MaxElide and clause structure in Scottish Gaelic[*]
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1. Goidelic clause structure

The Goidelic languages (Scottish Gaelic, Irish) have basic VSOX word order in finite clauses, and many authors propose that this order is derived by moving the finite verb to T, like in Romance, but leaving the subject in situ in Spec,vP (see Ramchand 1997, McCloskey 1983, 1991, 1996). The most compelling evidence for this structure, in particular the proposal that the verb moves to T, is that the verb only moves in finite clauses; in non-finite clauses, the verb stays in-situ, with the subject to its left. Finiteness distinctions condition verb movement to T in French and other languages (Pollock 1989), so it is proposed that this is what we see in Gaelic and Irish. On this analysis, the only difference between Goidelic and Romance is whether subjects need to move to Spec,TP: this is required in Romance, but not required (and hence, by economy, not possible) in Goidelic (see e.g. Baker 2003).

In more recent work, it has been argued that the subject also raises to some vP-external position. Evidence for this additional raising component comes from the fact that the subject always precedes clause-internal adverbs and aspectual particles (McCloskey 1997, 2001, 2011, Alexiadou and Anagnostopoulou 1998, Adger 2000); moreover in clauses with derived subjects, such as unaccusatives, subjects do show signs of having moved from their VP-internal position to some higher one adjacent to the verb (see especially McCloskey 2001). However this derived subject position does not display the "EPP property," in that it does not need to be filled by an expletive in

the absence of a DP-argument; assuming that this "EPP property" distinguishes Spec,TP, and that the verb is in T, the cited authors conclude that this subject position is some lower specifier position in the inflectional domain, the nature of which remains somewhat mysterious. Analyses differ on exactly what drives this subject raising, but virtually all authors[1] agree that the landing site is not Spec, TP.

However, there is actually little in the way of empirical evidence for the conclusion the subject position is not Spec,TP, beyond the fact that this position does not have the EPP property (an observation that only makes sense in the context of an explicit theory of the EPP). It is argued in this work that it is the position of the verb that diagnoses the position of the subject, but this is based on the assumption that the verb must be in T and cannot be in some higher head position. This assumption seems to be carried over as a result of early discussion of Irish by McCloskey (1991, 1996), where it was argued that the landing site for verb movement cannot be C; however the arguments therein crucially depend upon C being a single head, an assumption largely jettisoned since Rizzi's (1997) cartographic expansion of the left periphery (see e.g. Hendrick 2000, Roberts 2005 for discussion of Celtic).

In this squib I present evidence from ellipsis which indicates that the verb does indeed move to a position above T and that the subject A-moves to Spec,TP in Scottish Gaelic, contra the consensus position. I therefore conclude that it would be apt to reassess what Celtic VSO tells us about clause structure and the EPP.

2. MaxElide and the position of variables

The diagnostic that is used here is MaxElide (Merchant 2008), a condition on ellipsis which ensures that larger ellipsis sites are chosen over smaller ones within precisely

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[1] Notable exceptions in the early Minimalist literature on VSO include Carnie (1995) and Duffield (1995).

defined domains. Here I will outline the implementation of MaxElide developed by Takahashi and Fox (2005) and Hartman (2011).

The basic purpose of MaxElide is to account for English data like (1), which shows that VP-ellipsis is often not possible when sluicing is an option in the same clause.

(1) Mary was kissing someone, but I don't know who (*she was).

Building on an earlier version of Merchant (2008), Takahashi and Fox (2005) propose an account in terms of *ellipsis parallelism*, such that the constraint favouring the larger ellipsis site only applies in domains in which parallelism is satisfied, called *parallelism domains* (PDs). The basic content of the theory is in (2)-(3), and the constraint is in (4) (adapted from Hartman 2011).

(2) For ellipsis of EC [elided constituent] to be licensed, there must exist a constituent (the PD), which reflexively dominates EC, and satisfies the parallelism condition in (3).

(3) PD satisfies the parallelism condition if PD is *semantically identical to another constituent AC, modulo focus-marked constituents*.

(4) *MaxElide*: Elide the biggest deletable constituent reflexively dominated by the PD.

According to (2)-(3), ellipsis only applies within PDs, and the PD can be either the same as the EC or some larger constituent that contains it; but in cases where there is a variable in the EC that is bound from outside, a configuration called *rebinding*, then the PD must contain the variable's binder in order to satisfy (3). This is what we see in (1), schematized roughly in (5), where the VP contains a trace bound from the CP-domain: VP is not a PD, since it contains a rebound variable, and the presence of this variable means that the PD must be at least as big as the constituent immediately dominating its binder (underlined).

(5) someone [λy Mary was [$_{VP}$ kissing y]] … who [$\underline{\lambda x \text{ she was } [_{VP} \text{ kissing x]]}}$

MaxElide regulates how ellipsis applies within a given PD, dictating that we elide the biggest deletable constituent within it; in this case, applying MadElide to this larger PD results in sluicing, since sluicing is possible in this larger domain. VP-ellipsis is thus ruled out in favour of sluicing.

Two important aspects of this account of (1) need to be clarified here, concerning situations where VP-ellipsis is not ruled out in favour of sluicing. First, the proposal does not ban VP-ellipsis in all rebinding configurations, as (4) only dictates that the largest *deletable* constituent be deleted. In variants of (1) where there is focussed material in the IP-domain, like (6), TP is not deletable (focussed material cannot be deleted) and so deletion of the next-biggest deletable consituent, VP, is licensed.

(6) I know who she WILL kiss, but not who she WON'T.

Secondly, the proposal also does not rule out VP-ellipsis in situations where sluicing is possible but there is no rebinding to speak of. This is what is seen in cases like (7), where there is *wh*-extraction of a subject but both sluicing and VP-ellipsis are grammatical. Assuming that *wh*-extraction of the subject proceeds from Spec,TP, the second clause of (7) would have a simplified LF in (8), where the variable left by *wh*-extraction is outside the VP; this means that VP is a PD, and so it can be a target for ellipsis. Note that the larger constituent containing the variable's binder, λx, would also be a possible PD, hence the possibility of sluicing.

(7) Someone kissed Susan, but I don't know who (did).

(8) [$_{CP}$ who [λx. [$_{TP}$ x did [$_{VP}$ $\underline{\text{kiss Susan]]]]}}$

Hartman (2011) proposes that a similar explanation accounts for the lack of MaxElide effects with embedded *wh*-adverbial questions, as in (9) (Schuyler 2001). He argues that this follows from the fact that time adverbials may be base-generated as adjuncts

to TP (Baltin 2007); as a result, *wh*-extraction of such adverbials does not leave an A'-trace inside the VP, as shown by (10), so VP is a PD that can be deleted.

(9) You say you'll pay me back, but you haven't said when (you will).

(10) … [$_{CP}$ when λx. [$_{TP}$ x [$_{TP}$ you will [$_{VP}$ pay me back]]]]

What all this show is that it is the position of the variables that counts for MaxElide, and that it is not just the reflex of some general preference for larger ellipsis sites.

All of the effects described above only make reference to the position of variables created by traces of A'-movement, but Hartman (2011) has argued that *all* kinds of movement, including head movement and A-movement, leave traces which are interpreted as variables which count for the calculation of PDs and hence for MaxElide. Hartman's key evidence comes from the contrast between embedded *wh*-adverbial questions like (9) and matrix *wh*-adverbial questions like (11), such that the latter do seem to show the MaxElide effect, in that VP-ellipsis is ruled out.

(11) A: I'll pay you back.   B: Really? When (*will you)?

Considering this and other data involving inversion, Hartman argues that the crucial factor in determining whether or not VP-ellipsis is possible in these cases is T-to-C verb movement, and he concludes that this is because head movement leaves a variable. But to capture the fact that VP is not a potential PD in (11B) like it is in (9), Hartman argues that A-movement of VP-internal subjects to Spec,TP is also involved, and he thus concludes that (9) should be presented as in (12), and (11B) is as in (13).

(12) [$_{CP}$ when λx. [$_{TP}$ x [$_{TP}$ you λy. will [$_{VP}$ y pay me back]]]]

(13) [$_{CP}$ when λx. will λz. [$_{TP}$ x [$_{TP}$ you λy. z [$_{VP}$ y pay me back]]]]

The underlining in the diagrams marks the smallest possible PD in which ellipsis may apply in each. In (12), this is the constituent formed by the λ-binder which binds the subject trace, λy; applying MaxElide to this PD derives VP-ellipsis, in effect the same

result we had above with just A'-traces represented. But (13) is different: since the binding paths of the variables formed by the different movements interweave, the end result is that the smallest possible PD is the one formed by the λ-binder which binds the *wh*-adverbial trace; applying MaxElide to this derives only sluicing, so VP-ellipsis is not possible. Since all three forms of movement are implicated in this analysis, Hartman thus concludes that all types of traces count for MaxElide.

Putting the details to one side for a moment, what all of this shows is that MaxElide effects, viewed from above as the blocking of small ellipsis when big ellipsis is possible, are attested in those cases where the smallest possible PD is large enough such that it extends to the left periphery. In the simplest cases, this is because the operator in the left periphery binds a variable that is deeply embedded in the structure, like the object position. In other scenarios, however, the PD extends across the clause because of the interweaving of shorter movement steps in the structure; in the case of matrix *wh*-adverbial questions, this was due to the interweaving of A'-movement, head movement and A-movement in the functional domain. Now if we adopt the preceding analysis, and assume that MaxElide has generality beyond English,[2] we can

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[2] That this is the case is indicated by data from Brazilian Portuguese, which shows the same asymmetry between object and adverbial extraction seen in English above:

   (i) a. Maria estava beijando alguem, mas eu não sei   quem (*ela estava)

       Maria was   kissing someone but I not   know who   she was

       "Mary was kissing someone, but I don't know who (*she was)"

     b. Você diz que vai me pagar de volta, mas você não disse quando (você vai)

       You say that will me pay   of back, but   you not say   when   (you will)

       "You say you'll pay me back, but you didn't say when (you will)."

                                (Matt Barros, p.c.)

utilize MaxElide's sensitivity to the interaction of movement paths to diagnose the relative position of elements in the functional layer in other languages. In what follows I will use this diagnostic to examine clause structure in Scottish Gaelic.[3]

3. MaxElide in Scottish Gaelic

Scottish Gaelic (ScG) has an ellipsis process that is comparable to VP-ellipsis, which I will call "verbal ellipsis."[4] Much like Irish (McCloskey 1991), ScG verbal ellipsis occurs in finite clauses and involves deletion of a subclausal constituent that immediately follows the finite verb; this is often called "responsive ellipsis," since it is often used in response to yes-no questions (14), but it can also be used in coordinations like in (15) and other such environments, much like English VP-ellipsis. As (14)-(15) show, the ellipsis site includes the subject.

(14) A: Am   faca   Sorley Màiri?

     Q   see-PST-DEP   Sorley Màiri

      "Did Sorley see Màiri?"

   B: Chuinnac.

   see-PST-IND

   "He did." (lit. "saw")

Given that Brazilian Portuguese has a broadly similar clause structure, with subjects in Spec,TP and auxiliary verbs in T, we may conclude that the account of English generalizes to (i), and hence that MaxElide has generality beyond English.

[3] Preliminary consultations with one speaker indicate that the same effects hold in Irish, but this needs to be confirmed with more speakers.

[4] I refrain from calling this "VP-ellipsis" since whether it is a VP or something bigger that is deleted is not obvious at this point: since the subject is inside the ellipsis site, our analysis of the size of the ellipsis site depends upon where we locate the subject.

(15) Smaoinich   mi gun do dh'fhàg mi leabhraichean aig an sgoil, agus dh'fhàg

    think-PST-IND I that PST leave-PST I books   at the school and leave-PST

    "I thought I had left books at school, and I had."

Since ScG also has sluicing, we should be able to use MaxElide as a probe to determine the relative position of verb and subject in Scottish Gaelic.

First, let us consider the interaction of object A'-extraction. (16) shows that extraction from the verbal ellipsis site is possible in a configuration broadly similar to (6), where sluicing is unavailable due to the presence of focused material.

(16) Feumaidh fios   a bhith   agam dè   na   leabhraichean a tha

    need.PRES information C be.PRES at-me which of-the books.def   C be.PRES

    e a' leughadh agus dè   an fheadhainn nach eil

    he PRT read.VN   and which the ones   C.NEG be.PRES

    "I need to know which books he is reading, and which he isn't."

Now consider (17), where there is no focus to rule out sluicing. Here we see the effect of MaxElide: verbal ellipsis is ruled out and only sluicing is possible.

(17) Chuir   Sorley rudeigin gu Màiri airson a co-là breith, ach chan

    put-PST-IND Sorley something to Màiri for   her birthday   but NEG

    eil   fhios   'am   dè (*chuir)

    be-PRES knowledge at-me what put-PST-IND

    "Sorley sent something to Màiri for her birthday, but I don't know what (*he did)"

This is to be expected if MaxElide is in effect in ScG, since the A'-trace of object extraction would always be in the ellipsis site, regardless of the position of other elements in the functional domain. (18) is a simplified schematic, where the smallest possible PD is underlined; here MaxElide ensures the only option is sluicing. I mark

the derived position of the verb *chuir* neutrally as WP and the derived position of the subject *Sorley* as LP, with no commitment to any particular analysis.

(18) … [$_{CP}$ dè λx. [$_{WP}$ <u>chuir λy.</u> [$_{LP}$ Sorley λz [$_{VP}$ z y x]]]]

Thus we can see that that MaxElide is active in ScG.

Now consider *wh*-subjects. Given that the base position of the subject is within the verbal ellipsis site, we may expect to see MaxElide effects in these cases (unlike English), since extraction from the ellipsis site typically triggers these effects. This is indeed what we see: verbal ellipsis is not possible with subject extraction.[5]

(19) Phòg   cuideigin Màiri, ach chan eil   fhios   'am   cò   (*phòg)

kiss-PAST someone Màiri but NEG be-PRES knowledge at-me who   kiss-PAST

"Someone kissed Màiri, but I don't know who (did)"

These facts are compatible with several possible analyses for the relative positions of elements in the functional domain. (20) shows two possible analyses with the verb in some unspecified position WP: in (20a), the subject A-moves to some VP-external position Spec,LP; in (20b), the subject stays in situ prior to A'-extraction. In both, the smallest possible PD is the underlined one demarcated by the λ-binder that binds the A'-trace, and this makes the correct result that MaxElide rules out verbal ellipsis.

(20) a. [$_{CP}$ cò λx. [$_{WP}$ <u>phòg λy.</u> [$_{LP}$ x λx' [$_{VP}$ x' y Màiri]]]]

b. [$_{CP}$ cò λx. [$_{WP}$ <u>phòg λy.</u> [$_{VP}$ x y Màiri]

The same result would be obtained regardless of whether WP is identified as TP or some other higher projection HP.

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[5] All of the ScG speakers also speak English natively, and those who I consulted on English data agreed with the judgments reported above. This indicates the differences between the languages are structural, and not just an artifact of some speakers' general preference for eliding larger constituents.

Finally, consider extraction of *wh*-adverbial extractions. These provide an interesting test case, since we know from the English facts that the *wh*-adverbial traces can be as high as TP, and that this may result in "extension" of the smallest PD to the left periphery depending on the position of other elements in the functional domain. (21)-(22) show that the MaxElide effect is indeed attested with embedded *wh*-adverbial questions. (23) shows that the same effect occurs in *matrix* wh-adverbial questions, which have the same basic word order as embedded questions.

(21) Tha   fhios   agam gun do dh'fhòn Sorley Màiri, ach chan eil

    be-PRES knowledge at-me that PST call-PST Sorley Màiri but NEG be-PRES

    cuimhn' agam cuin   (*a dh'fhòn)

    memory at-me when   C call-PST

"I know Sorley called Màiri, but I can't remember when (he did)."

(22) Tha   fhios   agam gun do dh'fhòn Sorley Màiri, ach chan eil

    be-PRES knowledge at-me that PST call-PST Sorley Màiri but NEG be-PRES

    cuimhn' agam carson   (*a dh'fhòn)

    memory at-me why   C call-PST

"I know Sorley called Màiri, but I can't remember why (he did)."

(23) A: Cha do chuir   Sorley leabhraichean gu Màiri.

     NEG PST put-PST Sorley books   to Màiri.

  B: Cuin   (* a chuir)?

    when   C put-PST

"A: Sorley sent books to Màiri. B: When (*did he)?"

Importantly, the MaxElide effect is suspended when there is focus in the putative sluicing site, as in cases of switching emphatic polarity like (24) (cf. 16). This shows that *wh*-adverbial extraction is in principle compatible with verbal ellipsis.

(24) A: Cha do chuir   Sorley leabhraichean gu Màiri Dimairt.

   NEG PST put-PST Sorley books   to Màiri on-Tuesday.

 B: Cuin   a chuir?

   when C put-PST

 "A: Sorley didn't send books to Màiri on Tuesday.   B: When DID he?"

In this respect, ScG *wh*-adverbial questions generally behave like matrix ones in English, a fact that may be unsurprising given that they share the same *wh*-V-S order.

 Importantly, these facts are only compatible with a subset of the possible structures for the functional domain in ScG.[6] First, consider (25)-(26). In (25), the subject stays in situ in VP, the verb moves to T, and the *wh*P is extracted from a TP-adjoined position; (26) differs only in that the subject A-moves to some VP-external position Spec,GP. In both, the underlined constituent demarcated by λy is a possible PD; this incorrectly predicts that verbal ellipsis should be possible in (22). Therefore these structures cannot be right.[7]

 (25) [$_{CP}$ cuin λx. [$_{TP}$ x [$_{TP}$ dh'fhòn λy. [$_{VP}$ Sorley y]]]]

 (26) [$_{CP}$ cuin λx. [$_{TP}$ x [$_{TP}$ dh'fhòn λy. [$_{GP}$ Sorley λz. [$_{VP}$ z y]]]]]

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[6] Note that the same MaxElide effect obtains whether the verb in WP is a lexical verb or the substantive auxiliary *bith* 'be,' as in periphrastic tenses. Given that some authors have proposed that *bith* is inserted directly in T (e.g. Adger and Ramchand 2003), the apparent effect of head position here would be surprising if the verb wasn't undergoing movement to some higher projection above T.

[7] Regarding (26), the same incorrect result would be obtained if the verb moved through the G head.

Now consider (27)-(28). In these structures, the verb moves through T to some higher position HP, and they differ only in the position of the subject: in (27) it moves to Spec,TP but in (28) it stays in situ. The smallest PD is underlined in each, and we can see that (27) but not (28) correctly derives the result that verbal ellipsis is unavailable.

(27) [$_{CP}$ cuin λx. [$_{HP}$ dh'fhòn λy. [$_{TP}$ x [$_{TP}$ Sorley λz. y λy'. [$_{VP}$ z y' …]]]]]]

(28) [$_{CP}$ cuin λx. [$_{HP}$ dh'fhòn λy. [$_{TP}$ x [$_{TP}$ y λy'. [$_{VP}$ Sorley y']]]]]

Therefore the distribution of MaxElide effects indicate that the derivation of basic clause structure in ScG involves A-movement of the subject to Spec,TP and movement of the verb through T into some higher head position.[8]

4. Discussion and consequences

In the preceding I have presented an argument from ellipsis in favour of an analysis of ScG clause structure where the finite verb is in some position above TP

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[8] Similar though not identical results are obtained if we adopt Merchant's (2008) approach to MaxElide, which only regulates the position of A'-traces. Merchant's implementation differs in that MaxElide only obtains if the smaller ellipsis site contains an A'-trace. With the ScG data, this would correctly predict that subject extraction triggers MaxElide, since the subject originates in the verbal ellipsis site. More significantly, it would also force us to conclude that the verbal ellipsis site contains TP, since the MaxElide effect obtains with *wh*-adverbial extraction: if TP was outside the verbal ellipsis site, it should be possible to base-generate the wh-adverbial outside the ellipsis site and thus avoid a situation where it contains a variable. Since the verb is outside of the verbal ellipsis site, this would force us to conclude that the verb moves out of TP, a conclusion also forced by the analysis in the main text. However this analysis would not speak to the question of whether the subject moves to Spec,TP.

and the subject is in Spec,TP, contra much recent work on Goidelic clause structure. This was what was proposed in Emonds' (1980) early V-to-C analysis of Irish verb movement, but it has largely been abandoned since McCloskey (1996), where it was argued that the distribution of adverbials and complementizers in the left periphery in Irish requires an analysis where the verb is in T. However Hendrick (2000) proposes an alternative analysis of the facts discussed by McCloskey (and related facts from the other Celtic languages) which is compatible with an analysis where the verb raises up to right-adjoin to the lowest head in the extended left periphery, which Hendrick identifies as FinP (adopting Rizzi 1997). Such a structure would be compatible with the facts discussed above. (27) schematizes this.

(27) [$_{FinP}$ Fin+T+V+v$_i$ [$_{TP}$ subj$_j$ [$_{T'}$ t$_i$ [$_{vP}$ t$_j$ [$_{v'}$ t$_i$ [$_{VP}$ t$_i$ …]]]]]]

This may be described as a "V1 analysis" for Goidelic. Alternatively, we may propose that WP is actually the highest head in a split IP-domain, i.e. AgrP. This proposal would be broadly similar to that proposed in earlier Minimalist work on Irish, such as Carnie (1995) and Duffield (1995), and it is also compatible with a variant of Hendrick's (2000) analysis of the facts from McCloskey (1996).

(28) [$_{AgrP}$ Agr+T+V+v$_i$ [$_{TP}$ subj$_j$ [$_{T'}$ t$_i$ [$_{vP}$ t$_j$ [$_{v'}$ t$_i$ [$_{VP}$ t$_i$ …]]]]]]

Although independently plausible, this is not directly compatible with Bobaljik and Thráinsson's (1998) theory of the split IP, which dictates that AgrP is only projected in languages with full agreement paradigms: the Goidelic languages systematically lack verbal agreement, and so by Bobaljik and Thráinsson's criterion should lack an AgrP projection (though this may be taken to be related to the fact that Spec,AgrP does not display the EPP property in Goidelic, unlike Icelandic). The choice between the V1 analysis and the AgrP analysis is a subtle one, with implications for our understanding of the EPP and V1/V2. Needless to say it cannot be resolved here.

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