mberad*
PRT. 3SG.OBJ.MASC. NAS.carry.3SG.IMPF.

3 Wb is the standard abbreviation for the Würzburg glosses on the Pauline Epistles, while Ml is the standard abbreviation for the Milan glosses on a commentary on the Psalms. The Old Irish glosses are interlinear and marginal notes to and translations of certain Latin texts.

He used to carry him. (Bergin 1905:222)

Slightly different is the situation with imperative verbs, relative verbs, and passive verbs—despite the seeming availability, in some cases, of a second-position slot directly after the verb, one only ever finds infixed pronouns. Specifically, the imperative does not make a distinction between "absolute" and "conjunct" forms.[4] Imperative forms are always stressed on the first syllable whether the verb has a preverb or not (such as present indicative *as-beir* "(s)he speaks" with stress after the preverb vs. imperative *epred* "let him/her speak!" with stress on the preverb). One of the few exceptions to initial stress in imperatives is caused by the presence of an infixed object pronoun, which makes the stress shift to the second syllable. If a verb has at least one preverb, the pronoun is inserted after the first preverb. If the verb is simplex, then the pronoun is inserted between dummy *no-* and the verb:[5]

(4) *n* *a* *nglanad*
PRT. 3SG.OBJ.MASC. NAS.purify.3SG.IPV.

Let him purify himself. (Stokes and Strachan 1901:570, Wb 11d8)

Old Irish has different strategies to express relative clauses. For 3rd person singular, 1st person plural, and 3rd person plural forms of verbs with no prefixed particles, the strategy consists of a synthetic absolute form, such as *beires* "((s)he) who takes" / "whom (s)he takes."[6] Yet, in the presence of an object pronoun, once again infixation with dummy *no-* is selected over suffixation despite the availability of these absolute forms. An example of this is in (5)—note the use of a Class C infixed pronoun. To express relativity for other person/number combinations and to form prepositional relative clauses, a preverbal particle of some kind is always needed, which means that there would be no ambiguity as to the position of the object pronoun.

(5) *no* *d* *nail*
PRT. 3SG.OBJ.MASC. NAS.nourish.3SG.PRES.

(He) who nourishes him. (Stokes and Strachan 1901:528, Wb 5b28)

4 Old Irish has two sets of verbal inflections—the absolute set is used when there are no preverbal particles and the conjunct set when these are present. Absolute forms are normally stress-initial. For conjunct forms, the stress normally falls on the syllable following the first preverbal particle.

5 As Cowgill (1987:3) reports, there are some apparent cases of suffixation of object pronouns to imperative forms, all of which have, however, been dealt with in Breatnach 1977.

6 There is no distinction between relative forms signaling a subject vs. an object antecedent.

Finally, for passive verbs, the addition of a (strictly infixed) object pronoun clearly serves a different purpose. There are only 3rd person synthetic absolute forms of the passive in Old Irish, but the other persons can be expressed with the insertion of infixed object pronouns, as in (6). Suffixed pronouns are not attested with passive verbs.

(6) *no n líntar*
PRT. 1PL.OBJ. fill.3PL.PRES.PASS.

We are filled. (Stokes and Strachan 1901:23, Ml 18c3)

While the obligatoriness of infixation for some of these categories might raise questions, these are outside the scope of this paper, which will instead focus on the alternation between infixed and suffixed pronouns outlined in Section 2.2.

2.2 Verbal categories in which the distribution depends on φ-features

Having listed the morphosyntactic contexts in which the use of infixed pronouns is obligatory, I now move on to the contexts in which infixed and suffixed pronouns vary. Variation can only ever be found if the verb is simplex and not preceded by a conjunct particle. Moreover, the verb needs to have present, present subjunctive, future, or preterite inflection and also be in the active voice. Finally, the verb cannot be relative. As I anticipated, the variation in these cases is dependent on φ-features. Specifically, suffixed pronouns are selected in very restricted contexts, which I list below. There are also contexts, which are listed below as well, where we find both suffixation and infixation, the latter being otherwise the prevailing pattern.

A suffixed pronoun is selected when the subject is 3rd singular and the object pronoun 3rd singular masculine/neuter, as in (7):

(7) *bērth i*
carry.3SG.FUT. 3SG.OBJ.MASC./NEUT.

He will bear it. (Stokes and Strachan 1901:643, Wb 23a19)

A suffixed pronoun is again used when the subject is 1st plural and the object pronoun 3rd singular masculine/neuter, as in (8):

(8) *guidm it*
beg.1PL.PRES. 3SG.OBJ.MASC./NEUT.

We ask it. (Stokes and Strachan 1901:604, Wb 15d18)

We also find a suffixed pronoun when the subject is 3rd plural and the object pronoun 3rd singular masculine/neuter, as in (9):

(9) *gebt* *it*
take.3PL.FUT. 3SG.OBJ.MASC./NEUT.

They will take him. (Stokes and Strachan 1901:665, Wb 26a8)

Finally, we find one when the subject is 1st singular future and the object pronoun 3rd singular masculine/neuter, as in (10):

(10) *géba* *it*
take.1SG.FUT. 3SG.OBJ.MASC./NEUT.

I will take it. (Knott 1936: 20, *Togail bruidne Da Derga* 73.664)

When the subject is 3rd singular and the object pronoun 3rd singular feminine or 3rd plural, both infixation with dummy *no*-, as in (11), and suffixation, as in (12), are attested:

(11) *no* *s* *nesrassaigedar*
PRT. 3SG.FEM./3PL.OBJ. NAS.invalidate.3SG.PRES.

He makes it void. (Stokes and Strachan 1901:160, Ml 51b27)

(12) *it* *ius*
eat.3SG.PRES. 3SG.FEM./3PL.OBJ.

He eats it. (Stokes and Strachan 1901:345, Ml 102a15)

Infixation with dummy *no*- is selected in all other cases. An example can be found in (13):

(13) *n* *a* *gníu*
PRT. 3SG.OBJ.NEUT. (LEN.)do.1SG.PRES.

I do it. (Stokes and Strachan 1901:514, Wb 3c30)

The above patterns are summarized in Table 3 below. I signals that an infixed pronoun is required; S signals that a suffixed pronoun is required; S* signals that the suffixation requirement seems to be restricted to the future tense. In the next section, I advance an analysis for the distribution encoded in Table 3.

Table 3. Distribution

			OBJ.								
			sg.					pl.			
			1st	2nd	3rd			1st	2nd	3rd	
					M	N	F				
SUBJ.	sg.	1st	I	I	S*	S*	I	I	I	I	
		2nd	I	I	I	I	I	I	I	I	
		3rd	I	I	S	S	I S	I	I	I S	
	pl.	1st	I	I	S	S	I	I	I	I	
		2nd	I	I	I	I	I	I	I	I	
		3rd	I	I	S	S	I	I	I	I	

3 Hierarchy effects: A possible explanation

3.1 Theoretical assumptions

The distribution outlined in Section 2.2 can be framed under a theory of syntax that models the so-called "hierarchy effects": it has been shown that the participants of an event (i.e. the arguments), which bear certain grammatical properties, are ranked according to those properties. Cross-linguistically, this ranking often has morpho-syntactic consequences in terms of, for example, agreement, or constraints on the grammatical case of the arguments when more than one is present. The ranking is different depending on the language, although there are some typological tendencies—in languages with person hierarchy, for instance, it is common for the 1st person or the 2nd person to be at the top of the hierarchy, but it is uncommon for the 3rd person to be in that position. Structurally speaking, hierarchy effects are characterized by a configuration containing two DPs whose behavior depends on whether the structurally higher DP is ranked higher on the hierarchy scale than the structurally lower DP, or vice versa.

The modeling of these phenomena relies on concepts related to the theory of agreement. More specifically, for this problem I will rely on the syntactic operation FIND(*f*) as stated in Preminger 2014:120:

(14) FIND(*f*): given an unvalued feature *f* on a head H°, look for an XP bearing a valued instance of *f* and assign that value to H°

In this context, unvalued features are features satisfied by triggering FIND(*f*), probes are heads bearing these unvalued features, and goals are elements bearing valued features. While similar to Chomsky's (2000, 2001) Agree operation, Preminger's

formulation allows for the operation to fail without the whole derivation crashing. In other words, if the operation fails (when, for example, there is no goal available for a probe to interact with), the failure would not result in ungrammaticality.

In my analysis, I will also adopt Deal's concepts of interaction and satisfaction (2015). Building upon Preminger 2011, Deal (2015:1–3) argues that there is also a distinction between which features are necessary to trigger the interaction (INT) of a probe with a goal and which are necessary for the satisfaction (SAT) of such probe. This allows for the probe to access different goals until its unvalued SAT features have been met, or until there are no more goals to interact with. In the author's formulation:

(15) A probe may interact with a feature set F even if it may only be satisfied by feature set G, where F,G $\subseteq \Phi$ (the set of φ-features) and F $\neq$ G (Deal 2015:2)

It is important to note that, in such framework, if a probe remains unsatisfied after interacting with all the goals that are accessible to it, this does not result in ungrammaticality.

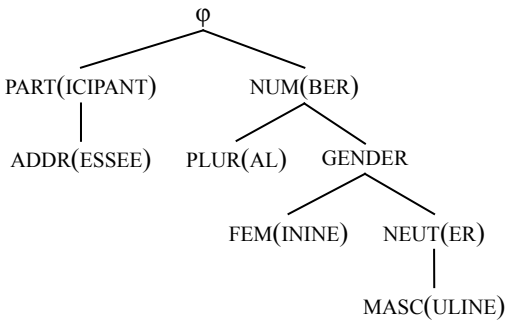
Finally, I will assume a feature geometry (based on Harley and Ritter 2002) such that the features at the top are entailed by those at the bottom. While the feature geometry related to person is normally agreed upon, the number, and especially the gender geometry and its relation to the number geometry, are not understood as well. Based on the Old Irish pronominal system, for the gender hierarchy I advance a proposal involving the traditional three-way gender distinction of the Nuclear Indo-European languages. In the proposed hierarchy, the FEMININE exists separately from the MASCULINE and NEUTER,[7] and on the other side of the hierarchy MASCULINE entails NEUTER.[8] While in feature geometries we normally find the animacy distinction above the traditional gender distinction, with FEMININE and MASCULINE entailing animacy, and NEUTER entailing inanimacy, such a hierarchy is not a possibility for Old Irish object pronouns. This is because the hierarchy in Old Irish is dependent on a three-way grammatical gender distinction, which does not align with animacy (Kramer 2015:139). As for the relation between number and gender in the φ-hierarchy, based on data from other languages scholars either support the idea that these two are separate, or believe that gender entails

7 This is an attested opposition in NIE languages. It can be seen, for instance, in some pronominal paradigms (e.g. the **so-* / **to-* pronoun) and in the paradigms of thematic adjectives, where MASCULINE and NEUTER are syncretic in the oblique cases.

8 Either order would work for this problem. However, given the typological tendency of the NEUTER to exhibit syncretism with either MASCULINE or FEMININE paradigms, I placed the MASCULINE in the hierarchy so that it is more highly specified than the NEUTER.

number.[9] This relationship does not seem to be relevant to the Old Irish pronominal system, as number does not play a role in the selection of pronouns. For completeness, I nevertheless decided to include number in the geometrical representation of features, but its position is somewhat arbitrary. The feature geometry for Old Irish object pronouns then might look something like this:

(16)



Φ is the label for the set of φ-features. The left daughter of the φ-node contains the features related to person. PARTICIPANT is a feature of both 1st and 2nd person, while ADDRESSEE is specific to 2nd person, and is more highly ranked.[10] The right daughter of φ presents the NUMBER and (most importantly for our purposes) the GENDER features, whose internal hierarchy I have already discussed. With these theoretical premises, I now show how the framework operates with the data from Old Irish.

3.2 Analysis of Old Irish data

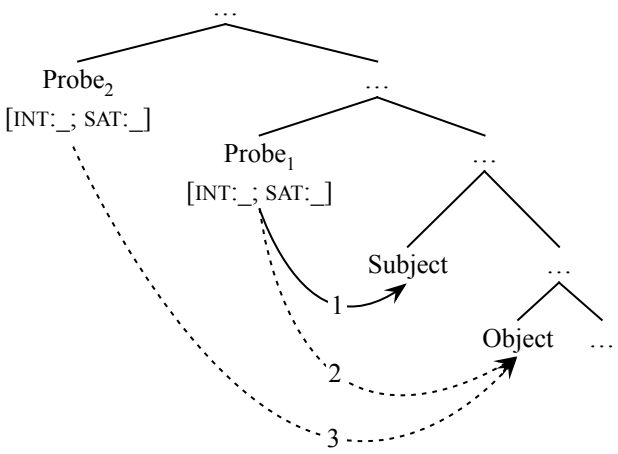
3.2.1 Probes and φ-features

For the Old Irish data, I posit the existence of two probes, both above both the subject (external argument) and the object (internal argument). $Probe_1$ will first interact with the subject, which is the first accessible goal. If it is satisfied, $Probe_2$ will interact with the object, i.e. the second accessible goal. If it is not satisfied, $Probe_1$ will also interact with the object, something which will make the latter inaccessible to $Probe_2$:

9 See Fuchs, Polinsky, and Scontras 2015 for a recent attempt at formalizing the number and gender geometry through Spanish data.

10 A feature SPEAKER specific to 1st person also exists, but since Old Irish, as I will argue, displays a person hierarchy with the 2nd person at its top, this feature is irrelevant in this context.

(17)



I furthermore posit that $Probe_1$ and $Probe_2$ should be in T and in C respectively. It has been argued that the first preverbal particle in the verbal complex, when present, is in or moves to C (Carnie, Harley, and Pyatt 2000:46–51). Having a second probe in C makes it possible to explain not only why the infixed pronouns surface, by adjoining to C (Carnie, Harley, and Pyatt 2000:52), between the preverbs or conjunct particles and the verb, but also why they surface between semantically empty *no-* and the verb when the distribution is governed by φ-features.[11] Thus, the cases in which $Probe_1$ interacts with both subject and object should correspond to the cases in which the suffixed pronoun is selected. The cases in which $Probe_1$ interacts with the subject and $Probe_2$ with the object should instead correspond to the cases where the infixed pronoun is selected.

11 It is not easy to explain the existence of *no-*. Carnie, Harley, and Pyatt 2000 argue, based on previous work on Modern Irish syntax, that Old Irish has a "filled-C" requirement, by which C must be realized phonologically. While this might seem to explain why we have a dummy particle to attach to the object pronoun (where *no-* fills the C position and the pronoun adjoins to it after movement), this is actually not the case. According to their analysis, it should be the verb that fills the C position by moving to it, meaning that their framework does not account for what is effectively the more common pattern in Old Irish, namely infixation. Perhaps my own analysis will provide a way to resolve the issue. If it is true that, in the cases of suffixation, the features of the object pronoun are copied to $Probe_1$ (T), and that, in the cases of infixation, the features of the object pronoun are copied to $Probe_2$ (C), then it is not inconceivable to come up with a system whereby the verb only ultimately moves to C if the φ-features of the pronoun have already been copied onto it in T, whereas if the φ-features are copied directly to C without coming in contact with the verb, the raising of the verb to C is somehow blocked.

The arguments, depending on what persons they are, will have the following valued features:

Table 4. Person features

1st person	2nd person	3rd person
[φ]	[φ]	[φ]
[PART]	[PART]	
	[ADDR]	

Third person singular objects can also be specified for gender:

Table 5. Gender features

3rd neuter	3rd masculine	3rd feminine
[GENDER]	[GENDER]	[GENDER]
[NEUT]	[NEUT]	[FEM]
	[MASC]	

For Old Irish then, I argue that the choice of object pronoun is governed by a 2nd >> 1st/3rd person hierarchy and a FEMININE >> MASCULINE/NEUTER gender hierarchy. Hierarchy effects are going to show as a consequence of the results of the interactions of the probes with the arguments. Specifically, if $Probe_1$ interacts with a subject that ranks high on the person hierarchy scale (i.e. it interacts with a 2nd person [ADDR] feature), an infixed pronoun appears.[12] If, on the contrary, $Probe_1$ interacts with a subject that ranks low on the person hierarchy scale, then the gender features of the object will determine the variation. If the object ranks high on the gender hierarchy scale or does not have gender features, then $Probe_2$ will interact with it and we will again get an infixed pronoun; if the object ranks low on the gender hierarchy scale, then $Probe_1$ will interact with it and we will get a suffixed pronoun.

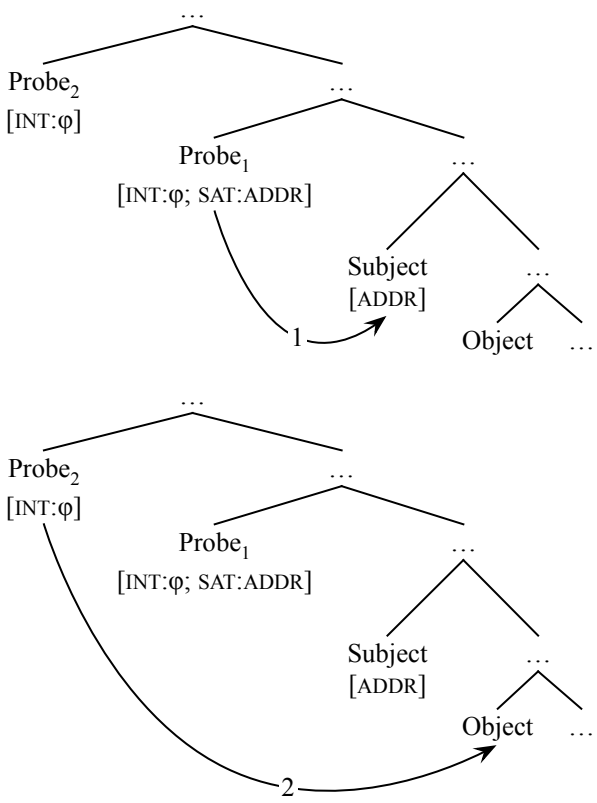
12 It is not entirely clear whether these "pronouns" are meaningful clitics or simply agreement markers. Traditionally, these were considered to be meaningful clitics, but more recent scholarship seems to be oriented to proving that these are in fact agreement markers (see, e.g., Eska 2009 and Griffith 2011). Nothing in my analysis depends on whether the pronouns are identified as clitics or agreement markers.

3.2.2 Analysis

Probe$_1$ starts with the following unvalued features: [φ] as INT condition and [ADDR] as SAT condition. Probe$_2$ only has [φ] as INT condition, but no SAT condition.[13]

If, when Probe$_1$ interacts with the subject, the [ADDR] feature is satisfied, then Probe$_2$ interacts with the object. The φ-features of the subject are copied to Probe$_1$, and the φ-features of the object to Probe$_2$:

(18) 2nd person subject plus any person object, e.g. *no-n-caraid* "you all love us":



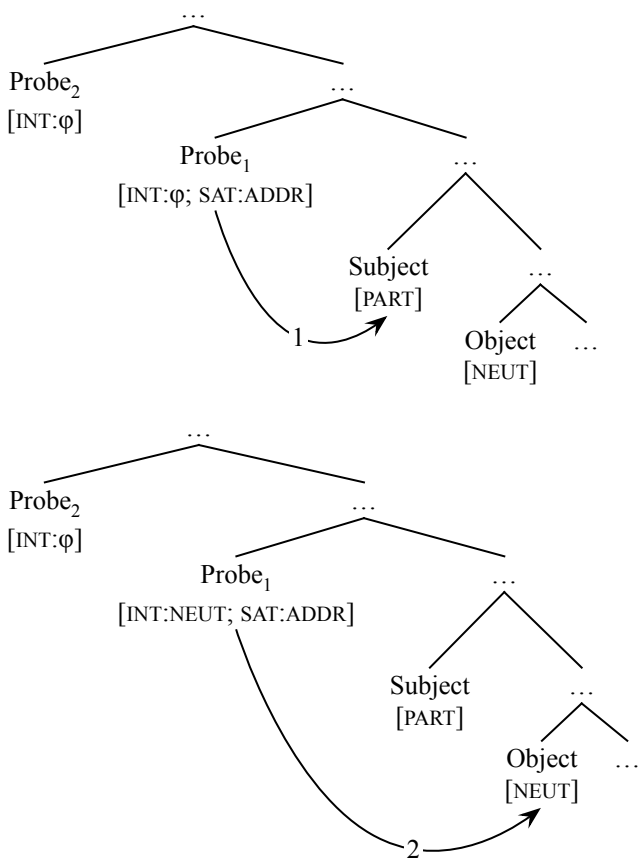
As predicted, cases like the one in (18) yield infixation of the object pronoun.

13 As discussed above in connection with (15), the feature(s) necessary to trigger the interaction of a probe with a goal (i.e. the INT condition) can be treated separately from the feature(s) necessary to satisfy such goal (i.e. the SAT condition). In other words, a probe only stops interacting with possible goals (i.e. goals containing at least the feature of the INT condition) when it either meets a goal containing a feature that satisfies it or when there are no more goals available to interact with.

If, when $Probe_1$ interacts with the subject, the [ADDR] feature is not satisfied, then a new INT condition involving gender features, namely [NEUT], is "unlocked."[14] It follows that $Probe_1$ can only interact with the object when it is either MASCULINE or NEUTER.

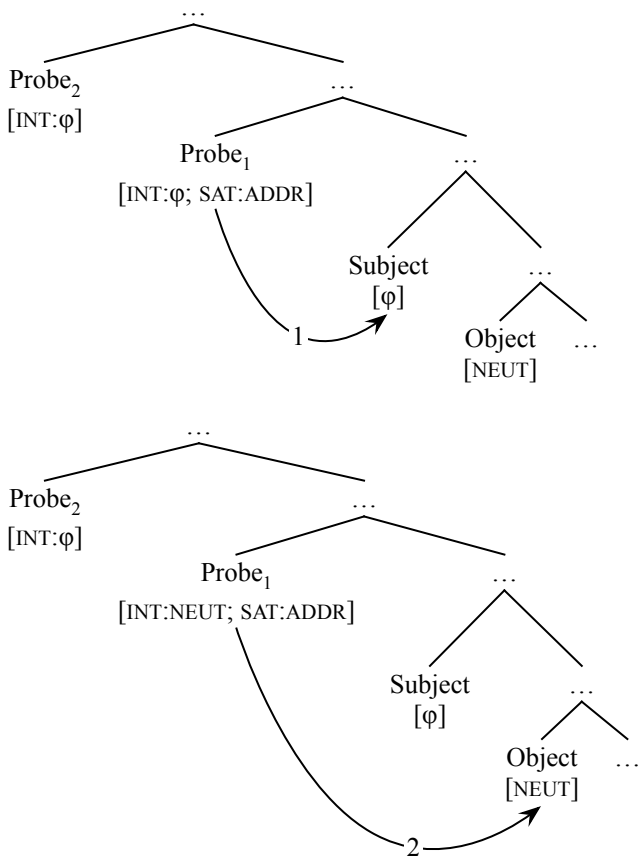
If the object contains a [NEUT] feature, both the subject and the object φ-features are copied to $Probe_1$:

(19) 1st person subject plus 3rd person MASCULINE or NEUTER object, e.g. *gēba-it* "I will take it":



14 While changes of the INT condition along the probing process have been posited before (see the model of dynamic interaction in Deal forthcoming), these are normally dependent on the φ-features found in the first goal—in other words, some φ feature found in the first goal might become a new INT condition. My model is therefore different. Some features get "unlocked" as a consequence of the probe not meeting the feature that satisfies it.

(20) 3rd person subject plus 3rd person MASCULINE or NEUTER object, e.g. *bērth-i* "he will bear it":

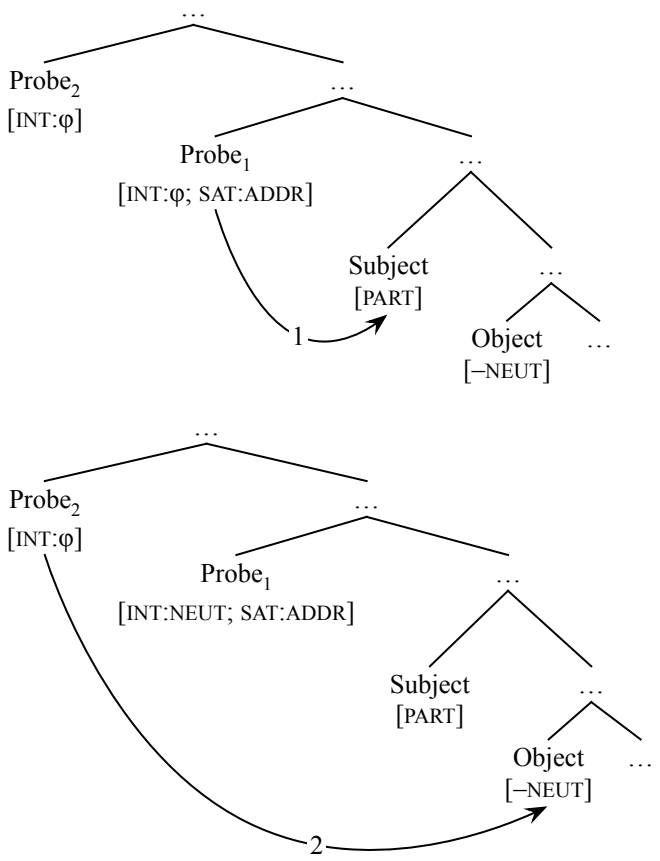


In cases such as (19) and (20), the object suffix is again suffixed, as predicted. Note that, while it is the case that $Probe_1$'s SAT condition ([ADDR]) remains unsatisfied in instances such as those in (19) and (20), this does not result in ungrammaticality. Similarly, thanks to the adoption of Preminger's FIND(*f*) operation rather than Chomsky's Agree operation, the fact that $Probe_2$ is left without a goal to interact with does not make the derivation crash.

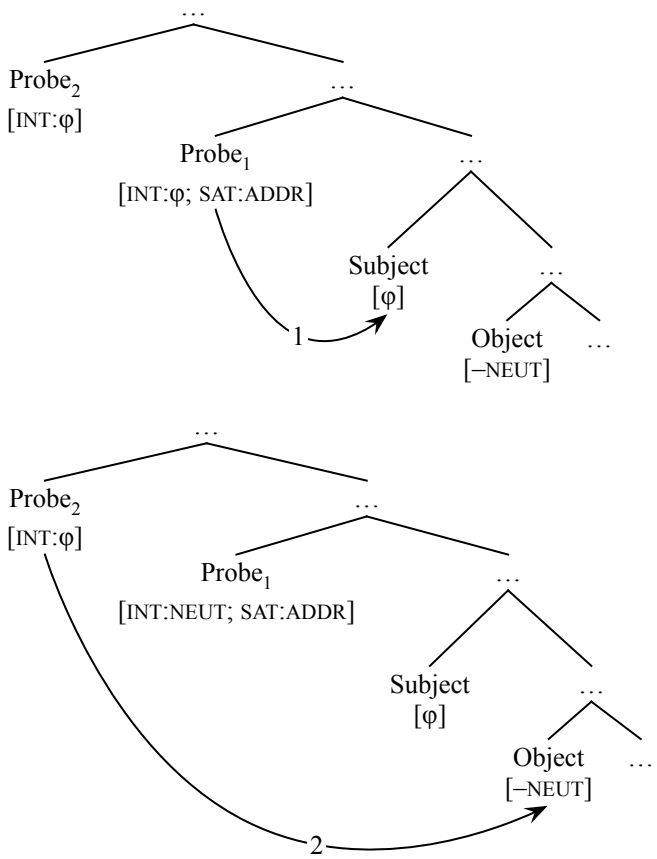
If the object has a [FEM] feature or does not contain any gender feature, then it is impossible for $Probe_1$ to interact with the object, and it is therefore $Probe_2$'s turn to probe. The φ-features of the subject are copied to $Probe_1$ (21), and the φ-features of the object to $Probe_2$ (22), just as in (18). Once again, the predictions are matched: in cases such as (21) and (22) the object pronoun is infixed.

An alternative analysis could be that, given that the 3rd singular feminine and the 3rd plural object pronouns are morphologically equivalent, the effects of the syncretism could have spread to the syntax: perhaps originally we simply had [GENDER] as the new INT condition, but the feminine pronouns ended up conforming to the 3rd plural pronouns. This is corroborated by the alternation between suffixation and "infixation" for both the pronouns in question in the third row of Table 3, indicating perhaps that the syntactic effects of the syncretism had not yet fully grammaticalized.

(21) 1st person subject plus any person object except 3rd person MASCULINE or NEUTER, e.g. *no-t-charaimm* "I love you":



(22) 3rd person subject plus any person object except 3rd person MASCULINE or NEUTER, e.g. *no-m-chara* "he loves me":



3.2.3 Diachrony

While the analysis above efficiently accounts for the data presented in Section 2.2, the picture becomes more opaque when we consider a number of fossilized and archaic forms. The 3rd singular form of the substantive verb is in fact attested with suffixed pronouns in all persons and numbers to express possession, e.g. *tath-**ut***, 'there is to **you**', '**you** have' (Thurneysen 1935:4, *Scéla mucce Meic Dathó*, 3.20); moreover, we can, though rarely, find 3rd singular verb forms with non-third person suffixed pronouns in persons in archaic texts, e.g. *ainsi-**um***, 'may he protect **me**' (Stokes and Strachan 1903:352, *Sanctán's Hymn* 14). Finally, again in archaic

texts, the suffixation pattern seems to be obligatory for 3rd singular feminine and 3rd plural pronouns.

In this context, it is necessary to mention the analysis proposed by Eska (2003) for the distribution of the Old Irish object pronouns. In Eska 2003, a diachronic phonological account of this distribution that clearly pays more attention to these archaic and fossilized forms is advanced. One interesting hypothesis that the author makes is that the 3rd plural verb form plus suffixed pronoun complex, just like the 3rd singular verb form plus suffixed pronoun complex, historically should not result in a phonologically opaque form. Consequently, suffixation of object pronouns following a 3rd plural verb form should also have been preserved in Old Irish. Nevertheless, the overwhelming predominance of morphological categories that require dummy *no-* (see §2) pushes most of the 3rd plural verb form plus suffixed pronoun complexes to analogically succumb to the infixing pattern. Conversely, the other verbal forms (when the subject is 1st or 2nd person) behave according to phonologically regular predictions, privileging the infixation pattern because the phonological changes in the history of the language make the complex with suffixed pronouns indistinguishable from the forms without a pronoun. Note, however, that in Eska's analysis the 1st person verb form plus 3rd singular object complex should also be opaque, and yet is attested.

According to Eska's findings, then, the earlier (partially reconstructed) distribution would have looked as follows:

Table 6. Potential earlier istribution

			OBJ.								
			sg.					pl.			
			1st	2nd	3rd			1st	2nd	3rd	
					M	N	F				
SUBJ.	sg.	1st	I	I	S*	S*	I	I	I	I	
		2nd	I	I	I	I	I	I	I	I	
		3rd	S	S	S	S	S	S	S	S	
	pl.	1st	I	I	S	S	I	I	I	I	
		2nd	I	I	I	I	I	I	I	I	
		3rd	S	S	S	S	S	S	S	S	

Eska's explanation has the clear advantage of accounting both for the forms found in archaic texts, and for the fact that 3rd singular forms of the substantive verb can be found with suffixed pronouns of all persons and numbers. The explanation also clearly involves attempts to reconstruct earlier stages of the distribution, so that

some of the cells in Table 6 do not reflect attested data (most of the last row), while some others reflect attested but unexplained data (the 1st person verb form plus 3rd singular object complexes). My own analysis is, by contrast, synchronic, and the distributional pattern of object pronouns taken into account is the one attested in Old (rather than Early) Irish, which means that neither the forms found in archaic texts nor the fossilized substantive verb forms are considered.

4 Remaining problems

Something that still needs clarification is the fact that a verb with 1st singular subject agreement and a 3rd singular MASCULINE or NEUTER object clitic/agreement only requires suffixation in the future, but not in the present, present subjunctive, and preterite. This might simply be due to the fact that suffixed pronouns are in the process of disappearing. If correct, Eska's conclusion (2003) that 3rd plural verbs originally selected suffixed pronouns, but no longer do in the attested language, would obviously also be a symptom of this. Why the future specifically would be the last tense to hold on to suffixation though is less clear.

Even if, as anticipated, this is not the aim of this paper, it also remains to be explained why some tense-aspect-mood categories require infixation a priori. Similarly, the fact that the variation between infixed and suffixed pronouns is restricted to certain tense-aspect-mood categories also requires further investigation. One could ask, for example, why the semantically empty particle *no-* is required to form the imperfect, past subjunctive, and secondary future of simplex verbs, but it is not used to form the present, present subjunctive, future, and preterite of simplex verbs—the reason for its presence or absence is clearly tied to the possibility of suffixed pronouns to appear, but the nature of that reason is far from clear.

What seems to be controversial arises when we compare the analysis in Section 3 to that advanced in Griffith 2008. Griffith (2008) surveys the distribution of the *notae augentes*[15] in Old Irish and finds that it is regulated by a person and an animacy hierarchy. The suggested person hierarchy is 1st >> 2nd >> 3rd, which is clearly in contrast with the findings of this paper. In addition, the data analyzed here does not seem to be subject to an animacy hierarchy. However, while it is unusual for two different person hierarchies to be operating within a single language at the same time, occurrences of this kind have been recorded (Haude and Witzlack-Makarevich 2016:434; see, for instance, Zúñiga 2006:170). Because the

15 A pronominal category that is traditionally thought to emphasize other pronominal elements with which they are associated, e.g. *not-charaimm-**se*** "**I** love you" vs. *not-charaimm-**siu*** "I love **you**" (where the boldfaced pronoun is emphasized).

two papers investigate the distribution of different particles, it is not unconceivable that two different hierarchies might be regulating them, and that therefore two different hierarchies are at play within Old Irish grammar.

5 Conclusion and potential further steps

In this paper we have looked at the peculiar distribution of the two different forms of object pronouns in Old Irish and argued that the alternation is conditioned by the person and gender hierarchy. The analysis reveals that Old Irish, at least in relation to the choice of object pronouns, seems to have a 2nd >> 1st/3rd person hierarchy, and a FEMININE >> MASCULINE/NEUTER gender hierarchy. The analysis calls for a new tool involving the "unlocking" of a new INT condition when the SAT condition is not met at the first instance of probing.

It is worth noting that this strange person distribution is found elsewhere in Old Irish grammar. As mentioned in Section 2.1, the language has relative forms of simplex verbs, but only in the 3rd singular, 1st plural, and 3rd plural. For other persons (or in the presence of a preverb or conjunct particle) other strategies are used to express a relative clause, namely lenition or nasalization (after either no- or a preverb), as in the following examples:

(23) *caras*
love.3SG.PRES.REL.

(he) who loves / whom he loves.

(24) *no charaimm*
PRV. (REL.LEN.)love.1SG.PRES.

(I) who love / whom I love.

In the same way, the fact that morphological forms of the passive only exist for the 3rd person might also be related to the hierarchy. Although I won't go into either of these issues here, analyses of these phenomena may well reveal that the person hierarchy reaches more areas of the grammar than just the choice of object pronouns.

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