

# Scottish Gaelic prepositional relatives: The problem of inflection

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Scottish Gaelic, a Celtic language spoken mainly in the western islands of Scotland, has two patterns of relativization on prepositional complements: a pied-piping pattern and a stranding one. The pied-piping pattern involves the relative complementizer *an*. *An* forces fronting of the preposition, which then appears with definite inflection. The stranding pattern involves the main relative complementizer *a*, which requires the preposition to remain *in situ* with 3MSG inflection. This paper analyzes the pied-piping pattern, assuming Adger and Ramchand (2005)'s static Agree analysis for the stranding one. I propose that the pied-piping pattern involves a relative operator and movement. The relative operator is not null, but identical with the definite article (following Arregi 2000 for Spanish) with the exception of a [REL] feature which triggers movement to spec,CP. I term this combination of features the Definite Operator. Under this account, Scottish Gaelic is not so different from other Indo-European languages like Spanish and German in its use of the definite article in forming relative clauses. Unlike Spanish and German, Scottish Gaelic requires deletion of the definite operator, with the result that it is detectable only in the definite inflection on the pied-piped preposition.

## 1 Introduction

In relativizing on the complement of a preposition, Scottish Gaelic has two patterns: a pied-piping and a stranding one. When the preposition is pied-piped, it precedes the relative complementizer *an* and takes definite inflection (1). When the preposition is stranded, it appears *in situ* and takes default 3MSG<sup>1</sup> inflection (2). In the glosses, I refer to the relative complementizer which is preceded by the preposition as AN and the relative complementizer which allows the preposition to be stranded as A.

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<sup>1</sup> I use the following abbreviations: 1,2,3: *first, second and third person*, M: *masculine*, F: *feminine*, SG: *singular*, PL: *plural*, DEF: *definite*, GEN: *genitive*, EMPH: *emphatic*, DEP: *dependent*, IND: *independent*, REL: *relative*, VN: *verbal noun*, COP: *copula*, ASP: *aspect marker*, NEG: *negation*, PRES: *present*, PAST: *past*, FUT: *future*.

- (1) [PIED-PIPING]  
 gloinne **anns** an do dhoirt thu am bainne \_\_\_\_  
 glass in.DEF AN pour.PAST.DEP you the milk  
 ‘a glass into which you poured the milk’ (Andrew Dunn, p.c.)
- (2) [STRANDING]  
 am bòrd a bha an leabhar **fodha** \_\_\_\_  
 the table A be.PAST.IND the book under.3MSG  
 ‘the table the book is under’ (Adger & Ramchand 2006: 10)

The patterns illustrated in (1) and (2) differ in three ways. The first is in word order: in (1) the preposition precedes the complementizer, but in (2) the preposition appears *in situ*, at the end of the clause. Secondly, (1) and (2) differ in the form of the complementizer and in the effect on the form of the verb: *an* triggers the dependent form of the verb, while *a* triggers the independent form. The independent form of the verb is used in matrix clauses and when the verb is preceded by either *ma* ‘if’ or the relative complementizer *a*. The dependent form of the verb is triggered by matrix and embedded negation, *cha* and *nach*, *mur* ‘if not’, the plain embedding complementizer *gun*, the positive and negative interrogative particles *an* and *nach*, and the relative complementizer *an*. The third difference between the patterns in (1) and (2) is in the inflection on the preposition. The pied-piped preposition takes definite inflection but the stranded preposition takes 3MSG inflection, which is the default in Scottish Gaelic (Adger and Ramchand 2005: 177).

Adger and Ramchand (2005) argue that the relative clause is the basic  $\bar{A}$ -dependency in Scottish Gaelic, out of which clefts and *wh*-questions are built up. The pied-piping pattern can be used in all  $\bar{A}$ -dependencies as well: relative clauses (3a), clefts (3b) and *wh*-questions (3c). The pied-piped prepositions *air* in (3b) and *aig* in (3c) have homophonous definite and bare forms. Notice, however, that these preposition still precede the relative complementizer *a(m)*, identifiable in (3b) from the dependent form of the verb.

- (3) a. agus an duine eile ‘g a tilgeil a mach gu àite [anns  
 and the man other PTCL 3FSG throw.VN out to place in.DEF  
 an tiorraich i ]  
 AN dry.FUT she  
 ‘and the other throwing it out, to a place where it [the peat] will dry’  
 (Ofteidal 1956: 271)
- b. ‘S e Christine [air \_\_ a bheil an droch *luck* ]

COP AUG Christine on AN be.PRES.DEF the bad luck  
 ‘It’s Christine that has bad luck’ (Andrew Dunn, p.c.)

- c. Co aig am bheil an t-airgiod?  
 who at AN be.PRES.DEF the money  
 ‘Who has the money?’ (MacLaren 1999: 114)

An analysis of the pied-piping pattern must account for the variation in word order, in the form of the complementizer and in the inflection on the preposition, as well as the fact that, unlike Modern Irish (McCloskey 2002: 214), the pied-piping pattern in Scottish Gaelic appears to be syntactically productive.

## 2 A prior analysis of the stranding strategy: Adger and Ramchand (2005)

Adger and Ramchand (2005) provide an elegant account of the stranding pattern in (2) above based on a static  $\bar{A}$ -dependency between the relative complementizer *a* and a  $\phi$ -featureless *pro* variable at the foot of the dependency. The semantic needs of relative clauses are expressed in the syntactic features [ $\Lambda$ ], which expresses predicate abstraction, and [ID], which represents a bound variable. Under this analysis, Scottish Gaelic falls into the category of a Merge language which bundles the [ $\Lambda$ ] and [ID] features on two separate items, the relative complementizer *a* and *pro*, respectively. (4) illustrates this dependency, which requires the valuation of the [ID: ] feature on *pro* by the [ID:dep] feature on the relative complementizer.

- (4) SCOTTISH GAELIC  
 $[_{CP} a [C, \Lambda, ID:dep] \dots [_{PP} P pro[ID: ]]] \rightarrow [_{CP} a [C, \Lambda, ID:dep] \dots [_{PP} P pro[ID:dep]]]$

English, on the other hand, is a Move language which bundles those same features on a single lexical item, for instance the relative pronoun *which*. Movement is then required to create two instantiations of that lexical item, and the higher copy abstracts over the lower one.

- (5) ENGLISH  
 $[_{CP} C \dots wh [\Lambda, ID:\phi]] \rightarrow [_{CP} wh [\Lambda, ID:\phi] C \dots <wh [\Lambda, ID:\phi]>]$

The fact that Scottish Gaelic is a Merge, rather than a Move, language finds support in the non-identity effects of its  $\bar{A}$ -dependencies which demonstrate that the head of the relative clause (hereafter the pivot) cannot have been base-generated internal to the relative clause. The first non-identity effect is that of

selection mismatches, such that the pivot *tidsear* in (6a) cannot be replaced in the gapped position (cf. 6b).

- (6) a. Dè an seòrsa tidsear a tha annad?  
 what the sort teacher A be.PRES.IND in.2SG  
 ‘What sort of teacher are you?’  
 (Adger and Ramchand 2005: 167)
- b. \*Tha tidsear math annad.  
 be.PRES.IND teacher good in.2SG  
 ‘You are a good teacher’  
 (Adger and Ramchand 2005: 168)

The second non-identity effect is that of agreement: the inflection on the preposition is 3MSG regardless of the properties of the pivot (7). Scottish Gaelic agreement is such that  $\phi$ -inflection is found only with null *pro*, and the pivot *am bocsa* would normally trigger the definite form of the preposition, *anns*. The appearance of 3MSG inflection on the stranded preposition is insensitive to the features of the pivot.

- (7) Dè am bocsa a chuir thu am peann ann?  
 which the box A put.PAST.IND you the pen in.3MSG  
 ‘Which box did you put the pen in?’  
 (Adger and Ramchand 2005: 169)

The third non-identity effect is also illustrated in (7), in that the case of the pivot does not reflect the case it would receive *in situ*. In (7) *am bocsa* is in the nominative case, but as an object of a preposition it would normally be in the dative case: *a’bhocsa*.

The fourth non-identity effect is that Scottish Gaelic idioms do not retain their idiomatic readings when one part is relativized on (8).

- (8) a. Bidh e a’toirt sop às gach seid  
 be.FUT.IND he take.VN wisp from.DEF each bundle  
 ‘He’s not a very concentrated or focused person’
- b. ‘S ann às gach seid a bhitheas e a’toirt sop  
 COP AUG from.DEF each bundle A be.FUT.RELhe take.VN wisp  
*unavailable reading*: ‘He tries his hand at *everything*’  
*OK as*: ‘It’s from every bundle that he has taken a wisp’  
 (Adger and Ramchand 2005: 169-170)

The final non-identity effect has to do with Condition C reconstruction effects. A relativized pronoun cannot be coindexed with an R-expression in the relative clause (9). This is completely unexpected if Scottish Gaelic relative clauses were formed via movement.

- (9) ‘S toil leam am peann aige ge-tà a bha Iain  
 COP pleasing with.1SG the pen at.3MSG however A be.PAST I.  
 a’sgriobhadh leis  
 write.VN with.3MSG  
 ‘I like his pen that Iain was writing with’  
 \**his*=*Iain*’s, OK otherwise (Adger and Ramchand 2005: 170)

Because Scottish Gaelic  $\bar{A}$ -dependencies are not formed via movement but by base-generation of the pivot, Adger and Ramchand’s (2005) analysis accounts neatly for the observed non-identity effects. Their analysis also provides an explanation for the characteristics of the stranding pattern in (2) above. Because the dependency is created by an Agree relation rather than movement, the preposition remains *in situ*. The form of the complementizer *a* corresponds to the bundling of the features [ $\Lambda$ ] and [ID]. The special relativizing *pro* triggers the default 3MSG inflection on the preposition.

However, this analysis does not readily extend to the pied-piping pattern in (1) above. The preposition in (1) has definite inflection, not 3MSG, indicating a difference in the derivation of the two structures. A single item does not typically trigger two different types of inflection, and null elements are assumed to be unable to pied-pipe additional material (cf. Chomsky 1982). Additionally, the fact that the preposition precedes the relative complementizer strongly suggests that movement is involved. Another analysis is needed. I propose an analysis of the pied-piping pattern in (1) which will supplement Adger and Ramchand’s (2005) analysis of the stranding pattern in (2).

### 3 A definite operator analysis of the pied-piping pattern

While it seems that the pied-piping pattern in (1) above involves movement of the preposition, it does not appear to involve movement of the pivot. That is, I assume that the pivot is base-generated external to the relative clause, as Adger and Ramchand (2005) propose for the stranding pattern. Of the non-identity effects outlined above, the pied-piping pattern behaves similarly at least with regard to agreement and case. Compare (10) with (7) above in the shows an indefinite pivot *àite* which triggers no inflection on the matrix preposition *gu*. The pied-piped preposition *anns* in the relative clause, however, is inflected for definiteness.

- (10) agus an duine eile ‘g a tilgeil a mach gu àite [anns an  
and the man other PTCL 3FSG throw.VN out to place in.DEF AN  
tiormaich i ]  
dry.FUT she  
‘and the other throwing it out, to a place where it [the peat] will dry’  
(Oftedal 1956: 271)

Assuming the other non-identity effects hold for the pied-piping pattern (although further empirical work is required to verify this), I conclude that the pivot is base-generated external to the relative clause.

Arregi (2000) proposes that Spanish uses the definite article in forming relative clauses because of the requirements on interpretations of copies<sup>2</sup>. Basically, assuming the copy theory of movement and particularly that the lower copy of a moved item must be interpreted as a definite description, and additionally assuming the identity condition on the deletion of higher copies of moved items, the definite article is the best option for realizing the relative operator because its lower copy, the one to be interpreted, is identical to the higher one without any additional manipulations or assumptions.

I propose that Scottish Gaelic is not so different from Spanish in using the definite article as a relative operator, except that Scottish Gaelic deletes the definite article after it triggers inflection on the preposition. Additionally, because Scottish Gaelic base-generates the pivot in the matrix clause (recall the non-identity effects discussed above) we require a null NP to occupy the gap in the complement position of this definite operator. This null NP is independently required for pronouns, if we assume with Déchaine and Wiltschko (2002) a complex pronominal structure like that in (11).

- (11) [<sub>DP</sub> φ [<sub>NP</sub> Ø]]

This same null NP is available for selection by the definite operator, which I gloss as THE[REL] for convenience.

- (12) [<sub>DP</sub> THE[REL] [<sub>NP</sub> Ø]]

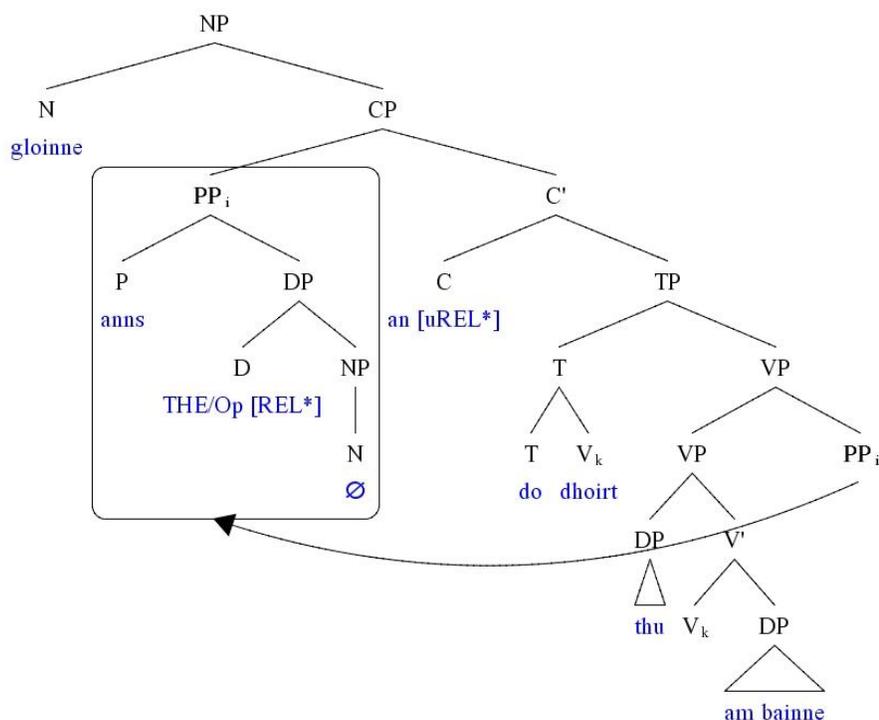
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<sup>2</sup> The use of definite articles in relative clauses has been previously commented on in the literature. For Spanish, Brucart (1992) proposes that the definite article takes a null relative operator as its complement. Hebrew participial relatives use what looks like a determiner, which Siloni (1995) analyzes as being a definite article acting as a relative complementizer. Brucart’s (1992) analysis could be adopted for the pied-piping pattern with little change. As for Siloni’s (1992) analysis, however, the fact that the negative complementizer *nach* also appears in the pied-piping pattern rules hers out for Scottish Gaelic.

The relative complementizer *an* has a strong uninterpretable [uREL\*] feature which requires movement of the definite operator possessing a [REL] feature into its specifier for checking. The preposition is pied-piped along with the definite operator.

The definite inflection found on the pied-piped preposition is triggered by the definite operator, just as the definite article triggers inflection on the preposition. Crucially, the processes giving rise to definite inflection must occur before the post-syntactic deletion of the definite operator. Whether these processes occur at syntax or at a post-syntactic component of the derivation is left for further research. The deletion of the definite operator may be due to the fact that Scottish Gaelic does not allow NP ellipsis as freely as, for instance, German and may therefore disallow pronunciation of a definite article with no contentful nominal complement.

(13)



The three properties of the pied-piping pattern in (1) above are explained by this analysis. The word order is a consequence of the need of the definite operator to move to the specifier of CP, triggered by the strong [uREL\*] feature

on the complementizer. The preposition is pied-piped along with the definite operator. The form of the complementizer reflects a different set of features from that of the other relative complementizer. The pied-piping complementizer *an* has a strong uninterpretable [uREL\*] which requires movement of a matching feature into its specifier. The stranding complementizer *a* has the features [Λ] and [ID:dep] which, under slightly different assumptions of feature-checking requirements, must enter into an Agree relation with a *pro* with an unvalued [ID: ] feature. The inflection on the preposition falls out straightforwardly from the type of element which is in the complement of the preposition. The definite operator which triggers movement triggers the definite inflection found on the pied-piped preposition in exactly the same way as the definite article does. The *pro* found in the stranding pattern, similarly, triggers  $\phi$ -feature inflection on the preposition by virtue of its being a pronominal element.

#### 4 Consequences

In this section I discuss various consequences and implications of the definite operator analysis. This analysis has the positive consequence of unifying the category of the trigger of definite inflection. Additionally, there appears to be further support for the distinction between the movement relative complementizer *an* and the non-movement relative complementizer *a* in the form of gapless relatives. Finally, the analysis of the pied-piping pattern has some implications for the Merge versus Move typology of Adger and Ramchand (2005).

Under the definite operator analysis, definite inflection on the pied-piped preposition now fits in with the distribution of definite inflection elsewhere in Scottish Gaelic. The overt elements in (14) are all apparent triggers for definite inflection on the preceding preposition (Robinson 2008: 139).

- (14) a. the singular definite article *a'* or *an*  
 b. the plural definite article *na*  
 c. *gach* 'each, every'  
 d. *dè* 'what, which'  
 e. the relative complementizers, both positive and negative: *an* and *nach*

Under the analysis proposed here, the relative complementizers in (14e) are only apparent triggers. Under the analysis proposed here, the preposition is pied-piped because these complementizers require the definite operator to move into their specifier and it is this definite operator which triggers the inflection on the preposition. (15) lists the actual elements which trigger definite inflection when the definite operator analysis is adopted.

- (15) a. the singular definite article *a'* or *an*  
 b. the plural definite article *na*  
 c. *gach* 'each, every'  
 d. *dè* 'what, which'  
 e. the definite operator

As a definite  $D^{\circ}$  head, the definite operator fits the profile of a trigger for definite inflection. Further support for the definite operator being the definite article augmented by a [REL\*] feature comes from the fact that while all prepositions inflect for singular definite article (15a), not all inflect for the triggers in (15b-d) (Robinson 2008: 20-23). All pied-piped prepositions inflect for definiteness, suggesting that the definite operator shares more in common with the singular definite article than the other definite  $D^{\circ}$  heads in (15).

The distinction between *an* as a movement relative complementizer and *a* as a non-movement relative complementizer finds support in the fact that *a* is used in gapless relatives, which do not appear to involve movement at all.

- (16) a. 'S ann a bha an droch *luck* orm  
 COP in.3MSG A be.PRES.IND the bad luck on.1SG  
 'I have bad luck'  
 b. \*'S ann an robh an droch *luck* orm  
 `COP in.3MSG AN be.PAST.DEP the bad luck on.1SG  
 (Andrew Dunn, p.c.)

Of course, *a* is also the main relative complementizer, used when relativizing on subject and non-prepositional objects as well as in the stranding pattern. However, the ungrammaticality of using *an* supports the idea that *an* requires movement.

Recall that Adger and Ramchand (2005) argue that Scottish Gaelic differs from languages like English in being a Merge language which forms its  $\bar{A}$ -dependencies not by movement but by base-generation of the component parts of the dependency. Under the definite operator account of the pied-piping pattern of relativization, Scottish Gaelic employs both strategies in forming its  $\bar{A}$ -dependencies. This is in fact a possibility for Adger and Ramchand:

“[I]n principle, all languages have the potential to use both Merge and Move to establish relative dependencies: languages may, however, differ in where they deploy each strategy”  
 (Adger and Ramchand 2005: 191)

Perhaps more interesting than Scottish Gaelic being both a Merge and a Move language is the variation among dialects in the use of the Merge

(‘stranding’) or the Move (‘pied-piping’) strategy, as illustrated in Adger and Ramchand’s (2006) dialect survey. For speakers of the Lewis dialect, the Move strategy is the only one available for prepositional objects, and the Merge strategy is the only one available for all other relativizable positions. For speakers of the Skye dialect, on the other hand, the Merge strategy is the most widely available, with the Move strategy available only for prepositional arguments. Why the pied-piping strategy is allowed only with prepositional arguments in the Skye dialect (although the stranding option is possible as well), is an intriguing fact that must be left for further research.

## 5 Conclusion

In this paper I have proposed that the pied-piping pattern of Scottish Gaelic prepositional relatives is due to the movement of a relative operator which is identical to the definite article apart from the [REL] feature which allows movement. This analysis easily accounts for the inflection found on the pied-piped preposition as well as the word order. The form of the movement relative complementizer *an* reflects its unique feature bundle [C,uREL\*], as opposed to the other relative complementizer, which, following Adger and Ramchand (2005), involve no movement at all.

Further research must be done and more data collected regarding variable binding effects, which are expected under the definite operator account, and regarding the three other non-identity effects: selection mismatches, idiomatic readings, and Condition C reconstruction effects.

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