On the Irish agreement pattern and its parallels: Asymmetric Chains and Defective Goals

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Abstract

This paper focuses on two phenomena in Irish agreement, namely complementarity between overt in-situ arguments and agreement, and the obviation of this complementarity under A-movement. An analysis of these facts is offered in terms the defective goal 'incorporation' (DGI) mechanism proposed by Roberts (2010), and applied to cases of complementarity in Bantu languages by Iorio (2014), van der Wal (2015, 2020, 2022), as well as *asymmetric chains* under A-movement, consisting of a full copy and a pronominal ϕ-feature bundle, cf. similar configurations discussed by Takahashi and Hulsey (2009), Harizanov (2014), Kramer (2014), Baker and Kramer (2018), *inter alios*. It is shown that this approach accounts for the facts in Irish, and that the same account can be extended to explain facts concerning participial agreement in e.g. Italian. Additional crosslinguistic implications are also considered, particularly with respect to French and Welsh.

Keywords: Irish, agreement, syntax, morphology, Romance, Bantu

Competing interests

The author declares none.

1 Introduction

1.1 Irish Agreement and its parallels

Since McCloskey and Hale (1984), Irish has been well known to syntacticians as an example of a language which shows a strong complementarity between overt (pro)nominal elements and overt ϕ-features on an agreeing head, as shown in (1):

(1) a. Níl aon leithscéal ac-**u**
NEG.COP any excuse at-**3PL**
'They have no excuse.'

b. Níl aon leithscéal ag na páistí
NEG.COP any excuse at.NONAGR the.PL children
'The children have no excuse.'

c. *Níl aon leithscéal acu na páistí

This pattern extends across a wide range of categories, including agreeing prepositions as illustrated above, as well as subject agreement, possessive marking, and object agreement appearing on certain aspectual markers. This is illustrated in (2):

(2) a. *Complementarity in Subject Agreement*

i. Dhéan-**faidís** é
do-**COND.3PL** 3SG.M
'They would do it.'

ii. Dhéan-fadh na páistí é
do-COND.NONAGR the.PL children 3SG.M
'The children would do it.'

iii. *Dhéanfaidís na páistí é.

b. *Complementarity in Possessive Marking*

i. **a** gcara
3PL.POSS friend
'Their friend'

ii. ___ cara na bpáistí
___ friend the.PL.GEN children
'The children's friend'

iii. *a gcara na bpáistí

c. *Complementarity in Object Marking*

i. Tá mé **á** moladh
COP 1SG **PROG.3PL** praise.VN
'I am praising them.'

ii. Tá mé ag moladh na bpáistí
COP 1SG PROG.NONAGR praise.VN the.PL.GEN children
'I am praising the children.'

iii. *Tá mé á moladh na bpáistí

There are a few complications to this general picture of complementarity – while in general agreement-triggering elements are not overt, argumental material *can* sometimes appear in the usual position even under agreement. These elements are typically the parts of a pronominal phrase which do not themselves bear agreeing ϕ-features. This can include demonstratives, 'emphatic' markers, reflexive markers, quantifiers

and coordinands. The general pattern is illustrated with the proximate demonstrative *seo* in (3):[1]

(3) *Demonstratives co-occurring with agreement*

a. Dhéan-**faidís** seo é
do-**COND.3PL** DEM.PROX 3SG.M
'These ones would do it.'

b. **a** gcara seo
3PL.POSS friend DEM.PROX
'These ones' friend' (ambiguous with 'this friend of theirs')

c. Níl aon leithscéal ac-**u** seo
NEG.COP any excuse at-**3PL** DEM.PROX
'These ones have no excuse.'

d. Tá mé **á** moladh seo
COP 1SG **PROG.3PL** praise.VN DEM.PROX
'I am praising these ones.'

Pronominal arguments in subject position are, in general, agreement triggering, but the Irish verbal paradigm is defective and does not display agreeing forms for a number of ϕ-feature/TMA combinations. We can contrast the conditional form in (2a-i), for example, with a future form, which in Standard Irish does not display agreement in the third person plural. In the latter, an overt pronoun is visible, as illustrated in (4):

(4) *Verbal form conditioning realisation of subject*

a. Dhéan-**faidís** é
do-**COND.3PL** 3SG.M
'They would do it.'

b. Déan-faidh siad é
do-FUT.NONAGR 3PL 3SG.M
'They will do it.'

c. *Déan-faidís siad é

d. *Déan-faidh é

The final complication, and perhaps the most important to this paper, concerns the behaviour of object-marking under passivisation. While in general object markers do not surface with full DPs, as we expect given the general pattern of complementarity, if we *passivise* the DP then we discover that object marking reemerges. This is illustrated in (5):[2]

[1] Irish demonstrative pronominals are generally complex, composed of a phi-feature bearing pronominal head (sometimes elided) and a demonstrative modifier. In a (non-subject) position where agreement does not apply, for example, the demonstrative forms here would be realised as *iad seo*, or *siad seo* in subject position.

[2] The non-agreeing form of the progressive marker has the same form (*ag*) as the preposition *ag*, which indicates location at a place or possession. A reviewer asks about the relation between these two forms –

(5) a. Tá mé **á** scríobh
COP 1SG **PROG.3SG.F** write.VN
'I am writing it.'

b. Tá mé ag scríobh na litr-each
COP 1SG PROG.NONAGR write.VN the letter-SG.GEN
'I am writing the letter.'

c. Tá an litir **á** scríobh
COP the letter **PROG.3SG.F** write.VN
'The letter is being written.'

d. *Tá mé á scríobh na litreach

e. *Tá an litir ag scríobh

This contrasts with behaviour under A'-movement such as clefting or wh-movement, where agreement with the moved element is never observed (even when an agreeing form is available), as illustrated in (6):

(6) a. Tá**-imid** ag dul
COP**-1PL** PROG go.VN
'We are going.'

b. Sinne a=tá ag dul
1PL.EMPH REL=COP.NONAGR PROG go.VN
'It's us who are going.'

c. *Sinne a táimid ag dul

For additional discussion of various aspects of the Irish pattern, see among others Doron (1988), Guilfoyle (1990), Andrews (1990), Legate (1999), Doyle (2007), McCloskey (forthc.) and references therein.

Irish is far from the only language to show complementarity effects along the lines discussed here. Most obviously, we see similar patterns in the other Celtic languages. Scottish Gaelic shows essentially identical behaviour to Irish – see Adger (2010, forthc.) and references therein for discussion. Complementarity effects are also present in the Brythonic languages Welsh (for which see section 3) and Breton (see Weisser 2019 for recent discussion and review). But parallels are not restricted to close relatives of Irish. To give one example, a wide range of languages in the Bantu family (so called 'non-doubling' languages) show comparable effects with object agreement, as in (7). One of the key proposals of this paper is that Irish complementarity can be accounted for in terms of mechanisms proposed for Bantu by Iorio (2014) and van der Wal (2015, 2020, 2022).

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while diachronically these forms are clearly related, there are many reasons to think that they are synchronically separate. Most transparently, they show different morphology in combination with agreement markers - the preposition has particular forms when it displays agreement itself (e.g. 1st person singular *ag-am*, 3rd person singular feminine *aic-i*, etc.), and remains unchanged in combination with a possessive agreement marker (so that we see *ag mo* 'at my [...]', *ag a* 'at her [...]', etc.). The progressive marker has entirely different forms from either of these (e.g. 1st person singular *do mo*, 3rd person *á*, etc.). The progressive marker also shows special morphology under wh-movement, with lenition-triggering *a* appearing in place of *ag*.

(7) *Complementary Object Marking in Lugwere (van der Wal 2020: 199)*

a. Swáya y-á-**mu**-βona
1.Swaya 1SM-FUT-**1OM**-see
'Swaya will see him' (object marker on verb, no overt pronominal object)

b. Swáya y-á-βona óDéo
1.Swaya 1SM-FUT-see 1.Deo
'Swaya will see Deo' (overt non-pronominal object, no object marker on verb)

In Lugwere, as in Irish, a full nominal phrase appears without agreement, while pronominal arguments are indexed on the verb without surfacing overtly in the base argument position. An additional parallel is observable between Irish and some Bantu languages, e.g. Northern Sotho, which shows a similar interaction to Irish between agreement and movement. This is illustrated in (8):

(8) *Northern Sotho Subject Agreement* (Zerbian 2006)

a. Go ja ngwana namune
SM17 eat CL1.child CL9.orange
'The child is eating the orange'

b. Ba-sadi **ba** apea di-jo
CL2-woman **SM2** cook CL8-food
'(The) women are cooking food'

In Northern Sotho, when a full nominal subject surfaces in a low position, the verb does not show noun class agreement with the subject (the agreement marker inserted is instead a default class 17 agreement marker). On the other hand, when the subject moves to the preverbal position, agreement is obligatory. This parallels the distribution of agreement in the Irish progressive, as illustrated in (5) – in Irish, if the internal argument moves by passivisation to precede the aspect marker, agreement surfaces, but if it remains in situ, agreement is blocked.

A parallel is also strikingly present in the distribution of Romance participial agreement, in particular that of Standard Italian (see e.g. Belletti 2006/2017 for a review of the Italian facts). In Italian, as in Irish, an in situ object argument of a participle does not permit agreement. On the other hand, a pronominal object *does* permit agreement, although it does not surface in situ. Finally, an element that is moved from the internal argument position to a subject position also licenses agreement on the participle. As in Irish, this effect is limited to A-movement, and A'-movement of an object does not permit participial agreement. Examples are given in (9):

(9) a. Ho vist-o la lettera
AUX.1SG see.PTCP-M(NONAGR) the.FEM.SG letter
'I have seen the letter'

b. L'-ho vist-**a**
3SG.F.OBJ-AUX.1SG see.PTCP-**F.SG**
'I have seen it [e.g. the letter]'

c. La lettera è stat-**a** vist-**a**
the.FEM.SG letter AUX.3SG PASS.AUX.PTCP-**F.SG.AGR** see.PTCP-**F.SG**
'The letter has been seen'

d. La lettera che ho vist-o
the.FEM.SG letter COMP AUX.1SG see.PTCP-M(NONAGR)
'The letter which I have seen'

One of the goals of this paper will be to provide an account which takes parallels such as these seriously.

1.2 Desiderata for an account of complementarity in Irish

This paper aims to provide an account for the Irish agreement pattern and the parallels discussed here, satisfying the following desiderata:

Desideratum 1: The account is compatible with current approaches to (Minimalist) syntax and the syntax-morphophonology interface.

An approach to the Irish facts that already accounts for many of the phenomena discussed above is already available, namely that of McCloskey and Hale (1984). However, this analysis crucially relies on mechanisms (government and surface filters) which are not assumed in current Minimalist theory, as shown in (10):

(10) *McCloskey and Hale's Account*

a. *Condition on government of* pro (McCloskey and Hale 1984: 525)
*pro unless governed by AGR
[αF] [αF]
where [αF] is some combination of person-number features.

b. *Surface filter on agreement features* (McCloskey and Hale 1984: 526)
*[... X^0 ... NP ...]
[αF] [+pro]
[αF]
if X^0 governs *pro* and if *pro* has phonetic content.

On the other hand, Legate (1999) attempts to offer an account compatible with more recent assumptions in Minimalist theory and Distributed Morphology by supposing that ϕ-features of pronouns are associated with null exponents in the presence of agreement.

(11) *VI entry for null pronoun* (Legate 1999: 233)

$[\varnothing] \leftrightarrow [\alpha\phi]$ / $[\alpha\phi]$

Because the agreement probe is inserted higher than the pronoun, however, this account relies on a process of outside-in cyclic vocabulary insertion, contrary to the subsequent consensus in the DM literature that vocabulary insertion proceeds from the inside outward (see e.g. Bobaljik 2000, Myler 2017).

The assumption of a Minimalist framework here is not intended to dismiss work in other frameworks (e.g. Andrews 1990), but the current article is intended as a contribution to ongoing work in the Minimalist theoretical tradition.

Desideratum 2: The account offers a complete account of the Irish facts outlined above.

As mentioned, McCloskey and Hale's approach captures the facts of Irish. Not only do they account for the distribution of overt arguments with respect to agreement *in situ*, they also correctly predict (though they do not explicitly mention it) that complementarity should be voided under movement operations such as passivisation. They suggest that the failure of agreement under A′-movement receives a natural explanation if we suppose that wh-traces are treated identically to a full nominal phrase (cf. Chomsky 1981).

Subsequent approaches do not quite achieve the same level of coverage. For instance, Legate's (1999) approach, relying as it does on allomorphy in pronouns, does not explain why agreement should be ruled out with full DPs. An alternative family of accounts (e.g. Doron 1988, Ackema and Neeleman 2003) treats Irish agreement marking as simply a prosodically rebracketed pronominal, as in (12).

(12) *Irish pronoun weakening* (Ackema and Neeleman 2003:718)

$\{ \ldots [\text{-N}] \ldots [\text{D (Prt) (Add)} \ldots] \ldots \} \rightarrow$
$\{ \ldots <[\text{-N}] \ldots [\text{D (Prt) (Add)} \ldots]> \ldots \}$

(N.b. $< >$ represent phonological word boundaries, [D (Prt) (Add) ...] is Ackema and Neeleman's representation of a pronominal)

This explains why we do not see agreement with full DPs (since they are prosodically heavy). However, these accounts struggle with the linear position of agreement in the case of object agreement and possessive marking, the highly variable exponence of the marking, and also fail to predict that agreement should be able to surface under movement. Brennan (2009) represents a slightly more sophisticated approach along these lines, which rectifies some of these defects – Brennan provides an explicit account of the 'incorporation' of the pronominal argument in terms of m-merger (Matushansky 2006). Since such operations may feed exponence, the variability observed emerges more naturally. Brennan does not discuss object or possessive marking, but it seems plausible that his m-merger operation could be extended to these cases. While Brennan's approach deals with some of the objections to a 'pronominal' approach to Irish

agreement, it still fails to predict the voiding of complementarity under passivisation movement.

The approach adopted in this paper should aim to achieve at least the same degree of empirical coverage as McCloskey and Hale.

Desideratum 3: The account is naturally extensible to the parallels mentioned above (and beyond).

Existing accounts of Irish tend to treat its behaviour as something of a quirk of the individual language (or perhaps language family). McCloskey and Hale's surface filter and condition on government, for example, are *ad hoc* devices which do not naturally extend beyond Irish (and possibly its close relatives). For Legate (1999), the phenomenon is simply explained by a particular exponence rule. Similar comments can be made regarding pronominal rebracketing rules or m-merger. However, the existence of parallels mentioned above, in languages that are neither typologically similar nor closely connected, either phylogenetically or geographically, suggests that we should seek a deeper explanation to link them.

In the next subsection, I outline an approach which I believe satisfies all of these desiderata.

1.3 The Framework

This paper makes two main claims:

i. Complementarity in Irish (as well as more widely) agreement is best modelled as defective goal 'incorporation' (henceforth DGI; Roberts 2010 et seq., Iorio 2014, van der Wal 2015, 2020, 2022), interacting in some cases with morphological impoverishment.

ii. Certain kinds of movement in Irish (and more widely) involve 'asymmetric chains', composed of a pronominal element in a lower position and a full XP in a higher position. (cf. Takahashi and Hulsey 2009). For concreteness this is implemented using an adaptation of the proposed REDUCE operation (e.g. Sikuku et al. 2018, Yuan 2021, Erlewine and Levin 2021, citing Baker and Kramer ms.)

These claims together help us model the distribution of agreement in Irish and beyond. Here I will present the two mechanisms used together with some motivating background – I will show how these mechanisms account for the facts of Standard Irish in section 2, and will discuss the broader crosslinguistic implications in section 3.

1.3.1 Defective Goal 'Incorporation'

DGI[3] is a mechanism proposed by Roberts (2010, Ch. 3) to explain the distribution of pronominal clitics in Romance languages. It has since been used by Iorio (2014)

[3]Both the abbreviation and the scare quotes are my own – Roberts (2010) and the other references cited here tend to refer to the mechanism as 'incorporation' *tout court*. I have avoided this terminology here in order to avoid suggesting that phenomena that are descriptively labelled as incorporation should generally be accounted for using this mechanism.

and van der Wal (2015, 2020, 2022) to account for complementary agreement patterns in a number of Bantu languages. As mentioned, many Bantu languages (so called 'non-doubling' languages) show clear complementarity effects in their object marking, similar to those seen here in Irish. Let us take the example from Lugwere in (7), repeated in (13):

(13) *Complementary Object Marking in Lugwere (van der Wal 2020: 199)*

a. Swáya y-á-**mu**-βona
1.Swaya 1SM-FUT-**1OM**-see
'Swaya will see him' (object marker on verb, no overt pronominal object)

b. Swáya y-á-βona óDéo
1.Swaya 1SM-FUT-see 1.Deo
'Swaya will see Deo' (overt non-pronominal object, no object marker on verb)

It will be observed that where we see an object marker in the verbal complex, we lack an overt DP object, and that where we see an overt object we lack an object marker. Iorio (2014) and van der Wal (2015, 2020, 2022) account for this sort of pattern by proposing that object markers count as a *defective goal* in the sense of Roberts (2010):

(14) Defective goal:
A goal G is defective iff G's formal features are a proper subset of those of G's Probe P. (Roberts 2010: 62)

In general, an element will constitute a defective goal if a probe agrees with all of its features. For example, Roberts (2010) models Romance object pronominals as being simple bundles of ϕ-features (cf. Déchaine and Wiltschko 2002) – when a ϕ-feature bearing probe such as T agrees with them, the pronominal then constitutes a (proper) subset of the probe's features, as illustrated in (15).

(15) *Subset relation between heads*

$$\left\{ \left[\begin{array}{ll} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{F} \end{array} \right]_{\phi} \right\} \subseteq \left\{ \begin{array}{l} \text{T} \\ \text{TENSE} \quad \text{PST} \\ \left[\begin{array}{ll} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{F} \end{array} \right]_{\phi} \end{array} \right\}$$

Roberts (2010:60) proposes that in this case, the two sets of features behave similarly to copies produced by internal merge (Chomsky 2004). This leads them to undergo the PF-operation of *chain reduction* (cf. Nunes 2004) in an exactly parallel fashion to phrasally-moved elements, in order to render the structure linearisable.

If a set of features constitutes a defective goal, then, the position of the *goal* is the target of chain reduction, and as such the goal is not spelt out. Iorio (2014) and van der Wal (2015, 2020, 2022) further suppose that in other cases, it is the features on

the *probe* which fail to be spelt out. These authors suppose that pronominal objects in languages like Lugwere above are indeed bare ϕ-feature bundles, while full DPs self-evidently contain additional material. This yields a complementary agreement pattern, as illustrated for the sentences in (13) below:

(16)

yá-mu-βona	~~ϕ_{Obj}~~
[ϕ:1]	~~[ϕ:1]~~

(17)

y-á-βona	óDéo
~~[ϕ:1]~~	[ϕ:1]

To summarise the key points regarding the DGI mechanism:[4]

(18) a. Agreement forms *chains* of features (which we will call 'agreement chains'), comparable to the chains of syntactic objects formed by internal merge.

b. If a goal is defective in the sense of (14), chain reduction eliminates the goal and agreeing features are spelt out on the probe (defective goal 'incorporation'; DGI)

c. Otherwise, the agreeing features on the probe are not spelt out.

1.3.2 Asymmetric Chains

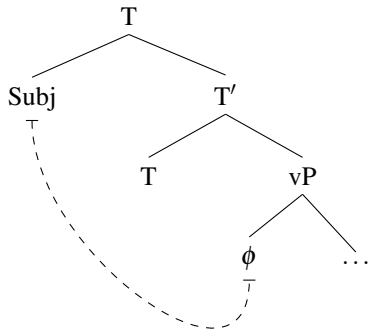
A second proposal here is that certain configurations that would standardly be analysed as simple movement chains are in fact *asymmetric* – rather than a series of identical copies of an element, as the copy theory of movement implies, part of the chain is reduced in some sense, more akin to the traditional notion of a trace. This will be used to account for the obviation of complementarity in Irish under (some) movement. The analysis here is partly inspired by van der Wal's (2022) discussion of *subject marking* in Bantu languages. Whereas in the 'non-doubling' Bantu languages discussed above object agreement typically displays complementarity, subject agreement (as (13) shows) does not. To explain this, van der Wal (2022:204) suggests a possible direction for analysis, namely that "the copy/trace left behind by the moved subject counts as defective".[5]

Let us elaborate on this suggestion. Given what we have said so far this proposal makes sense if the lower copy of a subject DP in examples like (13) has a structure comparable to a pronoun. That is, we have a configuration like the following (where the dashed line represents whatever relationship exists between the elements involved here):

[4]The use of the terms 'probe' and 'goal' here are slight abuses of terminology. In fact at the late stage DGI applies probe-goal relations are no longer relevant – rather we are concerned with upper instances of an agreement chain and lower instances. We will continue (following Roberts 2010 and van der Wal 2022) to use these terms informally as a matter of convenience, however.

[5]In fact this is offered by van der Wal as one of two possible alternatives – the other is that there is a morphological requirement that the subject marker is realised, which interferes with the usual operation of the DGI process. We leave this second alternative aside, as it is of no assistance in analysing the Irish data, which manifestly lacks any such requirement.

(19) *Asymmetric chain*



In fact asymmetric chains of this type, involving a full DP and an element that is some sense pronominal, have been proposed by various authors on a number of independent grounds. One case which seems to straightforwardly involve this sort of configuration on the surface can be seen in the case of *clitic doubling*, where a pronominal element couples with a full nominal phrase lower in the clause, as in the following example from Bulgarian (Harizanov 2014):

(20) *Clitic Doubling in Bulgarian* (adapted from Harizanov 2014: 1036)

Marija mu izprati pismo na rabotnika
Marija 3SG.M.IO sent letter to the.worker

'Marija sent a letter to the worker'

Here the pronominal clitic attached to the verb doubles the full noun phrase located in the indirect object position. Harizanov analyses this configuration as a result of movement (specifically A-movement), with the pronominal form of the clitic emerging from a subsequent operation (specifically morphological merger), producing an asymmetric chain (cf. also Kramer 2014 on Amharic). In this case the upper copy is pronominal while the lower copy is a full nominal.

Asymmetric chains are also proposed for languages such as English by authors such as Takahashi and Hulsey (2009), to account for interpretive properties of A-movement such as the absence of reconstruction effects for binding condition C. Takahashi and Hulsey derive the asymmetric chain via a mechanism they call *Wholesale Late Merger* (WLM), whereby a raised determiner/pronominal element has nominal material merged countercyclically into its complement in its upper copy but not its lower copy. Stanton (2016) makes a convincing argument for the pronominal status of the lower element on the basis of its inability to occur in 'anti-pronominal contexts' (Postal 1998). [6]

[6]The discussion here will focus on the formal morphosyntactic properties of asymmetric chains and will

While these proposals differ in terms of the mechanisms they use to derive these configurations, they have in common that one member of a chain (the upper in the case of clitic doubling, the lower in the case of proposed WLM configurations) is pronominal and the other is a full nominal phrase. This is of course directly comparable to the configuration in (19).

The precise manner of derivation of asymmetric chains is not a major concern of this paper, but for concreteness we will suppose that asymmetric chains are uniformly derived by an operation REDUCE (employed by Sikuku et al. 2018, Yuan 2021, Erlewine and Levin 2021, citing Baker and Kramer ms.).[7] I give Sikuku et al's (2018) formulation below:

(21) REDUCE (based on Sikuku et al. 2018:398, to be revised):
Reduce a copy of an XP to only its head X, a pronoun.

Because in what follows we suppose pronominal elements (or at least the heads of pronominal phrases) to be simple ϕ-bundles, we will modify this slightly:

(22) REDUCE (to be revised further):
Reduce a copy of an XP to only the ϕ-features of its head X, a pronoun.

Under clitic doubling, the reduced copy is the upper one, and in proposed WLM configurations (and the subject chains we see in Bantu, assuming our analysis is correct) it is the lower. Alternatives to REDUCE include WLM and base generation. While I believe that there are reasons to disprefer these mechanisms,[8] these concerns are not conclusive and we will not dwell on them here – the crucial point is simply that we have an asymmetric chain configuration in the first place.

Importantly, REDUCE (or whatever forms an asymmetric chain) feeds DGI. To illustrate, let us consider example (8) from Northern Sotho, repeated below in (23). In Northern Sotho, preverbal subjects trigger agreement, but low (plausibly in-situ) subjects do not.[9]

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generally leave their semantic properties aside, but that is not to say that important questions do not arise one this point – the reader is referred the references cited here (in particular Takahashi and Hulsey 2009, Stanton 2016, Baker and Kramer 2018) for more in depth discussion.

[7] Baker and Kramer's final published version of this paper (Baker and Kramer 2018) does not make use of this operation, though their analysis of Amharic still involves a relation broadly similar to what we call an asymmetric chain here.

[8] In particular, as observed by Sportiche (2019), Wholesale Late Merger countercyclically adds information to the derivation, violating the extension condition of Chomsky (1995), which results in an increase in generative capacity (cf. Kobele and Michaelis 2011), raising concerns about overgeneration. The base generation account raises questions about licensing of the pronominal elements, which are typically located in positions where pronouns cannot otherwise be (case-)licensed or similar. As noted above, the Irish phenomena (and similar facts in Welsh, discussed in section 3) also show different behaviour between base-generated pronouns and the pronominal elements in an asymmetric chain.

[9] The subject marker here is part of the verbal complex and not distinct from the other sorts of Bantu agreement markers van der Wal discusses. Its separation from the verb is a matter of orthographic convention.

(23) *Northern Sotho Subject Agreement* (Zerbian 2006)

a. Go ja ngwana namune
SM17 eat CL1.child CL9.orange
'The child is eating the orange'

b. Ba-sadi **ba** apea di-jo
CL2-woman **SM2** cook CL8-food
'(The) women are cooking food'

In (23a) we see a low subject (noun class 2) and default class 17 agreement on the verb. In (23b), on the other hand, we see a preverbal subject and full agreement with the class 2 subject on the verb. How is this to be derived given our framework? On standard assumptions, in (23a) the subject agreement probe will be expected to locate the subject DP in its c-command domain, valuing its ϕ-features. However, the subject is not a defective goal under the definition in (14), which means DGI does not apply and the agreement features on the probe are not spelt out (we can simply suppose that the default agreement marker is an elsewhere exponent for the probe).

(24) *Postverbal subject*

Go	ja	ngwana	namune	
~~[uϕ:1]~~		[ϕ:1]		(DGI does not apply)

In (23b), on the other hand, the subject raises. Supposing (following our elaboration of van der Wal's suggestion) that subject chains in Bantu languages are generally asymmetric, REDUCE replaces the lower copy with a pronominal element. Unlike the full DP, this pronominal element *is* a defective goal, and consequently undergoes DGI, with its features being spelt out on the probe.

(25) *Preverbal subject*

Ba-sadi	ba	apea	(ba-sadi)	di-jo	
[ϕ:2]	[uϕ:2]		[ϕ:2]		(Configuration before REDUCE)
Ba-sadi	ba	apea	ϕ	di-jo	
[ϕ:2]	[uϕ:2]		[ϕ:2]		(REDUCE applies)
Ba-sadi	ba	apea	~~ϕ~~	di-jo	
[ϕ:2]	[uϕ:2]		~~[ϕ:2]~~		(DGI applies)

An important point to make at this juncture is that not all chains are asymmetric. Proposed WLM configurations are found predominantly under A-movement (a fact that Takahashi and Hulsey 2009 attribute to Case-marking properties), and it is clear that not every language has phenomena like clitic doubling (a point clearly made by Sikuku et al. 2018). The distribution of asymmetric chains, then, is parametrised.[10] In what follows, we will, as a working hypothesis, suppose that asymmetric chains are

[10] There is an important question about what conditions this sort of parametrisation – if Takahashi and Hulsey (2009) are correct in assuming the availability of asymmetric chains to be attributable to Case-marking properties, it is possible that variation in their distribution reduces to variation in Case-marking. See Gong (2023) for evidence along these lines in Mongolian. As a reviewer points out, there are lan-

the norm for A-movement, though different types of A-movement may vary in whether their upper or lower copy is reduced.[11] We will discuss some possible additional points of parametrisation in Section 3.

Some clarification also needs to be made concerning the interaction between REDUCE and DGI. In a sense REDUCE (or any corresponding operation that produces asymmetric chains) 'breaks' the internal merge chain by eliminating the strong identity between the two copies. A question arises concerning other chains in which the items in question are involved, in particular agreement chains (18a). In fact, in the account just sketched for e.g. Northern Sotho, we require that agreement chains are maintained with the lower copy and broken with the upper copy – hence the agreement chain in question satisfies the environment for DGI. For explicitness, we will include this in the definition of REDUCE.[12]

(26) REDUCE (final):
Reduce a copy of an XP to only the ϕ-features of its head X, a pronoun, such that ϕ-agreement chains involving XP are maintained only with the reduced copy.

1.3.3 Other operations

A final crucial (but perhaps less controversial) part of the theoretical framework outlined here concerns impoverishment operations. Impoverishment is a postsyntactic operation used in Distributed Morphology analyses (following Bonet 1991, Halle and Marantz 1993) to implement paradigms where we see neutralisation of morphological distinctions (syncretism). Irish, importantly, shows widespread syncretism in its verbal paradigm. For example, in the simple past of Standard Irish we do not see distinctions between person/number combinations other than the first person plural:

(27) *Standard Irish conjugation of* fan *'wait' in simple past tense*:

	Sg	**Pl**
1	*d'-fhan*	*d'-fhan-**amar***
2	*d'-fhan*	*d'-fhan*
3	*d'-fhan*	*d'-fhan*

guages (e.g. Spanish, as argued by Gallego 2013) which appear to show both object shift (which should have a reduced element 'downstairs') and clitic doubling (with a reduced element 'upstairs'). This would seem to suggest that whatever parametrises REDUCE may differ from construction to construction, as well as language to language.

[11] Asymmetric chains may well not be restricted to cases of A-movement – in particular, Stanton (2016) discusses a range of examples of A′-movement in English which are analysed as involving an asymmetric chain. A reviewer also points out that asymmetric chains might provide a natural explanation of cases where we see pronominal resumption subject to island effects – see Hewett (2023) for an overview. While this paper makes the assumption that A-movement is consistently associated with asymmetric chainhood, no such consistency is presumed crosslinguistically on the part of A′-movement. The extent of parametrisation is left as a topic for future research.

[12] Given the REDUCE formulation, this appears to be somewhat stipulative. This might be considered a point in favour of WLM or base-generation as a mechanism for deriving asymmetric chains – in the former, it is the upper copy which undergoes modification (and so we might expect it to be severed from chains of which it is a part), and in the latter the upper copy would never have been involved in the chains in question in the first place. As mentioned, the precise derivation of asymmetric chains (as opposed to their existence) is not our main concern here, and we will leave the topic aside for now.

These neutralisations are highly dependent on the TAM features of the verb. For example the conditional forms have distinct realisations for all person/number combinations except for 3rd person singular and 2nd person plural.

(28) *Standard Irish conjugation of* fan *'wait' in conditional mood*:

	Sg	**Pl**
1	*d'-fhan-**fainn***	*d'-fhan-**faimis***
2	*d'-fhan-**fá***	*d'-fhan-fadh*
3	*d'-fhan-fadh*	*d'-fhan-**faidís***

These facts must be at least partly morphological in nature – assuming agreement probes to bear unvalued ϕ-features, as standard since Chomsky (2000), we expect them to probe all person-number combinations alike, and so expect uniform agreement rather than the patchy paradigm Irish exhibits. This cannot be resolved by e.g. assuming separate person and number probes which may be absent in some forms, or even more fine-grained distinctions such as probes for participant features – the conditional paradigm in particular requires probing for all individual features (we see agreement with speaker arguments (1sg, 1pl), addressee arguments (2sg), non-participant arguments (3pl), singular arguments (1sg, 2sg) and plural arguments (1pl, 3pl)), but still shows gaps (in particular there are no 2nd person plural forms distinct from 3rd person singular forms).

Under standard Distributed Morphology assumptions, syncretism of the sort observed in Irish can emerge from two main morphological phenomena – an explicit impoverishment operation or underspecification of features in a Vocabulary entry. Previous authors (in particular Legate 1999) have attempted to account for the Irish pattern in terms of vocabulary insertion, but that account does not capture all the facts, as discussed above. By contrast we will show that impoverishment rules, in concert with the DGI operation, deliver the correct results. Below we give the rule which impoverishes 2nd person plural features on a probe:

(29) +addr, -sg $\rightarrow \varnothing$ / [$_{\text{Agr}}$ __]

Assuming a feature inventory along the lines of Arregi and Nevins (2012), the Standard Irish verbal paradigm requires a maximum of six such rules to account for the distribution of person-number distinctions.[13]. The remaining rules are given below:

(30) a. +sg $\rightarrow \varnothing$ / T_{pret} [$_{\text{Agr}}$ __]
b. +sg $\rightarrow \varnothing$ / T_{fut} [$_{\text{Agr}}$ __]
c. -part $\rightarrow \varnothing$ / T_{pret} [$_{\text{Agr}}$ __]
d. -part $\rightarrow \varnothing$ / T_{fut} [$_{\text{Agr}}$ __]
e. -speaker $\rightarrow \varnothing$ / T_{prs} [$_{\text{Agr}}$ __]

[13]It might be possible to reduce this to four if we propose some feature which unifies simple past and future forms (which have the same distribution of agreeing forms). In the best worked-out decomposition of Irish TAM forms (Acquaviva 2014), however, these forms have no distinguishing features in common, so I have not adopted such a proposal here.

Like many morphological properties, rules of this sort may seem rather ad-hoc, but this seems appropriate given that the gaps we see appear arbitrarily across different TAM forms, and also display substantial cross-dialectal variation. The impoverishment rules above (in concert with the ϕ-feature elimination triggered by the failure of DGI) correctly yield the following verbal paradigm with *fan* 'wait':[14]

(31) *Full conjugation of* fan *'wait' in Standard Irish:*

	Simple Past	**Simple Present**	**Future**	**Past Habitual**	**Conditional**
1sg	d'-fhan	fan-**aim**	fan-faidh	d'-fhan-**ainn**	d'-fhan-**fainn**
2sg	d'-fhan	fan-ann	fan-faidh	d'-fhan-**tá**	d'-fhan-**fá**
3sg	d'-fhan	fan-ann	fan-faidh	d'-fhan-adh	d'-fhan-fadh
1pl	d'-fhan-**amar**	fan-**aimid**	fan-**faimid**	d'-fhan-**aimis**	d'-fhan-**faimis**
2pl	d'-fhan	fan-ann	fan-faidh	d'-fhan-adh	d'-fhan-fadh
3pl	d'-fhan	fan-ann	fan-faidh	d'-fhan-**aidís**	d'-fhan-**faidís**

Importantly, we will follow Arregi and Nevins (2012) in supposing impoverishment to precede linearisation operations. As discussed above, chain reduction operations such as DGI are taken to apply as part of the linearisation process, and so we predict that impoverishment will (at least potentially) *bleed* the DGI process. [15]

1.3.4 Architectural arrangement of operations

It may be worth briefly recapitulating the architectural implications of the framework adopted here. We are concerned here with the interaction between four operations. First, Agree, which applies in the narrow-syntax[16] and establishes an agreement chain between two features. Second, DGI, which as a type of Chain Reduction is part of the postsyntactic linearisation algorithm, eliminating features in order to provide a linearisable structure. Third, REDUCE, which creates asymmetric chains from internally merged elements. As asymmetric chains have been proposed (in the literature discussed above) largely on the basis of their interpretive effects, and because we propose them here to have an overt impact on form, they must be present in the narrow syntax

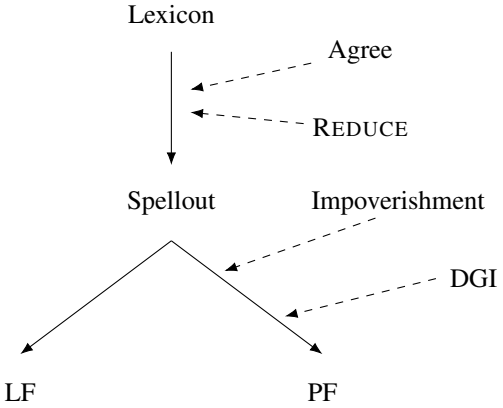
[14]It should be emphasised that this paradigm is only that of Standard Irish (*An Caighdeán Oifigiúil*), and that other varieties show more agreement (varieties of Munster Irish, for example, may have agreeing forms available for all cells except third person singular) or less (varieties of Ulster Irish may show agreement only in Past Habitual/Conditional forms). See e.g. McCloskey and Hale (1984), Ó Siadhail (1989), Andrews (1990) for a broader cross-dialectal picture. Generally speaking, these varieties otherwise show comparable behaviour to Standard Irish, as discussed in the introduction, but see McCloskey and Hale, and footnote 39 below for some complications.

[15]Commenting on a previous version of this paper, a reviewer expresses concern that by attributing the failure of DGI to impoverishment rules simply constitutes a shifting of the explanatory burden to the morphology. It should be underlined that there are two things to be accounted for – first, the patchy nature of the Irish verbal paradigm, which naturally lends itself to explanation in terms of impoverishment, and second, the failure of DGI with non-agreeing forms. The point made here is that given the current framework, if we use impoverishment rules to account for the paradigmatic facts, then we *do not require* an additional explanation for the failure of DGI, and the set of explananda is reduced. We do not address the question of why Irish should have the set of impoverishment rules it displays in subject agreement, but it seems plausible that (as with other instances of impoverishment crosslinguistically) diachronic contingencies play a major role.

[16]If strictly following a model along the lines of Arregi and Nevins (2012), we might further decompose the Agree operation into a narrow-syntactic AGREE-LINK and a postsyntactic AGREE-COPY. As this has no particular implications for the our purposes, however, we put this possibility aside here.

– as such we must assume that REDUCE applies at this stage. Finally, Impoverishment, which is uncontroversially taken to be a post-syntactic operation, and is assumed here (following Arregi and Nevins 2012) to precede linearisation operations, including DGI. These assumptions are illustrated in a standard Y-model diagram in (32).

(32) *Placement of Operations in Y-model*



The placement of these operations has empirical consequences – operations on the PF branch should generally not have semantic effects, for example, while operations in the narrow syntax may. The crucial points for the analysis here are the ordered interactions that result from the assumed architecture, in particular that REDUCE and Impoverishment precede DGI, respectively feeding and bleeding the reduction of Agreement chains. The location of Agree with respect to REDUCE is less crucial, but in all the cases discussed here, the Internal Merge operation that triggers REDUCE seems to follow Agreement.

2 Accounting for the Irish Pattern

In what follows we show that the mechanisms above, implementing DGI and producing asymmetric chains, correctly account for the patterning of Irish agreement generally and more specifically in the progressive forms of interest to us here.

2.1 Complementarity in Irish

Complementary agreement in Irish can be modelled as a straightforward consequence of DGI, exactly parallel to the behaviour of non-doubling Bantu languages discussed above. Let us consider a simple case of a preposition showing 3rd person plural agreement, which blocks the appearance of an overt 3rd person plural pronoun.

(33) ac-**u** (*siad)
at-**3PL.AGR** (*3PL)
'at them', 'in their possession'

Given DGI, this is straightforwardly accounted for. The preposition acts as an agreement probe with a pronominal goal, assumed here to be a bundle of ϕ-features.[17] The probe is involved in an agreement chain with the goal, but constitutes a superset of its features, consequently triggering DGI and deleting the pronominal element at PF.

(34) *Agreeing adposition with pronominal complement*

P	ϕ	
[uϕ]	[ϕ: 3pl]	(Configuration before Agree)
P	ϕ	
[uϕ: 3pl]	[ϕ: 3pl]	(Agree applies)
P	~~ϕ~~	
[uϕ: 3pl]	~~[ϕ: 3pl]~~	(DGI applies)
ac-u	$\varnothing$	(Vocabulary Insertion)

Full DPs are plausibly richer in content – in particular we can suppose that they have a full D head as their outer phi-feature bearing head (cf. e.g. Danon 2011, Kobayashi 2022) which bears a contrastive definiteness feature. This means that neither the DP as a whole nor its head constitute a defective goal for these purposes. As such agreeing features on the probe are not spelt out, following (18).[18]

(35) ag na daoine úd
at.NAGR the.PL people DEM.DIST
'at those people', 'in those people's possession'

(36) *Agreeing adposition with full DP complement*

P	D	NP	
[uϕ]	[Def:+, ϕ: 3pl]	...	(Configuration before Agree)
P	D	NP	
[uϕ: 3pl]	[Def:+, ϕ: 3pl]	...	(Agree applies)
P	D	NP	
~~[uϕ: 3pl]~~	[Def:+, ϕ: 3pl]	...	(DGI does not apply)
ag	na	daoine úd	(Vocabulary Insertion)

As mentioned above, finite subject-verb agreement patterns in Irish have more-or-less arbitrary paradigmatic gaps, depending on the TAM and ϕ-features in question.

[17] Alternatively we could assume the pronominal to be a D head and agreement probes to bear a D feature. The approach taken simplifies certain aspects of the analysis, in particular rendering the distinction between full DPs and pronominal phrases straightforward, as well as making the approach unproblematically compatible with van der Wal's (2022) account of 'non-doubling' Bantu languages, but it seems probable that a corresponding analysis which took pronouns to be D heads could be made to work.

[18] One issue I do not discuss here concerns the nature of Case assignment. I do not wish to commit to a particular model of Case here, but one possibility is that Case features form part of the agreement chain between the pronoun and the probe, and are consequently subject to DGI in the same way as ϕ-features.

We suppose that these gaps are the result of impoverishment operations, which (as discussed in section 1.3.4) we suppose to precede linearisation operations, including chain reduction, of which DGI is a subtype. This means that these operations potentially *bleed* DGI, leading in a contrast between forms (traditionally called 'synthetic' forms) which display agreement and are incompatible with overt pronominal subjects, and those ('analytic') forms which have no surface agreement but require an overt pronominal subject.

In synthetic forms, matters proceed exactly as in (34) with prepositions – the subject agreement probe constitutes a superset of the features of the ϕ-bundle with which it agrees, and consequently triggers DGI which leads to the elimination of the pronominal element at PF.

(37) Rinne-**amar** (*sinn) é sin
do-**PST.1PL** (*1PL) 3SG DEM.MED
'We did that.'

(38) *Agreeing finite verb with pronominal subject*

V+SubjProbe	ϕ	...	
[uϕ]	[ϕ: 1pl]	...	(Configuration before Agree)
V+SubjProbe	ϕ	...	
[uϕ: 1pl]	[ϕ: 1pl]	...	(Agree applies)
V+SubjProbe	~~ϕ~~	...	
[uϕ: 1pl]	~~[ϕ: 1pl]~~	...	(DGI applies)
Rinne-amar	∅	é sin	(Vocabulary Insertion)

In *analytic* forms, we suppose, an impoverishment rule applies which eliminates some of the ϕ features on the probe. This means that the probe *no longer* constitutes a superset of the the features on the goal at the point where DGI would apply. This being the case, the pronoun is retained and it is the features of the *probe* which are not spelt out at PF.

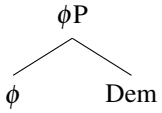
(39) Rinne *(siad) é sin
do.NAGR *(3PL) 3SG DEM.MED
'They did that.'

(40) *Impoverished finite verb with pronominal subject*

V+SubjProbe	ϕ	...	
[uϕ]	[ϕ: 3pl]	...	(Configuration before Agree)
V+SubjProbe	ϕ	...	
[uϕ: 3pl]	[ϕ: 3pl]	...	(Agree applies)
V+SubjProbe	ϕ	...	
~~[uϕ: 3pl]~~	[ϕ: 3pl]	...	(Impoverishment applies)
V+SubjProbe	ϕ	...	
	[ϕ: 3pl]	...	(DGI does not apply)
Rinne	siad	é sin	(Vocabulary Insertion)

A final case that is worth considering involves elements that would otherwise form a constituent with the pronoun but are stranded as a result of DGI. Such elements include demonstratives, reflexive markers, emphatic markers, coordinands and quantifiers – e.g. a demonstrative appears in the object position in (39). We suppose that the object in this utterance has the following structure:[19]

(41) *Pronoun modified by demonstrative*



In these structures, Agreement targets the head ϕ-bundle, and it is this ϕ-bundle which is subject to DGI. This eliminates the ϕ head and licenses the appearance of ϕ-features on the probe, but leaves other elements in the constituent, in this case the demonstrative, in situ. The relevant derivation is shown in (43). In cases where agreement does not apply, the ϕ-head surfaces, giving forms like *í seo* (3SG.F this) 'this one (fem.)' – forms like this can be seen in (37, 39), for example.

(42) Tá mé **á** scríobh seo
AUX.PRS 1SG **PROG.3SG.F** write.VN DEM.PROX
'I am writing this'

[19]This is the simplest imaginable structure for these sorts of elements – more complex structures are not ruled out here. The crucial point is that the ϕ-bundle is accessible to a probe.

(43) *Object probe with stranding*

	…	Asp+ObjProbe	V	[$_{\phi P}$ ϕ	Dem]	
	…	[uϕ]		[Def: +, ϕ:3sgf]		(Configuration before Agree)
	…	Asp+ObjProbe	V	[$_{\phi P}$ ϕ	Dem]	
	…	[uϕ:3sgf]		[Def: +, ϕ:3sgf]		(Agree applies)
…		Asp+ObjProbe	V	[$_{\phi P}$ ~~ϕ~~	Dem]	
…		[uϕ:3sgf]		~~[ϕ:3sgf]~~		(DGI applies)
Tá	mé	á	scríobh	∅	seo	(Vocabulary Insertion)

DGI, in combination with impoverishment rules, then, readily accounts for complementarity in Irish agreement. It is not sufficient on its own, however, to explain the fact that complementarity is obviated under certain types of movement. We now turn to this problem.

2.2 Voiding of Complementarity

The fact that complementarity of agreement in Irish is voided under passivisation follows directly from the proposal that a passivised argument forms an asymmetric chain (implemented here for illustrative purposes using REDUCE), in combination with the DGI account for complementarity above.

As observed in section 1.3.4, where asymmetric chains are proposed, they are established early in the derivation – Takahashi and Hulsey's WLM, for example, is taken to apply in the narrow syntax as it feeds LF. It is also crucial for Baker and Kramer's (2018) account of clitic doubling that clitic doubles are interpreted as pronouns at LF. Whatever operation we use to implement an asymmetric chain, then, it precedes Spellout and as such PF operations, including DGI.[20]

This alone allows us to correctly derive the facts, as shown overleaf in (44, 45). An aspectual ϕ-probe agrees with the internal argument, which then undergoes movement. The exact motivation for movement under passivisation is not crucial here but we can assume that it is triggered by similar considerations to languages such as English, e.g. the failure of a Voice head to license an internal argument/assign Case, with the difference being that this alternation is not marked overtly.[21] At some point before Spellout, REDUCE applies, establishing an asymmetric chain. The lower element in the chain is

[20] A side point worth noting here is that although REDUCE eliminates the strong identity between upper and lower copies, severing agreement chains with the upper copy as discussed above, the Irish facts show that a relation beyond simple binding must be retained between the elements of an asymmetric chain. As a reviewer observes, one difference between a passive structure and an active transitive structure is that in the latter, the aspect phrase may be clefted, but not in the former, so that we can say ***Á*** *scríobh a=tá siad* (**PROG.3SG** write REL=AUX 3PL) 'they are writing it' but not ***Á*** *scríobh a=tá sé* (**PROG.3SG** write REL=AUX 3SG.M) with the meaning 'It is being written.' It seems that this is more than a simple case of a binding condition A violation – reflexive forms may readily be clefted, e.g. *Fú-**m** féin a=tá mé ag caint* (about-**1SG** REFL REL=AUX 1SG PROG speak.VN) 'It's myself that I am talking about.'

[21] An interesting question, not addressed here, is why the Passive in Irish is aspectually restricted, unlike its English counterpart. One possibility is that the passive Voice head interferes with head movement of the verb to its finite position.

then capable of serving as a defective goal for the agreement probe, which constitutes a superset (just as it does for underived pronouns) of the features of the goal. This triggers DGI, which eliminates the lower element of the asymmetric chain and permits the spellout of the agreeing features on the probe.[22]

Where a full DP does *not* undergo movement, or alternatively where it undergoes a type of movement (e.g. A′-movement) which does not cause an asymmetric chain to be established, the goal is not defective, meaning that DGI does not apply and the features on the probe are not spelt out.

(46) Bhí Bríd ag déanamh na hoibre uilig
be.PST.NAGR Bríd PROG.NAGR do.VN the work all
'Bríd was doing all the work.'

(47) *Object probe without passivisation*

…	Asp+ObjProbe	V	DP	
…	[uϕ]		[Def: +, ϕ:3sgf]	(Configuration before Agree)
…	Asp+ObjProbe	V	DP	
…	[uϕ:3sgf]		[Def: +, ϕ:3sgf]	(Agree applies)
…	Asp+ObjProbe	V	DP	
…	[uϕ:3sgf]		[Def: +, ϕ:3sgf]	(REDUCE applies)
…	Asp+ObjProbe	V	DP	
…	~~[uϕ:3sgf]~~		[Def: +, ϕ:3sgf]	(DGI does not apply)
Bhí Bríd	ag	déanamh	na hoibre uilig	(Vocabulary Insertion)

To conclude, the presence of an asymmetric chain (implemented here using REDUCE) together with the account above captures the Irish facts straightforwardly.

2.3 Ā-movement

We noted above that A′-movement does not void agreement complementarity effects in Irish. Indeed, in general A′-movement has the opposite effect: it triggers *anti*-agreement effects (see Ouhalla 1993, Baier 2017, Erlewine 2020 for discussion of such effects crosslinguistically). In this section we will account for this by supposing that, in Irish, A′-movement does not involve asymmetric chains, but rather involves a symmetric chain derived directly through internal merge.

We will suppose, following McCloskey (2002), that A′-dependencies in Irish involve movement of a null operator (Op). Consider the following example, which illustrates an A′ dependency (namely, a cleft) involving a subject pronoun.

[22]The application of REDUCE also has the result that elements in the pronominal phrase that would otherwise be 'stranded' under agreement (e.g. demonstratives, quantifiers, emphatic particles, reflexive particles, etc.) are eliminated – as a reviewer observes, we can have active examples like *Tá siad **á** scríobh seo* (AUX 3PL **PROG.3SG** write.VN DEM.PROX) 'They are writing this', with a stranded element, but an example like **Tá sé **á** scríobh seo* (AUX 3SG.M **PROG.3SG** write.VN DEM.PROX) is ungrammatical with the reading 'This is being written'. This is predicted by our analysis.

(44) Tá an t-athrú seo **á** dhéanamh
be.PRS.NAGR the change DEM.PROX **PROG.3SG.M** do.VN
'This change is being made.'

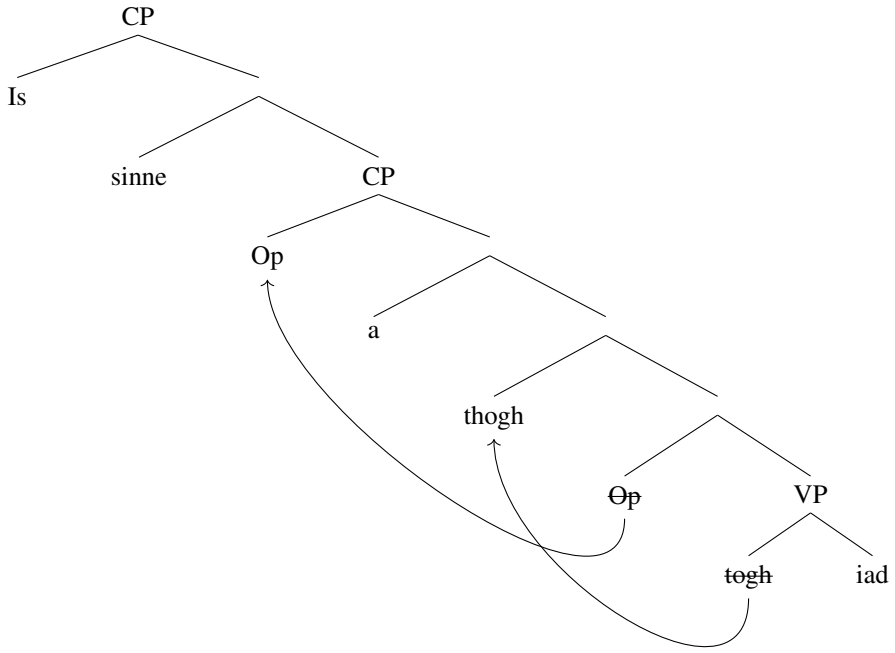
(45) *Object probe with passivisation*

	…	Asp+ObjProbe	V	DP	
	…	[uϕ]		[Def: +, ϕ:3sgm]	(Configuration before Agree)
	…	Asp+ObjProbe	V	DP	
	…	[uϕ:3sgm]		[Def: +, ϕ:3sgm]	(Agree applies)
…	DP	Asp+ObjProbe	V	DP	
…	[Def: +, ϕ: 3sgm]	[uϕ:3sgm]		[Def: +, ϕ:3sgm]	(Internal merge applies)
…	DP	Asp+ObjProbe	V	ϕ	
…	[Def: +, ϕ: 3sgm]	[uϕ:3sgm]		[ϕ:3sgm]	(REDUCE applies)
…	DP	Asp+ObjProbe	V	~~ϕ~~	
…	[Def: +, ϕ: 3sgm]	[uϕ:3sgm]		~~[ϕ:3sgm]~~	(DGI applies)
Tá	an t-athrú seo	á	dhéanamh	$\varnothing$	(Vocabulary Insertion)

(48) Is sinne a thogh iad
COP 1PL.EMPH REL choose.PST.NONAGR 3PL
'It's us that chose them' (*Is sinne a thogh-**amar** iad)

This, we assume, involves something like the structure below:

(49) *Structure of Irish subject cleft*



What accounts for the absence of agreement in these structures? A simple answer (following e.g. Baier 2017) is that A′-operators are structurally richer than bare pronominals, meaning that the former do not constitute defective goals for ϕ-probes as the latter do, and so do not trigger DGI,with the consequence that agreement is not spelt out on the probe.

For this to work, it is crucial that A′-movement does not trigger REDUCE, which would turn the lower copy of the operator into a bare ϕ-bundle and render it a defective goal, incorrectly allowing features to surface via DGI. This is not surprising given that, as mentioned above, A′-movement often (though not always) seems to lack the interpretive properties associated with asymmetric chains (cf. Takahashi and Hulsey 2009, Stanton 2016). An alternative analysis which might seem to be desirable would be to say that operators simply lack ϕ-features, (cf. Adger and Ramchand 2005). This cannot be correct, however – if Op undergoes *passivization* it triggers agreement on the progressive marker, implying that it has ϕ-features and may undergo REDUCE under A-movement.

Consider the derivation of the example overleaf (50, 51), which involves both passivization and an A′-dependency. For expository convenience we can assume that REDUCE applies immediately after Internal Merge, but we could equally propose that it applies at the phase level. I will represent the A′-features as [wh:+], which is not to rule out the possible presence of other A′-features. The present approach obtains the correct results.

A reviewer suggests an alternative analysis – the sorts of A′ constructions we are discussing here involve a relative complementiser *a* (triggering a lenition mutation on the following verb). In various parts of the Irish verbal paradigm (varying by dialect), the verb takes a special form following this particle – the reviewer gives the following example:

(52) Muid=e a bhí-os ag labhairt
1PL=EMPH.1PL REL AUX.HAB-PRES.REL PROG.NONAGR speak.VN
na Gaeilge
the.F.GEN Irish
'We who (habitually) speak Irish...'

The reviewer suggests that the failure of agreement is in fact a manifestation of this sort of relative morphology. The problem with this explanation can be seen when we consider *object* extraction. These involve the same relative particle as subject relatives, which likewise triggers relative forms of the verb, for example in the future:

(53) Cad a dhéan-fas mé ?
what REL do-FUT.REL 1SG ?
'What will I do?'

However, subject agreement is entirely licit in this position where available, as in the conditional mood:

(54) Cad a dhéan-**fainn** ?
what REL do-**COND.1SG** ?
'What would I do?'

The failure of agreement, then, is specifically to do with the movement of the subject and *not* a consequence of the morphology of the verb. The analysis given above takes this into account.

2.4 Residual Questions

2.4.1 Unaccusatives

A question arises in our account of concerning the behaviour of *unaccusatives*. If A-movement triggers agreement with an internal argument, and unaccusatives involve internal arguments, we expect agreement to be present with unaccusatives. However in Irish verbs corresponding to English unaccusatives tend not to trigger agreement in progressives, as illustrated in (55) The largest set of these are are labelled 'putative'

(50) *A versus A′ dependencies*

Is iad a bhí-odh **á** n-aistriú
COP 3PL REL be-PST.HAB.NONAGR **PROG.3PL** translate.VN

'They were what was being translated' (*Is iad a bhí-**dís** á n-aistriú)]

(51) *Deriving the distinction*

…					Asp+ObjProbe	V	Op	
…					[uϕ]		[wh:+, ϕ:3pl]	(Configuration before object agreement)
…					Asp+ObjProbe	V	Op	
…					[uϕ:3pl]		[wh:+, ϕ:3pl]	(Agree applies)
…				Op	Asp+ObjProbe	V	Op	
…				[wh:+, ϕ:3pl]	[uϕ:3pl]		[wh:+, ϕ:3pl]	(Internal merge applies)
…				Op	Asp+ObjProbe	V	ϕ	
…				[wh:+, ϕ:3pl]	[uϕ:3pl]		[ϕ:3pl]	(REDUCE applies)
…			SubjProbe	Op	Asp+ObjProbe	V	ϕ	
…			[uϕ]	[wh:+, ϕ:3pl]	[uϕ:3pl]		[ϕ:3pl]	(Merge of subject probe)
…			SubjProbe	Op	Asp+ObjProbe	V	ϕ	
…			[uϕ:3pl]	[wh:+, ϕ:3pl]	[uϕ:3pl]		[ϕ:3pl]	(Agree applies)
…		C	SubjProbe	Op	Asp+ObjProbe	V	ϕ	
…			[uϕ:3pl]	[wh:+, ϕ:3pl]	[uϕ:3pl]		[ϕ:3pl]	(Merge of C)
…	Op	C	SubjProbe	Op	Asp+ObjProbe	V	ϕ	
…	[wh:+, ϕ:3pl]		[uϕ:3pl]	[wh:+, ϕ:3pl]	[uϕ:3pl]		[ϕ:3pl]	(Internal merge applies)
…	Op	C	SubjProbe	Op	Asp+ObjProbe	V	ϕ	
…	[wh:+, ϕ:3pl]		[uϕ:3pl]	[wh:+, ϕ:3pl]	[uϕ:3pl]		[ϕ:3pl]	(REDUCE does not apply)
…	Op	C	SubjProbe	Op	Asp+ObjProbe	V	~~ϕ~~	
…	[wh:+, ϕ:3pl]		~~[uϕ:3pl]~~	[wh:+, ϕ:3pl]	[uϕ:3pl]		~~[ϕ:3pl]~~	(DGI applies only to lower copy)
…	Op	C	SubjProbe	~~Op~~	Asp+ObjProbe	V	~~ϕ~~	
…	[wh:+, ϕ:3pl]		~~[uϕ:3pl]~~	~~[wh:+, ϕ:3pl]~~	[uϕ:3pl]		~~[ϕ:3pl]~~	(Copy deletion)
Is iad	∅	a	bhíodh	∅	á	n-aistriú	∅	(Vocabulary insertion)

unaccusatives by McCloskey (1996). As the name 'putative' unaccusatives suggests, it is difficult to find diagnostics in Irish that these verbs are distinct from unergatives – a fact noted by McCloskey, who states that 'these verbs bear no obvious formal mark of being different syntactically from any other intransitive' (McCloskey 1996, p.251). This can be contrasted with another set of 'salient' unaccusatives, which clearly do lack an external argument – in these forms, however, the internal argument is marked in situ with a preposition and as such would not be expected to trigger internal argument agreement on the aspect marker, as in (56). However, a relatively small set of stative unaccusatives *does* display agreement with the subject, also showing special aspectual marking, as in (57). Adger (2020) gives an analysis of the Scottish Gaelic analogue of this phenomenon, which has essentially the same properties as the Irish forms discussed here. Adger proposes that the agreement in a stative unaccusative form is a signature of movement over the aspectual head, noting the parallel to Romance participial agreement discussed in the introduction and in the next section. On the other hand, he takes non-agreeing intransitives in general to involve a high base position of the argument, above the aspectual marking (hence not triggering agreement with the progressive marker). We can assume something like Adger's analysis here.

(55) *Non-agreeing 'putative' unaccusatives in Irish*

Tá mé ag teacht
be.PRS 1SG PROG.NONAGR come.VN

'I am coming' (**Tá mé do* ***mo*** *theacht*)

(56) *'Salient' unaccusatives in Irish* (McCloskey 1996)

Neartaigh ar a ghlór
strengthen.PST on 3SG.POSS voice

'His voice strengthened'

(57) *Agreeing stative unaccusatives in Irish*

Tá siad-san in=**a** gcodladh
be.PRS 3PL-EMPH STAT=**3PL.AGR** sleep.VN

'*They* are sleeping'

The cases where unaccusatives do trigger agreement are readily compatible with the analysis outlined here. These are taken to involve A-movement of internal arguments to a higher position, which we would expect to trigger REDUCE and feed DGI, consequently resulting in agreement. We give a potential derivation of an Irish stative unaccusative below.[23]

[23]There may be some reason to believe that stative unaccusatives have some structural differences from passives, however. In particular, while passives resist clefting, as discussed in footnote 20, stative unaccusatives readily undergo clefting, e.g. *In-a chodladh a bhí sé.* (STAT-3SG.M.AGR sleep.VN REL be.PST 3SG.M) 'He was sleeping.' I do not have a suggested explanation for this fact.

(58)

	...	Asp+ObjProbe	V	ϕP	
	...	[uϕ]		[ϕ:3pl]	(Configuration before Agree)
	...	Asp+ObjProbe	V	ϕP	
	...	[uϕ:3pl]		[ϕ:3pl]	(Agree applies)
...	ϕP	Asp+ObjProbe	V	ϕP	
...	[ϕ:3pl]	[uϕ:3pl]		[3pl]	(Internal merge applies)
...	ϕP	Asp+ObjProbe	V	ϕ	
...	[ϕ:3pl]	[uϕ:3pl]		[ϕ:3pl]	(REDUCE applies)
...	ϕP	Asp+ObjProbe	V	~~ϕ~~	
...	[ϕ:3pl]	[uϕ:3pl]		~~[ϕ:3pl]~~	(DGI applies)
Tá	siad-san	ina	gcoladh	$\varnothing$	(Vocabulary Insertion)

2.4.2 The position of the subject probe in Irish

Our approach predicts an asymmetry between SVO languages like English and VSO languages like Irish. In the former, external arguments undergo A-movement to a position which precedes the subject probe, we expect these languages to trigger REDUCE of their lower copy, which in turn feeds DGI. We consequently do not expect complementarity between agreement and full DPs in these languages. On the other hand, in languages where the subject probe lies above the landing site of the subject, we expect that the subject probe will establish an agreement relation with a DP in that landing site, which is not reduced and consequently does not permit DGI, meaning that the agreement features on the probe are not spelt out. In these languages, then, we expect complementarity between full DPs and subject-verb agreement, as in fact we observe in Irish.

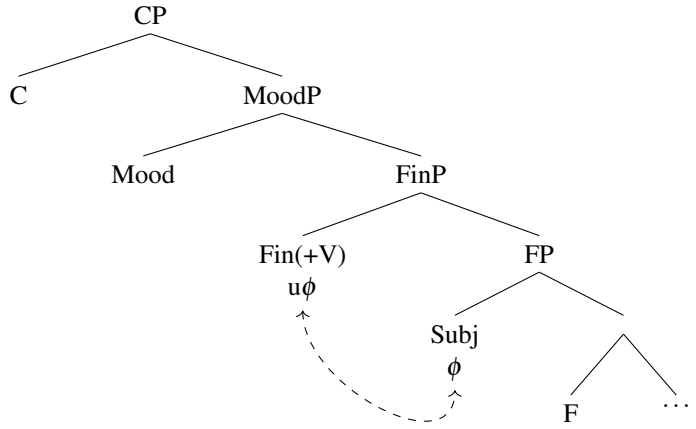
More accurately, this is predicted if we assume that the *prima facie* positions of agreeing ϕ-features reflect their base positions. As such it may be worth noting that our approach is *not* compatible with every analysis of Irish clause structure. In particular, McCloskey (2017) and Bennett et al. (2019) propose that the subject DP in Irish typically occupies a SpecTP position (as it does in English) and that the head of this TP is also the location of the subject probe in Irish. The probe then moves with the rest of the verbal complex to adjoin to a high polarity head. If this was indeed correct, our approach would (wrongly) predict that an Agreement chain should be established with the reduced lower copy of the subject, feeding DGI and consequently obviating any complementarity effect.

On the other hand, an approach such as that of Acquaviva (2014), whereby subject agreement features are located relatively high in a Finiteness/Polarity head, above the subject's landing site,[24] is straightforwardly compatible with the analysis we offer

[24]Another configuration compatible with the analysis here is that of Roberts (2005), whereby agreement morphology is hosted in a dedicated Agreement head above the subject position, though Roberts (whose

here. It is worth noting that empirical evidence for locating subject agreement features below the subject DP in Irish is quite slim – these features never manifest overtly in this position, but are consistently realised above the subject argument, if they are realised at all. Furthermore, as McCloskey (2017) observes, the approach whereby tense (and agreement) morphology is generated below the landing site of the subject runs into problems with identity requirements on ellipsis – the constituent containing the subject may be elided regardless of whether tense features of the clause match. While McCloskey offers something of a solution to this problem in terms of binding by a tense head higher in the clause, the details of the solution are sketchy (McCloskey states that they are a 'little more than a promissory note'), and we should continue to take the problem seriously.[25] Insofar as the predictions made by the analysis here are accurate given the surface sequencing of elements, we take this to be evidence for a structure more along the lines of that suggested by Acquaviva, at least as far as the relative positions of subject probes are concerned. Provisionally, then, we have something like the following structure:[26]

(59) *Assumed subject position in Irish*



All things being equal, we make a broad prediction that SVO languages should typically not show any complementarity effects with subject agreement but that VSO languages should, though exceptions may emerge in various ways, including the movement of a probe as discussed in this section. In SVO languages, we expect complementarity to be typical of object agreement (where it appears) but not of subject agree-

focus is Welsh rather than Irish – see section 3 for discussion) adopts a very different approach to complementarity.

[25]Rudin (2019) alludes to another possible solution to this problem in terms of his analysis of sluicing, which restricts the identity condition to the 'eventive core' of a clause, but likewise does not go into detail on the Irish case.

[26]We do not follow Acquaviva in supposing a tense head independent of the endings, which hosts e.g. the preverbal past marker *do*, in large part because this would be subject to the same concerns of identity under ellipsis as tense suffixes. Instead we follow McCloskey in placing this marker in a higher head which Ostrove (2018) labels Mood. We remain agnostic about the head that generally hosts the subject, simply labelling it FP, but note that (as discussed by McCloskey 2014) it seems to have effects relating to definiteness.

ment.[27] We will see various additional exceptions and complications to this picture in what follows, but it will be shown that the approach taken by this paper still offers useful insights.

3 Extensions

Having outlined our analysis for Irish, it will be worthwhile briefly considering how this analysis might be extended to other languages. We start by considering Italian, where (as noted in the introduction), participial agreement shares a number of properties with internal argument agreement in Irish progressives. We then discuss patterns of agreement in close relatives of Irish and Italian, namely Welsh and French respectively – here we see a slightly different pattern, but the respective variation in the Celtic and Romance languages is again strikingly similar. Finally, we go on to consider the Welsh case in more detail – Welsh shows a pattern of 'partial' complementarity, where agreement is in complementary distribution with full DPs but not with (all) pronouns. I suggest that this can be dealt with using additional mechanisms proposed by van der Wal (2022) for the so-called 'doubling' languages in the Bantu family. I further suggest that this structure may also be involved in certain residual cases (in particular *in situ* subjects) in Italian.

3.1 Participial (and other) Agreement in Italian

Italian participial agreement shows a very similar distribution of agreement to Irish progressive agreement:

- Full DPs do not trigger agreement *in situ* or under A′-movement.[28]
- Pronominal elements trigger agreement.
- Agreement with a full DP is permitted under passivisation (as well as stative unaccusatives in Irish and most unaccusatives in Italian).

These properties are illustrated in (60), repeated from (9).

[27] Because SOV languages do not straightforwardly indicate distinctions in structural height via word order, we predict that complementarity will appear variably in these languages.

[28] There is a possible exception to this in the form of low postverbal subjects, which *may* trigger agreement, but only in forms which would otherwise be expected to trigger A-movement.

(60) a. Ho vist-o la lettera
AUX.1SG see.PTCP-M(NONAGR) the.FEM.SG letter
'I have seen the letter'

b. L'-ho vist-**a**
3SG.F.OBJ-AUX.1SG see.PTCP-**F.SG**
'I have seen it [e.g. the letter]'

c. La lettera è stat-**a** vist-**a**
the.FEM.SG letter AUX.3SG PASS.AUX.PTCP-**F.SG.AGR** see.PTCP-**F.SG**
'The letter has been seen'

d. La lettera che ho vist-o
the.FEM.SG letter COMP AUX.1SG see.PTCP-M(NONAGR)
'The letter which I have seen'

If we take this parallelism seriously (as I believe we should), we might look for a single mechanism to account for the Italian and Irish agreement patterns. It will be shown here that the account developed for Irish can be extended to Italian with minimal modification.[29] It will also be shown that an *absence* of complementarity with subject agreement in Italian is predicted by the framework.

The broad analysis of the facts is identical – A-movement and in particular passivisation involves an *asymmetric chain*, the creation of which feeds the DGI process, which leads to the overt realisation of agreement features on the object probe(s). In the absence of an asymmetric chain DGI cannot apply, which leads to the agreeing features on probes being unrealised. There are two substantial points of difference in Italian: Firstly, there may be multiple probes for a single argument in Italian. Secondly, the subject typically moves above the subject probe in Italian.

Take (60b) as an example. Just as in Irish, we see agreement with the passivised internal argument,[30] in this case realised as participial agreement. This is illustrated in (61) overleaf.

The only difference between the Irish derivation and the Italian one is that DGI reduces several agreement chains simultaneously, including the one involving the subject probe which agrees with the passivised subject. We will return to this last point shortly. Let us contrast this derivation with one where the internal argument remains in situ.

(62) L'=insegnante ha loda-t-o gli
the(M.SG)=teacher AUX.PERF.3SG praise-PTCP-M(NONAGR) the.M.PL
studenti
student.PL

[29]On the other hand, recent accounts developed for Italian and other Romance varieties (e.g. Belletti 2006/2017, D'Alessandro and Roberts 2008, Longenbaugh 2019, Kobayashi 2022) cannot readily be extended to Irish, because they crucially rely on *movement* of a pronominal argument to explain why they can trigger agreement. There is not any evidence in Irish that pronouns move to a higher position, however – as discussed above, elements associated with a pronominal argument (quantifiers, demonstratives, coordinands, etc.) all appear *in situ*. Movement (including movement that is not otherwise possible, e.g. out of coordinate islands) would have to be imposed as an additional stipulation.

[30]Unlike Irish, this agreement also appears with unaccusative verbs, which (again unlike Irish) form an independently diagnosable morphosyntactic class, e.g. by triggering the insertion of *essere* as a perfect auxiliary.

(61) *Object probes with passivisation*

	T+SubjProbe [uϕ]	Asp+ObjProbe [uϕ]	V+Voice+ObjProbe [uϕ]	DP [Def: +, ϕ:3sgf]	(Configuration before Agree)
	T+SubjProbe [uϕ:3sgf]	Asp+ObjProbe [uϕ:3sgf]	V+Voice+ObjProbe [uϕ:3sgf]	DP [Def: +, ϕ:3sgf]	(Agree applies)
DP [Def:+, ϕ: 3sgf]	T+SubjProbe [uϕ:3sgf]	Asp+ObjProbe [uϕ:3sgf]	V+Voice+ObjProbe [uϕ:3sgf]	DP [Def: +, ϕ:3sgf]	(Internal merge applies)
DP [Def:+, ϕ: 3sgf]	T+SubjProbe [uϕ:3sgf]	Asp+ObjProbe [uϕ:3sgf]	V+Voice+ObjProbe [uϕ:3sgf]	ϕ [ϕ:3sgf]	(REDUCE applies)
DP [Def:+, ϕ: 3sgf]	T+SubjProbe [uϕ:3sgf]	Asp+ObjProbe [uϕ:3sgf]	V+Voice+ObjProbe [uϕ:3sgf]	~~ϕ~~ ~~[ϕ:3sgf]~~	(DGI applies)
La lettera	è	sta-t-a	vis-t-a	$\varnothing$	(Vocabulary Insertion)

'The teacher has praised the students'

Here we see no agreement with the internal argument, as expected. In (64) on p.34 we show how this is derived.

It will be noted, however, that we *do* see agreement on the subject probe with the external argument. This is predicted by our approach, assuming that subjects are generated in a low position and raise via some sort of A-movement, which will be expected to trigger REDUCE, which in turn feeds DGI and allows agreement to surface on the subject probe. This will be true regardless of whether the subject is a full DP or a pronominal. This contrasts with the state of affairs we see in Irish, where the subject DP remains below the subject agreement probe, leading to the complementary pattern, as discussed in Section 2.4.2. Our account, then, successfully accounts for the appearance of complementary agreement with subjects in Irish but not in Italian.

This success does come with a proviso, however – Italian subjects may appear in postverbal position, and in particular passive and unaccusative subjects appear in their base position. All things being equal, our approach would predict that these should not trigger agreement. This is in fact the correct prediction for certain Italian dialects, such as Fiorentino (cf. Brandi and Cordin 1989). In Standard Italian, however, these postverbal subjects do act as subject agreement triggers, both for subject agreement and (in the case where they are an internal argument) participial agreement. A relevant example with an unaccusative verb, provided by a reviewer, is shown in (63):

(63) *In-situ subject triggers agreement*

È	arriva-t-**a**	la	ragazza
AUX**.3SG**	arrive-PTCP-**F.SG**	the.F.SG	girl

'The girl has arrived'

Reasons of space prevent me from dealing with this issue in full detail, and I will leave it as a topic for future research. One avenue that seems worth pursuing is an analysis that is adopted for non-complementary pronominal agreement in Welsh below, and by van der Wal (2022) for so-called 'doubling' Bantu languages, whereby these elements involve a so-called 'Big DP', with an accessible ϕ-bundle at their edge – this analysis has an antecedent in Belletti (2005).

Another observable difference between Italian and Irish concerns the behaviour of *pronominal objects*. In Italian, unlike Irish, these elements are typically realised as clitic elements on a finite verb or tense auxiliary. Two possibilities suggest themselves:

(A) Object clitics are manifestations of agreeing ϕ-features on T or an associated head, possibly as a result of a DGI process. (cf. Roberts 2010)[31]

[31] By 'associated head' here, we mean a lower head which ends up being (at least partially) realised together with T. In the particular case of object clitics, the probe (or probes) that would target the object is likely lower than T, as object clitics can occur with non-finite verbs and display phenomena such as clitic climbing – see Roberts (2010) for some additional discussion. For ease of representation, I have shown the relevant probe as being located on T, but this is not intended to imply that the probing features are originally generated there.

(64) *Object probes without passivisation*

	T+SubjProbe	DP	V+Asp+ObjProbe	DP	
	[uϕ]	[Def:+, ϕ: 3sgm]	[ϕ]	[Def: +, ϕ:3plm]	(Configuration before Agree)
	T+SubjProbe	DP	V+Asp+ObjProbe	DP	
	[uϕ:3sgm]	[Def:+, ϕ: 3sgm]	[uϕ:3plm]	[Def: +, ϕ:3plm]	(Agree applies)
DP	T+SubjProbe	DP	V+Asp+ObjProbe	DP	
[Def:+, ϕ: 3sgf]	[uϕ:3sgm]	[Def:+, ϕ: 3sgm]	[uϕ:3plm]	[Def: +, ϕ:3plm]	(Internal merge applies to EA)
DP	T+SubjProbe	ϕ	V+Asp+ObjProbe	DP	
[Def:+, ϕ: 3sgf]	[uϕ:3sgf]	[ϕ:3sgm]	[uϕ:3plm]	[Def: +, ϕ:3plm]	(REDUCE applies only to EA)
DP	T+SubjProbe	~~ϕ~~	V+Asp+ObjProbe	DP	
[Def:+, ϕ: 3sgm]	[uϕ:3sgm]	~~[ϕ:3sgm]~~	~~[uϕ:3plm]~~	[Def: +, ϕ:3plm]	(DGI applies only to EA)
L'insegnante	ha	$\varnothing$	loda-t-o	gli studenti	(Vocabulary Insertion)

(B) Object clitics are pronouns proper, which are moved (i.e. internally merged) above T and then undergo morphological merger to T. (cf. Harizanov 2014, Kramer 2014)

If we take (A) to be correct, cliticisation combined with participial agreement is simply a case of multiple probes targeting the same goal, as shown with participles above. This agreement is followed by DGI, as in Irish. If (B) is correct, the behaviour of pronominal agreement can be treated as a case of REDUCE feeding DGI, just as we see with passivised arguments. Either way, the result will be compatible with our analysis. The derivation of (60b) with (A) is shown in (66), while the derivation assuming (B) is shown in (67).[32]

There may be some advantage to assuming (B). This is because it helps us explain an otherwise puzzling generalisation concerning the interaction between clitic doubling and participial agreement – namely, as observed by Tsakali and Anagnostopoulou (2009), participial agreement and clitic doubling appear to be in *complementary distribution*. If, as proposed by Harizanov (2014), Kramer (2014), Baker and Kramer (2018), clitic doubling involves an asymmetric chain, then this is predicted – in terms of REDUCE, the operations which feed participial agreement reduce the foot of the chain, whereas those involved in clitic doubling reduce the head of the chain. We consequently do not expect the two phenomena to arise simultaneously.[33] The disadvantage to this, of course, is that adopting it removes one of the motivating cases for DGI proposed by Roberts (2010) in the first place, which may make the approach taken here less appealing. Nevertheless, insofar as DGI is independently well-motivated by e.g. the Bantu cases discussed by van der Wal (2022), I do not believe this is a critical problem.

3.2 Parallel Variation in Celtic and Romance

In this subsection we will consider some languages which have similar, but not identical patterns of agreement to the Irish and Italian systems outlined above, namely Welsh and (Standard) French. These languages are, of course, close relatives of Irish and Italian, respectively belonging to the Celtic and Romance subfamilies of Indo-European. They show similar properties of complementarity with full-DP internal arguments, and indeed complementarity likewise breaks down in these languages under movement. They differ, however, in that we see a failure of complementarity under A′-movement as well as A-movement.[34]

[32] It is also possible that some types of clitics are more readily compatible with one analysis and some types of clitics may be compatible with another analysis. This is plausibly the case for subject clitics, for example – as Rizzi (1986) discusses, French subject clitics behave in many ways like true pronominal elements, while those in Northern Italian dialects may act more like agreement morphology. Thanks to a reviewer for pointing out these facts.

[33] A reviewer asks why languages such as Spanish show similar syntax to Italian in passives and unaccusatives, but are unlike Italian in having clitic-doubling of internal arguments – this depends both on the model of what exactly triggers the appearance of an asymmetric chain, and on what triggers the sort of movement involved in clitic doubling, questions to which I do not offer any firm answers here. As discussed in footnote 10, the appearance of an asymmetric chain may be linked to Case-licensing properties.

[34] Colloquial registers of French tend to behave more like Italian – the facts we are discussing here only apply to the standard [written] language (see e.g. Kayne 1989 for some discussion).

(65) **L'-ho** vis-t-**a**
3SG.F.OBJ-AUX.1SG see-PTCP-**F.SG**
'I have seen it [e.g. the letter]'

(66) *Derivation involving object clitic manifesting phi-features on T*

T+SubjProbe+ObjProbe	ϕ	V+Asp+ObjProbe	ϕ	
[uϕ_{subj}, uϕ_{obj}]	[ϕ:1sg]	[uϕ]	[Def: +, ϕ:3sgf]	(Configuration before Agree)
T+SubjProbe+ObjProbe	ϕ	V+Asp+ObjProbe	ϕ	
[uϕ_{subj}:1sg, uϕ_{obj}:3sgf]	[ϕ:1sg]	[uϕ:3sgf]	[ϕ:3sgf]	(Agree applies)
T+SubjProbe+ObjProbe	~~ϕ~~	V+Asp+ObjProbe	~~ϕ~~	
[uϕ_{subj}:1sg, uϕ_{obj}:3sgf]	[~~ϕ:1sg~~]	[uϕ:3sgf]	[~~ϕ:3sgf~~]	(DGI applies)
L'=ho	$\varnothing$	vis-t-a	$\varnothing$	(Vocabulary Insertion)

(67) *Derivation involving moved object clitic*

	T+SubjProbe	ϕ	V+Asp+ObjProbe	ϕ	
	[uϕ]	[ϕ:1sg]	[uϕ]	[Def: +, ϕ:3sgf]	(Configuration before Agree)
	T+SubjProbe	ϕ	V+Asp+ObjProbe	ϕ	
	[uϕ:1sg]	[ϕ:1sg]	[uϕ:3sgf]	[ϕ:3sgf]	(Agree applies)
ϕ	T+SubjProbe	ϕ	V+Asp+ObjProbe	ϕ	
[ϕ:3sgf]	[uϕ:1sg]	[ϕ:1sg]	[uϕ:3sgf]	[ϕ:3sgf]	(Internal merge applies to IA)
ϕ	T+SubjProbe	ϕ	V+Asp+ObjProbe	ϕ	
[ϕ:3sgf]	[uϕ:1sg]	[ϕ:1sg]	[uϕ:3sgf]	[ϕ:3sgf]	(REDUCE applies [vacuously] to IA)
ϕ	T+SubjProbe	~~ϕ~~	V+Asp+ObjProbe	~~ϕ~~	
[ϕ:3sgf]	[uϕ:1sg]	~~[ϕ:1sg]~~	[uϕ:3sgf]	~~[ϕ:3sgf]~~	(DGI applies)
	ϕ=T+SubjProbe	~~ϕ~~	V+Asp+ObjProbe	~~ϕ~~	
	[ϕ:3sgf]=[uϕ:1sg]	~~[ϕ:1sg]~~	[uϕ:3sgf]	~~[ϕ:3sgf]~~	(Cliticisation applies)
	L'=ho	$\varnothing$	vis-t-a	$\varnothing$	(Vocabulary Insertion)

(68) *Internal argument agreement in French*:

a. *In-situ*:

J'=ai écrit la lettre
1SG=AUX.1SG write.PTCP.NONAGR DEF.FEM.SG letter

'I wrote the letter'

b. *Pronominal argument*:

Je l'=ai écrit-**e**
1SG 3SG.OBJ=AUX.1SG write.PTCP-**FEM.SG**

'I wrote it'

c. *A-moved argument*:

La lettre a été
DEF.FEM.SG letter AUX.3SG PASS.AUX.PTCP.NONAGR
écrit-**e**
write.PTCP-**FEM.SG**

'The letter was written'

d. *A′-moved argument*:

La lettre que j'ai écrit-**e**
DEF.FEM.SG letter COMP 1SG AUX.1SG write.PTCP-**FEM.SG**

'The letter which I wrote'

(69) *Internal argument agreement in Welsh* (examples adapted from Borsley et al. 2007: 275-277):

a. *In-situ*:

Mae Rhodri wedi taro Emrys
AUX.PRS.NONAGR Rhodri PERF hit.VN Emrys

'Rhodri has hit Emrys'

b. *Pronominal argument*:

Mae Gwyn wedi **ei** daro (o)
AUX.PRS.NONAGR Gwyn PERF **3SG.M.AGR** hit.VN (3SG.M)

'Gwyn has hit him'

c. *A-moved argument*:

Mae Emrys wedi cael **ei** daro (*o)
AUX.PRS.NONAGR Emrys PERF AUX.PASS **3SG.M.AGR** hit.VN (*3SG.M)
___ (gan Rhodri)
___ (by Rhodri)

'Emrys has been hit (by Rhodri)'

d. *A′-moved argument*:

Pwy mae Emrys wedi **ei** daro (*o) ___
Who AUX.PRS.NONAGR Emrys PERF **3SG.M.AGR** hit.VN (*3SG.M)

'Who has Emrys hit?'

It will be noted that the Welsh data shows an additional difference in allowing an in-situ pronoun to optionally surface – this will be discussed in the next subsection.

The pattern is predicted if in Welsh and French (but not Irish or Italian) A′-moved elements constitute defective goals for DGI. One straightforward way of achieving this is to suppose that object probes in Welsh and French additionally bear A′-features. [35] If we further suppose that A′ movement in these languages involves a null operator (as we assumed for Irish above), bearing only relevant A′ features and ϕ-features, it will be subject to DGI and permit spellout of the relevant features.[36]

3.3 Partial Complementarity

In some languages, we see phenomena quite closely resembling those observed in Irish and in the core Italian cases discussed above, but complementarity between (*in situ*) overt arguments and agreement is not as thoroughgoing. A clear example of this can be seen in the case of Welsh (for further discussion of Welsh agreement, see e.g. Rouveret 1991, Roberts 2005, Borsley et al. 2007), mentioned above – like Irish, non-default agreement in Welsh is in complementary distribution with full DPs, but pronouns may appear together with agreeing forms, unlike Irish, as in (70).[37]

(70) Mae Gwyn wedi **ei** daro (o)
AUX.PRS.NONAGR Gwyn PERF **3SG.M.AGR** hit.VN (3SG.M)
'Gwyn has hit him'

This phenomenon can perhaps also be explained by recourse to van der Wal's (2022) analysis of variation among Bantu languages, where we can see a divide between the 'non-doubling' languages discussed above, which behave more or less like Irish in terms of complementarity, and 'doubling' languages where we do not see complementarity between overt in-situ arguments and agreement. The example van der Wal (2022:42–45) gives is Sambaa (Riedel 2009) – contrast with the parallel non-doubling example in (7), reproduced in (72):

(71) *Doubling Agreement in Sambaa* (Riedel 2009:44)

N-za-**mw**-ona Stella
1SG.SG-PFV.DJ-**1OM**-see 1.Stella

'I saw Stella' (overt non-pronominal object appears together with object marker)

[35] Variation in whether A′-features appear on object probes might be expected given a lexico-centric approach to parameters along the lines of Roberts (2019)

[36] An alternative analysis might be that the bundling of A′ and ϕ-probes causes the goal to undergo REDUCE, feeding DGI, or indeed that A′-movement in general triggers REDUCE in Welsh and French. As a reviewer observes, the last possibility may give an explanation for the existence of island-sensitive pronominal resumption in some languages, including Welsh, surveyed in Hewett (2023).

[37] Such a pronoun is optional when the agreement marker is non-adjacent to the agreement marker, as in (70), but obligatory when adjacent, e.g. with finite verb agreement or prepositional agreement. Because it depends on linear order, we take this to be a prosodic constraint, discussed in more detail below.

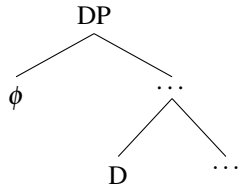
(72) *No doubling in Lugwere* (van der Wal 2020:199)

Swáya y-á-βona óDéo
1.Swaya 1SM-FUT-see 1.Deo

'Swaya will see Deo' (overt non-pronominal object, no object marker on verb)

Cases like Sambaa are explained by van der Wal (2022) as involving a 'big-DP' structure (see also e.g. Torrego 1995, Uriagereka 1995, Nevins 2011), where ϕ-features of an argument are doubled by an additional ϕ-feature bundle at its edge. That is, we have a structure along the following lines:

(73) *Big DP structure*

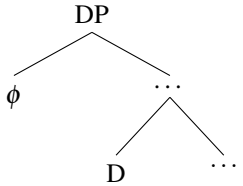


Agreement operations target the ϕ-feature bundle (as it is closer than lower ϕ-bearing heads within the DP), which is consequently subject to DGI, allowing the ϕ-features on the probe to be spelt out, but leaving the rest of the DP intact. This is shown for (71) below.

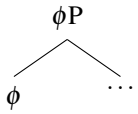
(74) n-za-mw-ona [$_{DP}$ ~~ϕ~~ Stella]
[ϕ:1] ~~[ϕ:1]~~

If we adopt it for Welsh, this proposal implies that pronouns have *two* possible structures, one of which is a simple ϕ-bundle, as in Irish, while the other is a big DP structure.[38]

(75) a. *Big DP structure (co-occurring with agreement)*



b. *ϕP structure (complementary with agreement)*



[38]For much discussion of variability in the availability of big DPs and possible conditioning factors, see van der Wal (2022).

If a big DP is inserted, we can suppose, agreement leads to elimination of the pronoun through DGI (as in Irish), while if the latter is inserted, DGI only applies to the ϕ-bundle at the edge of the phrase, leaving the rest untouched.[39]

Ideally one would like to have positive evidence for such a proposal – in fact, there *are* two sets of surface pronominal forms in Welsh, one of which typically appears in contexts where overt agreement is present while the other appears elsewhere. This alternation is visible with first person singular forms, for example – in Colloquial Welsh, we see a contrast between *i*, which generally co-occurs with overt agreement, with another form *fi* typically appearing in other contexts, e.g. as the object of a finite verb, or after non-agreeing prepositions, conjunctions, etc (see discussion in King 2004: 91-110 for further details).[40] This is illustrated below:

(76) *Dependent form after agreeing verb* (adapted from King 2004: 273)

Nes i dalu
AUX.PST.1SG 1SG.DEP pay.VN

'I paid.'

(77) *Dependent form after agreeing preposition* (adapted from King 2004: 184)

Mae='r ddannodd **arna** i
be=the toothache **on.1SG** 1SG.DEP

'I have a toothache.'

(78) *Independent form in object position* (adapted from King 2004: 91)

Stopi-odd yr heddlu fi
stop-PST.3SG the police 1SG.IND

'The police stopped me.'

(79) *Independent form after non-agreeing preposition* (adapted from King 2004: 379)

Mond papur pum punt sy ar ôl 'da fi
just note five pound be.REL left with 1SG.IND

'I just have a fiver left.'

[39] It might be noted that this bears some similarities with the stranding cases in Irish discussed above (42), and indeed it is not ruled out that these also involve a Big DP structure of sorts. A big DP analysis might also be applied to cases of doubling in Irish dialects, noted by McCloskey and Hale (1984) and Ó Siadhail (1989), who point out that 3rd person plural agreement in some Munster Irish varieties is often non-complementary.

[40] This pattern is somewhat complicated by morphophonological and dialectal variation – in particular we often see *fi* where we might otherwise expect *i*. The positions where *i* is *possible* can still be characterised by agreement, however. The realisation of 1sg pronominal ϕ-features, then, is partially but not exclusively conditioned by their appearance in a big DP structure – there also appears to be postsyntactic conditioning: as King notes, *fi* is often preferred postconsonantally.

In examples like (76) and (77), we assume, an overt pronoun must have a big DP structure, which is typically realised as *i*. This is because a bare ϕ bundle would undergo DGI and consequently not surface overtly. On the other hand, in non-agreeing positions, like (78) and (79), which is realised as *fi*.[41]

A question arises as to why *i* (i.e. a big DP structure) is generally not permitted in these positions – we can perhaps suppose that, all things being equal, there is a preference for minimising structure here, and that the bare ϕ-bundle is inserted in preference to a larger big DP structure. In (76) and (77), the larger structure is inserted because an overt pronoun is obligatory. We can suggest that this is a prosodic constraint, and that agreement morphs in Colloquial Welsh require a supporting element to their right, which may be a pronoun, as is typical in the case of verbs and prepositions, or a lexical element, as in the case of possessive agreement markers or object agreement markers attaching to aspectual forms.[42] This is made plausible by the fact that overt pronouns are optional when they are not adjacent to the agreement marker, as in (70).

To sum up, while we do not have an absolute prediction that VS orderings (or more generally, Probe-Goal orderings) should show complementarity effects in their agreement and SV (Goal-Probe) orderings should lack them, our analysis does make two more fine-grained predictions:

- In general, circumstances where there is A-movement by a goal over a probe should void complementarity effects.
- If a language shows independent evidence for a Big DP structure for some set of items, we do not expect complementarity for those items.

It is to be hoped that further work will tell to what degree these predictions hold.

4 Conclusions

This paper has shown that the parallel agreement patterns with internal arguments seen in the Irish progressive and Italian participles, as well as more general properties of the agreement systems of those languages, can be accounted for using two independently proposed mechanisms, namely defective goal 'incorporation' (DGI) and the notion of an asymmetric chain. In particular these imply both complementarity between agreement and overt arguments, and obviation of that complementarity under A-movement. Suggested extensions to languages with similar but distinct systems such as Welsh and French are discussed.

This approach makes some general predictions – we expect to see more cases of agreement in goal-probe orderings than probe-goal orderings. This is indeed an observable cross-linguistic tendency (see e.g. Corbett 2006 for discussion and examples) and

[41]The proposal here has a precursor in the Rouveret's (1991) analysis of (Literary) Welsh, who proposes that pronouns are embedded inside a NumP and that when we see agreement and a dependent pronoun (i.e. those which co-occur with agreement), the Num head incorporates into the agreement host, playing a role similar to the ϕ-feature bundle at the edge of the big DP here. (Independent pronouns are modelled as involving lowering of the Num head to the pronominal element, blocking raising of that element.)

[42]This is *not* true in Literary Welsh, where pronouns are typically omitted postverbally (King 2004: 181).

has motivated analyses such as Bjorkman and Zeijlstra's (2019) Upward Agree: the approach here offers an alternative explanation of this sort of tendency. More specifically, our approach implies probe-goal complementarity to be the general case, but this may be obviated by (A-)movement of the goal over the probe as well as doubling structures such as Big DPs. Another prediction (or rather, post-diction) made by the framework here concerns complementarity between participial agreement and clitic doubling, as observed by Tsakali and Anagnostopoulou (2008). This is predicted under our framework as both phenomena are taken to involve an asymmetric chain, but where the pronominal component of the chain is in the upper position under clitic doubling but the lower position when we see participial agreement.

Various questions emerge from the analysis proposed here, and I have not attempted to address all of them. In particular, I have not discussed the semantic relation between the components of an asymmetric chain and how it is maintained, nor have I addressed the question of *why* A-movement might be expected to produce such a chain. I have also only been able to scratch the surface in terms of empirical coverage, dealing only with a very restricted set of cases – questions of how the model proposed may interact with the full wealth of agreement systems and related properties (e.g. various types of subject and object cliticisation) found cross-linguistically naturally arise. Though I am not able to address these questions adequately in the space available, I hope that this article has provided some initial plausibility for the analysis and will motivate further research into these questions.

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