Merge and Move: Wh-Dependencies Revisited *

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Abstract

In this paper we argue that, under current conceptions of the architecture of the grammar, apparent wh-dependencies can, in principle, arise from either a movement or a base generation strategy, where AGREE establishes the syntactic connection in the latter case. The crucial diagnostics are not locality effects, but rather identity effects. We implement the base generation analysis using a minimal set of semantically interpretable features, together with a maximally simple universal syntax/semantics correspondence. We show that parametric variation arises because of the different way the features are bundled on functional heads. We further argue that it is the bundling of two features on a single lexical item, together with the correspondence that requires them to be interpreted apart, that is responsible for the displacement property of human languages.
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1 Introduction

Since Chomsky (1977), it has been generally assumed that there is a deep unity to a certain subset of A-bar dependency constructions, and that there are clear diagnostics which allow us to pick out this set. Chomsky gives the following:

> 'The rule of *wh*-movement has the following general characteristics:
> (a) it leaves a gap.
> (b) where there is a bridge, there is an apparent violation of subjacency, PIC and SSC.
> (c) it observes CNPC
> (d) it observes *wh*-islands' (Chomsky 1977, pg 86)

These are diagnostics for a class of constructions formed by movement, and, in fact, a special kind of movement involving categories specified as [+wh]. Of course, as time has passed, some of these diagnostics have lost their relevance (specifically the PIC (Propositional Island Constraint) and the SSC (Specified Subject Condition) were folded into Binding Theory); others are no longer so clear cut as they once were (for example, given the existence of *it pro*, a phonologically empty gap can't be taken to be diagnostic of movement per se). However, at least until recently, the locality aspects of Chomsky's diagnostics for wh-movement remain.

However, given recent approaches to syntax, locality effects can no longer be assumed to be diagnostic of movement. This is because, in theories like those of Chomsky (2001b), the abstract operation Agree, which applies between features of heads in a structure, must itself be constrained by some theory of locality. The syntactic operation of Movement is parasitic on Agree, so it is not possible to use locality as a diagnostic for whether movement has taken place. This is because any locality effect can be construed as deriving from constraints on the Agree operation (which is a necessary precursor to movement), rather than on the Movement operation itself.

In fact, in a theory which accepts the existence of *pro* and posits the syntactic operation Agree (constrained by locality), it is not possible to rule out a base generation approach to apparent A-bar displacements. Such an approach would look schematically as follows:

(1) the [song [$_{CP}$ that$_F$ you were listening to *pro*$_F$]]

Here the complementizer C bears some feature (call it F) that enters into the Agree relationship with a matching feature on a *pro*. This is enough to establish the dependency. Once this dependency is established, appropriate semantic rules can interpret the feature F on C as an A-bar binder, and *pro* as the bound variable. Since *pro* is phonetically null, there is a 'gap'; since Agree is constrained by locality (it can only match features which are close enough to each other) we see locality effects.

How, then, can we distinguish between such a derivation and one involving movement? The core difference is whether the bottom of the dependency is occupied by a *pro* or a trace. On the assumption that traces are simple copies (Chomsky 1993), we expect to see what we will call *identity effects* in a movement derivation, but not necessarily in a base generation derivation.

Identity effects arise when the apparently displaced element appears to have an identical copy in the gap position. For example, if it can be shown that the syntactic features of the putatively displaced constituent and its trace are exactly the same with respect to selection, agreement, and case, then we might conclude that there is a copy of the displaced item in a lower position. On the other hand, if we find anti-identity effects (that is, there are obligatory differences in selection etc), then a movement derivation is less likely to be correct, since we will then need to motivate special rules to deal with the mismatches.

Another type of identity effect is semantic: does the putative trace have the semantic interpretation of the displaced element, so that it behaves semantically in an identical fashion? Obvious constructions which might provide evidence here are idioms and reconstruction phenomena.

In this paper we will show that some A-bar dependencies which appear to be movement are, in fact, cases of base generation. We will argue that both movement and base generation are UG-available strategies for constructing A-bar dependencies, and that both may leave a gap and display locality effects. They are predicted, however, to have different properties with respect to identity effects. The line we are taking, then, crucially differs from work in monostratal theories, which seek to reduce all A-bar dependencies to base generation (see, for example, Pollard and Sag 1994, Bresnan 2001).

Given this basic empirical point, we then develop a theory of how the syntactic dependency between the two components of the base-generated structure is constructed, and how the constituent parts of the structure contribute to its interpretation. We show that such a theory can be very minimal, making use only of features which are independently motivated by the semantics of the construction, and providing an elegant architecture for relating the syntax and semantics which eschews special rules of interpretation such as Fox's trace-conversion rule (Fox 2002). The theory accounts straightforwardly for locality and agreement differences between resumptive pronoun structures and other base generation structures, and provides us with a new perspective on why true displacement phenomena exist alongside base-generation structures.

2 Questions and Relatives in Scottish Gaelic

Much of the intital argumentation we will develop will come from Scottish Gaelic, a Celtic language related to Modern Irish, and spoken natively by about 60, 000 people. In this section we lay out some background facts about A-bar dependencies in this language, which will serve as a basis for the discussion of whether these dependencies are base generated or involve displacement.

Gaelic is a VSO language in both root and embedded clauses, as seen in (2).

(2) Thuirt Iain gun do cheannaich thu leabhar an diugh
Said Iain that buy-[PAST] you a book today
'Iain said that you bought a book today.'

The complementizer seen in the embedded clause here (*gun*) is one of a number of preverbal particles. Others include *an*, which introduces positive yes/no questions and embedded questions:

(3) An robh thu sgith?
C-[Q] be-[PAST] you tired
'Were you tired?'

(4) Dh'fhaignich e an robh thu sgith?
ask-PAST he C-[Q] be-[PAST] you tired
'He asked if you were tired?'

We also have *cha*, which introduces matrix negation.

(5) Cha robh mi sgith?
C-[NEG] be-[PAST] I tired
'I wasn't tired '

and *nach*, which introduces negative yes/no questions and embedded negation:

(6) Nach robh thu sgith?
C-[Q, NEG] be-[PAST] you tired
'Weren't you tired?'

(7) Thuirt Iain nach do cheannaich thu leabhar an diugh
Said Iain C-[NEG] buy-[PAST] you a book today
'Iain said that you didn't buy a book today.'

(8) Dh'fhaignich e nach robh thu sgith?
ask-PAST he C-[Q, NEG] be-[PAST] you tired
'He asked if you weren't tired?'

The final preverbal particle, and the one which we will be mainly concerned with, is *a*, which introduces relative clauses:[1]

(9) an leabhar a cheannaich thu an diugh
the book C-[REL] bought you today
"the book that you bought today"

(10) am program a bha thu ag èisdeachd ris
the program C-[REL] be-[PAST] you listening to
"the programme that you were listening to"

Relative clauses and wh-questions in Gaelic appear to involve the same basic structure. For example, Wh-questions employ the relative complementizer rather than the yes/no one:

(11) * Cò an robh sgith?
Who C-[Q] be-[PAST] tired
'Who was tired?'

(12) Cò a bha sgith?
Who C-[REL] be-[PAST] tired
'Who was tired?'

Cleft structures also make use of the relative complementizer. The following example uses the copula *is* in a reduced form, together with a pronominal element *e*, to introduce the focus of the cleft, which is then followed by a clause introduced by the relative complementizer:

(13) 'Se Iain a bha sgith
It's Iain C-[REL] be-[PAST] tired
'Its Iain that was tired.'

We can make sense of the morphological commonalities between relatives, wh-questions and clefts by assuming that the relative clause is basic, and that clefts and wh-questions are built up from relative clauses plus some extra material. This is transparent for clefts, which are introduced by the copula+pronoun cluster. This same cluster is also found in equatives (see (Adger and Ramchand to appear) for detailed discussion of this construction):

(14) ’S e Daibhidh an tidsear
It’s David the teacher
‘David is the teacher.’

Adger and Ramchand (to appear) argue that this construction involves a semantically bleached predicate (syntactically represented by the pronominal element of the introductory cluster) applying to the leftmost (subject) DP. The meaning of the predicate is then ‘filled in’ by the semantics of the rightmost DP, so that the whole construction has a reading which can be roughly paraphrased as ‘the property of being the teacher holds of David’.

When the subject of an example like (14) is a wh-element, the result looks as follows:

(15) ∅ Cò an tidsear?
It’s who the teacher
‘Who is the teacher?

In this example, the copula+pronoun cluster is null, either because some morphosyntactic operation has deleted it, or because it has a null [+wh] version. The fact that (15) is a Wh question corresponding to (14), demonstrates independently, then, that the copula is null in Wh-questions.

This now motivates an analysis of Wh-questions, in general, as also being based on a copular structure, but this time the rightmost element which provides the semantics of the predicate is a relative clause, rather than a DP. Wh-constructions in this language are then essentially clefts. The structure for a Wh question corresponding to the declarative cleft in (13) above, is (16):

(16) ∅ Cò a bha sgith
Who C-REL be-PAST/REL tired
‘Who was tired?’

This analysis immediately accounts for why the preverbal particle found in Scottish Gaelic Wh-questions is the same one that is found in the more obvious cases of relative clauses, and not the same one as the one found in Yes-No questions. The syntax-semantics mapping that we assume here is roughly that in (17)

(17) Copula [Wh-phrase] [Relative Clause]
It’s ‘Dè am program’ ‘a bha thu ag èisdeachd ris’
“which programme has the property that you were listening to it?”

We will adopt the idea, then, that the relative clause is the ‘core’ A-bar dependency in Gaelic, and the wh-questions are formed roughly in the way just suggested. We provide further evidence for this in the next section.

One of the striking things about the languages of the Celtic group is the (relatively) large number of distinct complementizer particles they possess, with the distinct semantic and distributional properties discussed above. The fine grained lexical distinctions within the C category have been used in the past to construct an argument for the reality of successive cyclic movement (McCloskey 1990, McCloskey 2002). For example, take the three way contrast below:

(18) Thuirt sinn **gun** do sgrìobh i an leabhar
say-PAST we that write-PAST she the book
"We said that she wrote the book"

(19) Dè **a** thuirt sibh **a** sgrìobh i?
what C-REL say-PAST we C-[REL] write-PAST she
"What did you say that she wrote?"

(20) *Dè a thuirt sibh **gun** do sgrìobh i?
what C-REL say-PAST we that write-PAST she
"What did you say that she wrote?"

In (18) we see the embedding complementizer *gun*, but, if an A-bar dependency reaches into the embedded clause, the complementizer which introduces it cannot be *gun*, but must rather be *a*. McCloskey used analogous data in Irish to motivate the idea that wh-movement takes place successive cyclically, and stops off at the edge of each intermediate CP, triggering the complementizer alternation. The crucial step in this argument is that movement and locality are tightly tied together, an assumption we reject for the reasons outlined in the introduction. We will argue, instead, that these data and others like them derive from the way that locality constraints affect syntactic dependencies between independently base generated items and not from movement itself.

The argument sketched above, that the Celtic complementizer alternation is an overt manifestation of a deep property of movement, namely its strict cyclicity, allowed proponents of this view to say that Irish simply provides overt evidence for the kind of derivation that is also found in English. Chomsky (2001b) suggests that English utilizes exactly the same syntactic resources as Irish to construct wh-dependencies, but that it simply neglects to manifest these syntactic (in fact, featural) properties morphologically. In contrast, we will argue that the two languages are fundamentally different in a way that is driven by the properties of the lexical resources at their disposal.

We have taken some time to establish the distribution of the complementizer *a* in Scottish Gaelic, because an explicit analysis of its featural properties and its effect on the semantic combinatorics lies at the heart of the proposal. In what follows, we will establish more firmly the conclusion that Wh-questions are formed from relatives in this language, and that neither involve movement in their derivation.

3 (Non-)Identity Effects

As was mentioned in the introduction, neither the existence of a gap, nor the appearance of locality effects are reasonable diagnostics for movement, given current theoretical assumptions. One natural question to ask is whether the question of movement vs. non-movement doesn't simply dissolve in a framework which uses Agree, with no principled diagnostic differences being detectable. However, this is not the case: there is still an important distinction to be

made, even if the possibility of null elements and/or covert movement is admitted. This is because, under the copy theory of movement, there is empirical content to the distinction between movement and Agree: if movement involves copying (or, alternatively, REMERGE; see Bobaljik 1995; Epstein, Groat, Kawashima, and Kitahara 1998, Chomsky 2001a), then the *same* element is located in more than one place within the hierarchical structure. However, if a dependency is constructed via AGREE, then two *distinct* elements enter into the relation. In clear cases of movement, we expect to find evidence for the existence of 'identity' effects which would be explainable on the availability of multiple copies of the same thing in different positions. On the other hand, if AGREE links features of two distinct items, we would expect to find no such 'identity' effects, but rather evidence that there are two distinct categories involved. In what follows, we show that Gaelic relatives and wh-questions show anti-identity effects, strongly suggesting that there is no copy at the base of the dependency.

The first argument turns on the notion of selection. If A-bar dependencies are movement, then it should be possible to literally put back the putatively displaced element into the trace position. This turns out not to be the case for Gaelic. Take, for example, a wh-question involving a predicative structure like (21).

(21) Dè an seòrsa tidsear [a tha annad]?
What the sort teacher C-REL is e in+you
"What sort of teacher are you?"

If the wh-expression *Dè an seòrsa tidsear*, 'what sort of teacher', has been moved from lower in the clause, then it should be possible to put a non-wh version of this expression in an appropriate position. This prediction is, however, incorrect:

(22) *Tha *tidsear math* annad
Is teacher good in+you
for 'You are a good teacher.'

A second argument of the same type rests on definiteness agreement between a preposition and its complement. In Gaelic, a number of prepositions agree with their complement for definiteness (Adger 2000, Adger and Ramchand to appear):

(23) ri tidsear
with-INDEF. tidsear
'with a teacher'

(24) ris an tidsear
with-DEF. the teacher
'with the teacher'

(25) ris na tidsearan
with-DEF. the-PL teachers
'with the teachers'

(26) *ri an tidsear
with-INDEF. the teacher
'with the teacher'

On the assumption that wh-questions involve movement in this language, and that movement leaves a copy, we might expect definiteness agreement to appear on Ps which have been stranded by wh-movement. However, this is not the case, as the following contrast shows: the *in situ* case displays definiteness agreement, while in the putatively moved case, although the wh-expression is clearly definite (viz. the definite article), the stranded preposition does not show agreement (see Adger and Ramchand 2002 for further discussion and examples):

(27) Chuir thu am peann anns a'bhocsa
Put-PAST you the pen in-DEF the box-DAT
'You put the pen in the box.'

(28) Dè am bocsa a chuir thu am peann ann/*anns
which the box C-REL put-PAST you the pen in-3RD SG/*in-DEF
"Which box did you put the pen in?"

The distribution of case marking makes the same point. Present participles mark their complement with genitive case (if the complement is genitive, and the register is fairly formal):

(29) Bha thu a'geàrradh na craoibhe
Be-PAST you cutting the tree-GEN
'You were cutting the tree.'

However, in a wh-question, the apparently displaced wh-element is always nominative:

(30) Dè a'chraobh a bha thu a'geàrradh
Which tree-NOM C-REL be-PAST you cutting
'Which tree were you cutting?'

(31) *Dè na craoibhe a bha thu a'geàrradh
Which tree-GEN C-REL be-PAST you cutting
'Which tree were you cutting?'

Of course, in each of these cases it might be possible to add extra stipulations to the system so that case or definiteness features are deleted on the traces of wh-expressions. However, that would simply amount to unnecessarily complicating the system to maintain the movement approach.

There are also good semantic reasons for doubting the movement approach. On the assumption that idioms require their component parts to be local at LF (Chomsky 1993), a movement approach should allow reconstruction, and hence wh-movement of parts of idioms. However, what we find instead is that idioms lose their idiomatic reading in constructions based on relative clauses:

(32) Bidh e a'toirt sop às gach seid
Be-FUT he taking whisp from each bundle
'He's not a very concentrated or focused person.'

(33) 'S 'ann às gach seid a bhitheas e a'toirt sop
It's from each bundle C-REL be-FUT-REL he taking whisp
*'He tries his hand at EVERYTHING.'
ok, as 'It's from every bundle that he has taken a whisp.'

A more interesting argument can be constructed from Condition C reconstruction effects. We can see that reconstruction leading to Condition C violations does indeed happen in Gaelic in certain sentence types. Consider the following example:

(34) 'S toil leam [[am peann t_i] aige] [a bha Iain a'sgriobhadh leis]$_i$
liking with me the pen at him C-REL be-PAST Iain writing with
'I like his pen that Ian was writing with.'
impossible with his = Ian's

In this example, we have a relative clause postposed from the object DP to a position outside of (or at least right peripheral to) that DP. Coreference between the pronoun and DP in this example is impossible, suggesting that the relative clause has reconstructed into the position of its trace, where the prepositional element *aige*, which inflects for the ϕ-features of the possessor, c-commands the R-expression *Iain*, leading to the violation.

This structure contrasts with wh-questions. In (36), the wh-expression containing the R-expression, has, on a movement story, originated as the object of the clause, and is hence c-commanded by the pronominal subject *e*, 'him'. However, co-reference between the pronoun and the R-expression is perfect, suggesting that no reconstruction takes place. This can be clearly seen in the contrast given below:

(35) Cheannaich e an dealbh de dh'Iain an dè
bought he the picture of Iain yesterday
'He bought the picture of Iain yesterday.'
impossible with he = Ian

(36) [Dè an dealbh de dh'Iain] a cheannaich e an dè
What the picture of Iain C-REL bought he yesterday
'The picture of Ian that he bought yesterday was very good.'
good with he = Ian

On a movement story, something special has to be said about why some movements, such as relative clause extraposition, reconstruct, while others don't. On the base generation approach to these constructions, A-bar movement reconstructs in general, but wh-questions in this particular language do not involve movement. [2]

We have shown that Gaelic displays a number of non-identity effects in wh-questions, and have proposed that this follows from the fact that the apparently displaced element does not, in fact, originate in an argument position of the lower predicate. We will adopt this approach for relatives too (see section 6 for justification). In the next section we outline the set of theoretical tools that will allow us to build an analysis consistent with these observations.

4 'Base generation' and AGREE

As Fox 2002 points out, under a MOVE (or REMERGE) theory of A-bar dependencies a rule of LF interpretation is required to 'translate' a syntactic object containing two identical copies into a semantically differentiated relation. Fox's postulated 'Trace Conversion Rule' does precisely this: the higher copy is interpreted as the operator and the lower copy is interpreted as the variable.

> "With trace conversion together with λ-abstraction, the structures created by Move/Remerge are interpretable.
> (11) which boy Mary visited which boy $\longrightarrow$ Trace Conversion
> which boy λx[Mary visited *the boy x*] " (Fox 2002, pg 67)

Under the analysis we will propose here, the two parts of the dependency are independent lexical items that are base generated separately. To implement the necessary syntactic connection a link must be established between them via the usual syntactic operations. Thus the problem is the converse of the semantic differentiation mechanisms required on the movement account. Rather, we have to establish a syntactic connection between the two parts of the dependency. Fortunately, the base generation account can appeal to the independently needed mechanism of AGREE, together with the idea of uninterpretable features. The intuition behind the implementation we offer here is that one independent lexical item will have a featural composition that requires it to be 'checked' or paired with another complementary lexical item during the course of the syntactic derivation. The resulting well formed syntactic representation will be straightforwardly interpreted at the LF interface without an additional 'translation' rule.

First we lay out the basic assumptions that we make about our general framework. The approach falls squarely within the Minimalist program (specifically, these are a version of the ideas in Chomsky 2001b and Chomsky 2001a), but adopts a particular set of choices about the nature of features and their interactions. We will assume, following Pesetsky and Torrego (2001), that the only features that are accessed by the syntax, are those which are potentially semantically interpretable (see also Svenonius 2002). However, a particular feature may be uninterpretable when instantiated on a particular head. This means that we allow in our analysis only those features which have a semantic motivation. Secondly, we make a distinction between *checking* and *valuing*: uninterpretable features need to be checked before transfer to the interface; unvalued features need to be valued before interpretation. We will assume that both these processes take place under AGREE (essentially, feature matching constrained by the Phase Impenetrability Condition). The checking of uninterpretable features is what forces certain syntactic items to be dependent on others for their successful deployment within a derivation. The valuing of features will be necessary for successful interpretation at the interface.[3]

We make one further assumption about the nature of the interpretational interface. Just as the PF interface only pronounces one phonological 'copy' of a MOVED item, the interpretational interface only interprets *one* version of features that are identical, where connected under an AGREE relation.

The next stage of constructing an analysis requires determining what the specific features involved should be. The minimal view is that the features required should be just those that are needed by the semantics to create the relevant relationship. The core construction under consideration is relativization, which we assume at least involves constructing a predicate in the semantics. This means that we need some syntactic feature that the interface will be able to interpret as predicate abstraction (see Heim and Kratzer 1998). We will call this syntactic feature Λ. We also need a feature that the interface will interpret as being the position that is abstracted over, the variable position. In practice, this is going to be some pronominal form, since a pronoun is the substitutional resource a language has for fully specified DP positions. In our view, what pronouns have in common is the fact that they are always referentially dependent, whether on a discourse antecedent, a syntactic antecedent, or an assignment function required by connection to an operator. For this reason, we assign all pronouns the feature [ID] (to evoke the intuition of 'identification'). Further, the *value* of the ID feature is different depending on whether that pronoun is identified by the usual mechanisms which find antecedents, (which we assume to be closely tied to the presence of ϕ-features on the pronoun), or whether its referent is identified by being associated with a predicate abstraction operator. In the former case, we will say that the ID feature takes the value ϕ, and in the latter, that it takes the value Λ. These features and their interpretations are summarised below.

- A feature interpreted as predicate abstraction, [Λ]
- A feature interpreted as a variable, [ID]

  ID:Λ : identification of the pronoun takes place via the assignment function determined by the operator bearing Λ.

  ID:ϕ : identification takes place directly by an assignment function determined by context (or Binding Theory) and consistent with the ϕ-features.

Given these features, there only needs to be a simple correspondence at the interface that allows a syntactic object of the following type to be interpreted as predicate abstraction.

(37) [$\Lambda \ldots$ ID] $\longrightarrow \lambda x \ldots x$

The correspondence we invoke here matches the syntactic structure to elements of the semantic representation language directly. This correspondence is starkly minimal compared to having a special rule which constructs the semantic representation. It allows us to maintain that there is an extremely tight relationship between the basic formatives of the syntax, and those of the semantic representation, and hence that the interface itself is extremely minimal: it essentially involves the substitution of semantic elements for syntactic ones.

4.1 The Basic Cases

The system just outlined posits a simple semantic correspondence which constructs interpretations based on a syntactic dependency involving the Agree operation. The Agree operation

takes two independent syntactic formatives and establishes a connection between them based on their featural makeup. For Gaelic, we propose that, in addition to the usual pronouns that we find, which are specified syntactically as [ID:ϕ], and which are identified via context, the language also has a pronominal with an unvalued ID feature. The lexical specification of this pronominal is:

(38) pro [ID:]

Since unvalued features must receive a value during the derivation, a syntactic connection must be established between a pronoun bearing [ID:] and a separate syntactic formative bearing a matching valued ID feature. Following the proposal we made above, that [Λ] could be a value of ID, we can say that the relative complementiser *a* bears an uninterpretable ID feature which has Λ as its value. Since this complementizer is used to build relative clauses, it will also bear an interpretable Λ feature, ensuring it is interpreted as a predicate abstractor. The uninterpretable [*u*ID: Λ] feature ensures that the complementizer must be paired with a pronoun of matching type for grammaticality.

(39) *a*[C, Λ, *u*ID:Λ]

This uninterpretable ID feature on C will Agree with the unvalued ID feature on the pronoun, and value it as Λ, an operation which will simultaneously check the ID feature on C. Schematically, we have the following kind of derivation.

(40)
C[Λ, *u*ID:Λ]	...	*pro*[ID:] $\rightarrow$
C[Λ, ~~*u*ID:Λ~~]	...	*pro*[ID: Λ]
λ x	...	x

The dependency is mutual here: the complementizer needs the interpretable ID pronoun to check off its uninterpretable features; the unvalued ID pronoun needs the valued ID of the complementizer to value it before interpretation.

We can now tie down the different morphological forms of the various complementizers to their featural specification. Recall that Gaelic morphologically distinguishes embedding and relativizing complementizers: the former bears simply a C feature, while the latter bears the specification [Λ, *u*ID:Λ]. This correctly captures the following contrast:

(41) An duine a bhuaileas e *Gaelic*
The man C-REL strike-REL he
'the man that he will strike'

(42) *An duine gum buail e *Gaelic*
The man C strike he
'the man that he will strike'

The example in (41) is ungrammatical because the ID feature on *pro* remains unvalued.

Our analysis extends immediately to the same pattern in Modern Irish:

(43) An scríbhneoir aL mholann na mic léinn *Irish*
the writer C-[REL] praised the students
'The writer that the students praised.'

(44) *An scríbhneoir go molann na mic léinn *Irish*
the writer that praised the students
'The writer that the students praised.'

Given the specification we have offered for the element at the bottom of the dependency (*pro*[ID:]), we immediately predict that cross-phasal dependencies will have to be connected by the relativizing complementizer, and not by the embedding complementizer. This is because the Agree operation can only penetrate as far as a phasal edge (Chomsky 2001b), so that anything lower than that edge is inaccessible. A derivation like the following one will lead to a final representation with an unvalued ID feature:

(45) C [Λ, *u*ID:Λ] . . . C [embedding] . . . *pro* [ID:]

Such a derivation corresponds to the ungrammatical cases of long distance relativization discussed in section 2, and repeated here:

(46) *An duine a thuirt e gum bhuail e *Gaelic*
The man C-REL said he that strike he
'The man that he said he will hit?'

However, if the intermediate complementizer is the relativizing one, then it will value the ID feature on the *pro* at the foot of the dependency. Following Pesetsky and Torrego (2001) (page 360), we assume that checked features at the edge of a phase are available to match features in the higher phase, allowing a further relative C to be Merged higher up in the derivation, and to have its uninterpretable ID feature checked:

(47) C [Λ, ~~*u*ID:Λ~~] . . . C [Λ, ~~*u*ID:Λ~~] . . . pro [ID: Λ]

(48) An duine a thuirt e a bhuaileas e *Gaelic*
The man C-REL said he C-RELt strike-REL he
'The man that he said he will hit?'

The constraint motivated above, that Agreeing interpretable features are only interpreted in a single position in the structure then allows us to capture why this sentence has the meaning it does. The *pro* which is at the bottom of the dependency is interpreted as a variable, the semantic value of which is constrained by the λ operator, which itself is the interpretation of the Λ feature. Λ is interpreted once, even though there are two syntactic instances. It cannot be interpreted in the intermediate position, since if it were, then the verb *thuirt*, 'said', would have to take a predicative rather than a propositional complement. However, it can be interpreted at the top of the dependency, since this produces a wellformed semantic output as a relative clause with a predicative interpretation.

This analysis captures the complementizer alternations which have previously been used to motivate successive cyclic movement. Given that syntactic feature valuation is itself constrained by locality theory (in this case by phases), and given the lack of identity effects in these constructions, there is no need to posit a movement operation to derive them.

4.2 Consequences

The approach adopted here, aside from automatically capturing the anti-identity effects, has a number of interesting consequences that do not follow from a movement analysis.

4.2.1 The anti-agreement effect

One property of A-bar dependencies in the Celtic languages is that they correlate, at least partially, with what Ouhalla (1993) terms the *anti-agreement effect* (AAE) (McCloskey 1990). Ouhalla defines this effect as being the appearance of an invariable default form of the verb, when the verb's subject is extracted. Other languages which display this effect include Palauan (Georgopoulos 1989), Kikuyu (Clements 1984) and Berber (Ouhalla 1993). In Gaelic, the AAE can also be seen when the complement of a preposition is extracted:

(49) Cò a' chaileag a bha thu a'bruidhinn *rithe/ris/*ri? *Gaelic*
Which girl C-REL be-PAST you at speaking with-3SF/with-3MS/*with
'Which girl were you talking to?'

The phrase *cò a' chaileag* is semantically and grammatically feminine in Gaelic. However, the preposition at the bottom of the dependency inflects for masculine singular agreement. Moreover, this preposition cannot occur in its plain uninflected form, *ri* (see examples (23)-(26) for the relevant paradigm).

Subject agreement in Gaelic is too poor to clearly see the anti-agreement effect, but subject agreement morphology in Irish is rich enough (Hale and McCloskey 1984):

(50) na daoine a chuirfeadh/*chuirfidis isteach ar an phost sin *Irish*
the men C-REL put-COND-3S/*put-COND-3PL in for the job that
'The men that would apply for that job'

The AAE falls out of the approach we have defended for A-bar dependencies in Celtic, since the bottom of the dependency is a *pro* bearing not ϕ-features as its ID value, but rather Λ features. Since there are no ϕ features on the pronoun, no morphosyntactic agreement is expected to be exhibited. The syntactic mechanism responsible for what is realised as morphosyntactic agreement accesses the ID feature, but since the value of this feature is not a ϕ-set, inflection is the default.

Note that this result is unexpected on the movement analysis. If the bottom of the dependency is occupied by a trace (that is, a copy), then extra stipulations need to be made to explain why this copy cannot trigger morphosyntactic agreement. Moreover, the parametric difference between languages which display the AAE, and those that do not (for example, English), needs

to be stated in some other way. On the current approach this distinction follows from whether the language constructs an A-bar dependency using a pronoun bearing [ID:], or whether it employs movement.

4.2.2 Sensitivity to Islands

Since the valuation of the [ID:] feature on *pro* is done via AGREE, and AGREE is sensitive to PIC, no valuing can take place across a phase boundary, except into its edge.

Since strong islands are a subset of phases, it follows that *pro*'s ID feature can never be valued inside an island by a C which is outside that island. Although detailed explication will need to await a coherent minimalist theory of islandhood, this is the correct prediction: relative dependencies headed by *a* and its counterpart in Irish, are ungrammatical ((51) and (53) are instances of a relative clause island, and (52) shows an adjunct island).

(51) *am fear a phòg mi a'bhean a phòs *Gaelic*
the man C-REL kissed I the woman C-REL married
'*the man who I kissed the woman who married.'

(52) *Dè an t-òran nach eil duine sam bith ag èisdeachd ri Iain ged a tha e a'seinn
which song C-REL/NEG is anyone listening to Iain although C-REL is he singing
Which song isn't anyone listening to Iain even though he is singing?

(53) *an fear aL phóg mé an bhean aL phós *Irish*
the man C-REL kissed I the woman C-REL married
'*the man who I kissed the woman who married.'

5 Resumptive pronouns

It will not have escaped the reader's notice that we have said nothing as yet about cases where the A-bar dependency terminates in a full pronominal, bearing interpretable ϕ as a value of ID, rather than in a pronominal bearing unvalued ID features. Of course such structures correspond to so called resumptive pronouns, so the question can be phrased as: what does our theory predict about the distribution of resumptive pronouns?

The simplest theory of resumptive pronouns, as noted by McCloskey (2002), is that they are just like other pronouns. This captures the fact that resumptive pronouns do not carry any special morphology, and that their syntax in any given language just is the syntax of pronouns in that language. Let us adopt this simplest theory, and integrate it with our approach to the syntax/semantics of A-bar constructions. If resumptive pronouns are just pronouns, then they have the specification [ID:ϕ], and there is no requirement that they check their ID feature.

Recall that the semantic correspondences we proposed in Section (4) made no reference to locality. Semantic rules seem to have this problem in general, as noticed by Chomsky in *On Wh-Movement*, discussing the same question:

'…The movement rules observes the usual constraints; the interpretive rule violates them fairly freely' (Chomsky 1977, pg 80)

Unlike Agree, the correspondence between the [Λ ... ID] configuration and its semantic interpretation is blind to syntactic locality effects, and creates the semantic interpretation irrespective of what the value of ID is. It follows that in the case where ID has ϕ as its value, we predict no locality effects. Resumptive pronouns are therefore predicted to be able occur in embedded clauses with no special requirement that the embedded clause be introduced by a spacial complementizer whose purpose is to establish a syntactic connection.

In our analysis of Gaelic, locality is dependent on two things: (i) the fact that an unvalued ID feature on a pronoun needs a value, and (ii) the fact that an uninterpretable ID feature on C needs to be checked. The Gaelic relativizing C is specified as [C, Λ, *u*ID:Λ]; this entails that, even if this C locally c-commands a pronoun specified as [ID:ϕ], the features do not match, and therefore the uninterpretable feature on the complementizer is not checked. This correctly predicts the absence of resumptive pronouns in Gaelic: [4]

(54) * an duine a chunnaic mi e *Gaelic*
the man C-REL see-PAST I him
'the man that I saw him'

However, if a language were to have a C just like the C we find in Gaelic, but lacking uninterpretable ID features (that is, it would just be C[Λ]), then such a C would be predicted to occur with a pronoun, which the semantic correspondence relation would interpret as the variable bound by the predicate abstraction operator. This is exactly the case that we see in Modern Irish (McCloskey 1990).

Irish has two Cs (*aL* and *aN*)[5] used to head relative dependencies. This is exemplified by the following contrast:

(55) An scríbhneoir aL mholann na mic léinn *Irish*
the writer C-REL praised the students
'The writer that the students praised.'

(56) An scríbhneoir aN molann na mic léinn é
the writer C-RES praised the students him
'The writer that the students praised.'

The example (55) has the basic structure seen immediately below:

(57) C[Λ] … *pro*[ID:ϕ]
λx … x

The first line of (57) gives the syntactic specification of the complementizer and the pronoun. The second line shows how the interpretation is derived via exactly the same semantic correspondence that is used to derive the interpretations of the relatives we discussed earlier.

The syntactic Λ feature is interpreted as a semantic λ-operator, and the syntactic ID feature as the semantic variable. This means that the clause introduced by *aN* is interpreted (correctly) as a predicate. Since the semantic rule is blind to syntactic locality effects, we expect to see resumptive pronouns in embedded clauses, with the intermediate clause being introduced by a simple (semantically inert) complementizer. This is exactly the right result:

(58) fir ar shíl Aturnae an Stáit go raibh siad díleas
men aN thought Attorney the state that were they loyal
'men that the Attorney General thought were loyal.'

As expected, resumptive pronouns in Irish can be found even in islands, since the semantic rule ignores not only simple embedding, but all kinds of locality:

(59) Sin teanga aN mbeadh meas agam ar duine ar bith aL tá ábalta í a labhairt
that language aN would-be respect at-me on person at all aL is able it-FEM to speak
'??That's a language that I would respect anyone who could speak it'

In this example we see the resumptive *í* inside a relative clause, being interpreted as the variable bound by the λ-operator introduced by the complementizer *aN*.

The system developed here also correctly predicts that *aN* cannot occur with a 'gap'.[6] This is because an [ID:] pronoun, cannot be valued by a C[Λ] with no [*u*ID] feature.

(60) *C [Λ] . . . *pro*[ID:]

(61) *An scríbhneoir aN molann na mic léinn
the writer C-REL praised the students
'The writer that the students praised.'

The table below summarizes the discussion so far:

Feature(s)	Language	Phonological Form	Effect
–	Irish/Gaelic	go/gun	pure complementation C
[Λ]	Irish	aN	pure Semantic binding C
[Λ, *u*ID:Λ]	Irish/Gaelic	aL/a	Syntactic dependency C (probe)
[ID:]	Irish/Gaelic	default *pro*	foot of syntactic dependency (Goal)
[ID:ϕ]	Irish/Gaelic	ϕ-featured *pro*(noun)	pronoun

6 Against Null Operator Movement

In the previous sections we have given an analysis of A-bar dependencies in Gaelic and Irish that does not make use of MOVE, but relies on base generation plus AGREE. Our motivation for the analysis came firstly from the empirical data on the lack of identity effects found in Gaelic A-bar dependency constructions. We proposed an analysis that claims these structures are syntactically and semantically of the following form schematically:

(62) Wh-word/DP ... C[F] ... *pro*[F]
(Which) thing ... λx ... x

The lack of identity effects militates against an analysis of the following form where the three copies are in place by the end of the derivation and then are interpreted differentially (as in Fox 2002).

(63) Wh-word/DP ... < Wh-Word/DP> ... < Wh-word/DP >
(Which) thing ... λx ... x

However, given the fact that all Wh-questions seem to be formed on the relative clause model in Gaelic, the lack of identity effects might merely be taken as evidence that the head noun of a relative structure has not been copied from the base of the dependency. It still leaves open the possibility that the head noun/Wh-word is base generated, but that there is movement of a null *pro* from the base of the dependency into the Spec, CP position (see, for example Browning 1987). The copied *pros* would then have to be interpreted differentially as in Fox's approach.

(64) Wh-word/DP ... *pro* ... < pro >
(Which) thing ... λx ... x

The lack of simple movement-based wh-question of the type in (65) in Gaelic and Irish follows simply on the base generation account if Wh-words in Gaelic do not bear the relevant features that would require/allow movement. Thus, an independent base generation strategy using *pro* at the base and a complementizer at the top must be used instead.

(65) Wh-word ... <Wh-word >
Wh:x ... x

But the facts can be made to follow on a movement account as well, if it assumed that *pro* in these languages possesses [wh] features in addition to its referential features, and that the referential features are sometimes default (for Gaelic) and sometimes non-default (English). In such an approach, we would then move a default pro bearing [wh] to Spec, CP.

However, we believe there are strong reasons to disfavour the movement of *pro* account. First of all, it is difficult to see how an account based on base generation and AGREE could be ruled out in principle, so something very elaborate needs to be said or else *some* cases would have to exist. Secondly, postulating the movement of a null *pro* loses the generalisation that these languages possess lexical complementisers that are specialised to this syntactic/semantic context. Under the base generation account, this is precisely what we expect, since the special complementizer *is* the lexical item carrying the operator feature. Under the movement of *pro*

account, it is a morphological accident that there is agreement between *pro* and the complementizer in these languages. Thirdly, we have seen from the Irish case of the complementizer *aN*, that a predicate abstraction operation is triggered in constructions without a gap at the foot of the dependency. This indicates that the element that is responsible for the operator interpretation is the special complementizer itself, not something that has been moved into an operator position.

For all these reasons, we believe that the most successful and compelling analysis of Wh-question formation in these languages is a base generation account such as the one we have sketched above. It is important to emphasise again that we are not ruling out MOVE as a syntactic operation, or even as a property of Wh-questions in certain languages. We are claiming simply that the MOVE strategy exists side by side in the world's languages with the MERGE strategy, with different empirical consequences.

In the next section, therefore, we turn to an examination of some other languages and make explicit where we consider the locus of parametric variation to be. We will see that the particular strategy a language adopts is a direct consequence of the lexical/featural inventory at its disposal, and that the pairing between lexical items and features is at the heart of the displacement property of human language.

7 Crosslinguistic Variation

7.1 MERGE Languages

We have been at pains to argue that the 'gap' at the foot of the A-bar dependency in Scottish Gaelic is not a result of movement, but of base generation of a pronoun with a very particular featural composition. One charge that might be levelled against such an account is that it makes no sense of the fact that the pronoun in question is actually non-overt. The only thing that follows from the base generation account of a syntactic A-bar dependency is the anti-agreement or reduced ϕ-featural content of the pronoun, not its nonovertness per se. Fortunately, when other languages are taken into account, this seems to be precisely what the generalisation is.[7] In São Tomense creole ((Hagemeijer 2000)), we find a pronoun equivalent to the Gaelic *pro* [ID:] in that it appears at the foot of A-bar dependencies but is not found in islands. This pronoun is however overt (a possibility predicted by our account), but shows no agreement (again predicted on the view of things that sees the identification via ϕ features as being in complementary distribution to dependence on an abstraction operator).

The data in (66) shows that the non-agreeing version of the pronoun is required at the foot of an A-bar dependency. The sentence in (67) shows that inside an island, the non-agreeing pronoun is ungrammatical and the only possibility is a true resumptive pronoun with full ϕ-features.

(66) Inen faka se ku n va mpon ku-e/ *ku-inen *São Tomense Creole*
3PL knife DEM REL 1SG cut bread with-3SG/ with-3PL
'These knives that I cut the bread with.'

(67) Inen migu se ku bo che di fesa se fla ku-inen/ *ku-e sa n'ai.
3PL friends DEM REL 2SG leave of party without talk with-3PL with-3SG are in-here
'*The friends that you left the party without talking to are here.'

In fact, São Tomense shows precisely the same pattern as Gaelic, in that it too has a lexically specific complementizer that appears at the edge of each CP when an A-bar dependency reaches into the CP, giving the complementizer alternation *kuma*/*ku*:

(68) Bo ka kunda kuma Zon konta soya se ku gosto?
2SG ASP think that Zon tell story DEM with joy
'Do you think Zon told the story with joy?'

(69) Ke nge ku bo ka kunda ku konta soya se ku gosto?
Which person C-[REL] 2SG ASP think C-[REL] tell story DEM with joy
'Who do you think told the story with joy?'

The cooccurrence of the invariable default pronoun with the lexically specific relativizing complementizer is exactly what is expected on our account. This correlation is unexplained on an obligatory movement account without further stipulation.

Another interesting possibility is instantiated by Welsh, which shares with its Celtic cousins Irish and Gaelic the lexical resource of specialized complementizers and the appearance of overt pronominals at the base of A-bar dependencies. However, there are differences here that might initially seem problematic for our view, since the base generated pronoun at the foot of an A-bar dependency has two properties that should not cooccur: syntactic locality effects and overt marking of agreement.

The following examples show ϕ-featured pronominals. In (70) the pronominal is null, but triggers agreement on the preposition. In (71) it is overt, and in an embedded clause.

(70) yr ysgol yr ai Deian a Loli iddi
the school REL went-IMPF Deian and Loli to-3SF
''the school that Deian and Loli went to"

(71) Y llyfr y dywedodd John y gwerthodd Mary ef *Welsh*
The book C said John C read-3SG Mary it
'the book that John said that Mary read it.'

That the null pronoun which triggers agreement isn't an Irish style resumptive is shown by the fact that it cannot appear inside islands (see Tallerman 1983; see also Willis (2000) for discussion of the range of possibilities in Colloquial Welsh):

(72) ??dyma'r dyn y cusanaist ti 'r ddynes a siaradodd amdano
here the man that kissed you the woman that talked about-3MS
'Here's the man that you kissed the woman that talked about him.'

This pattern is a challenge for our approach, since the locality effect (the fact that islandhood matters) suggest that we are dealing with an [ID:] pronoun which can be overt (as in São Tomense). However, in Welsh, the pronoun is apparently triggering agreement just like a ϕ-featured pronoun. If things are as they seem on the surface, this goes against our generalisation about the ϕ-feature impoverishment of these special pronouns.

However, a closer look at the pronominal system of Welsh turns out to support the morphological correlation after all. Welsh is different from the other two Celtic languages in having two versions of its pronouns both of which mark ϕ-features: there are the 'weak' ones, which mark agreement but which cooccur with verbal inflection; and the 'strong' ones which look as if the agreement features have been doubled, and which do not cooccur with verbal inflection. Weak pronouns are optional:

(73) Gwelais (i)/*fi ef
saw-1s I him
'I saw him'

(74) Gwellodd ef *i/fi
saw he I
'He saw me'

The fact that the weak pronouns in Welsh cooccur with verbal inflection suggests that the morphological agreement that they manifest is not syntactically active in some sense. This is because of the general complementarity between agreement features on an argument and agreement features on a verb in Welsh (and in Celtic more generally). This can be seen in the following paradigm:

(75) Darllenodd y dyn y llyfr
read-[3S] the man the book
'The man read the book.'

(76) Darllenodd y dynion y llyfr
read-[3S] the man the book
'The men read the book.'

(77) *Darllenasant y dynion y llyfr
read-[3PL] the man the book

Plural nouns trigger only singular agreement, while weak pronouns trigger full agreement.

Our hypothesis about this pattern is that the weak pronouns in Welsh function as [ID:] (morphology notwithstanding), while the strong ones are [ID: ϕ] (and therefore should act as resumptives in islands (see Rouveret 2001 for a detailed discussion)).

The data below confirms this and shows a case where an A-bar dependency reaches inside an island. The weak form of the pronoun is ungrammatical, as we saw above; only the strong version is possible, showing that it is the pronoun in the language that bears [ID:ϕ]:

(78) dyma'r dyn y cusanaist ti 'r ddynes a siaradodd amdano ef
here the man that kissed you the woman that talked about-3MS he-3MS
'Here's the man that you kissed the woman that talked about him.'

The base generation account we have developed predicts languages where both the complementizer and the foot of the dependency are overt, and this is what we found to be the case in both São Tomense and Welsh. We can tell we are dealing with a true syntactic dependency here because of its sensitivity to islands. These cases are crucial, because correlating locality effects with Movement would predict the foot of a syntactic dependency to always be a gap, unless we seriously complicate our spellout mechanisms for copies. These overt syntactically dependent pronouns contrast with the true independent resumptives (which can participate in a purely semantic dependency) in that they consistently show impoverishment with respect to ϕ features. We have speculated that this inverse correlation is found because ϕ features and Λ features are two choices for fulfilling the syntactic identification requirements for pronouns.

7.2 MOVE Languages

Having established a case for the existence of languages that construct A-bar dependencies using a base generation (MERGE) strategy, we turn now to the case of English where it seems as though the MOVE strategy is used. We have argued that there are empirical differences between the two strategies, and that the syntactic and lexical mechanisms are different despite similar semantic effects.

English shows 'identity' effects in the construction of its questions, namely the existence of reconstruction for the binding theory (79), and idiom chunks (80) (see Bianchi (1995) among many others for arguments for the presence of identity effects in English).

(79) Which picture of himself$_i$ does John$_i$ like best?

(80) How much advantage was taken of John?

English also has no distinct complementizer that shows up in relative constructions.

(81) (a) I said (that) I saw him.
(b) The man (that) I saw

This indicates that English lexical C is a true subordinator, and that there is no lexical C which has an interpretable Λ feature. Thus we also predict that resumptive pronouns are not strictly grammatical, but have the flavour of a last resort processing strategy.

(82) ?? Here's the man that you kissed the woman that talked about him.

If the complementizer in English does not bear the Λ feature, the element responsible for the introduction of the feature into the derivation must be the Wh-element itself. Another striking difference between English and Celtic is the fact that wh-expressions in English actually show up overtly at the edge of relative clauses in what we might plausibly interpret as the abstraction operator position (83).

(83) The man who I saw

At the same time, the English wh-phrases must also bear features that allow the copy that remains in base position to be interpreted as the variable at the foot of the dependency. The simplest conclusion to draw here is that the English Wh-elements simply possess *both* interpretable features as part of its lexical specification: [Λ] and [ID: ϕ]. The semantic correspondence in English is just the same as the one in Gaelic—it searches for the two syntactic features that it can use to construct the semantic relation. However, in English, the LF representation contains copies, rather than base generated elements and the semantic correspondence is between features in the multiple copies. Since features in Agree relations are interpreted only once, the Λ-feature is interpreted at the top of the dependency and the [ID: phi] at the bottom. Any other choice leads to semantic incoherence with the remainder of the structure.

(84) The relatives [$_{CP}$ who [Λ, ID:ϕ]] C [C] [$_{TP}$ I thought [$_{CP}$ $\langle$ who $\rangle$ [Λ, ID:ϕ]] C [C] [$_{TP}$ $\langle$ who $\rangle$ [Λ, ID:ϕ]] were moving]]]]

This now gives us a way of motivating the movement operation. Since the semantic correspondence needs to interpret both the Λ feature and the interpretable ID feature, but since these features are on a single lexical item, movement must take place to create copies that the semantic correspondence can apply to. On the assumption that the derivation is chunked into phases, each movement can be no further than the edge of the phase within which the features are generated. This forces syntactic locality effects, and bars movement out of CPs, giving rise to standard locality and cyclicity. The fact that the value of ID is ϕ captures the absence of the Anti-Agreement effect in English.

Notice that the locality effect here is driven by the constraint at the interface: the interpretable feature must appear in an interpretable position by the time the semantic correspondence rules apply; failure to move successive cyclically will strand the interpretable feature in an uninterpretable position (for example, requiring a wh-expression to be interpreted simultaneously as a predicate abstractor and as a variable).

What makes English different, then, from the base generation languages is just the difference in the items in their lexical inventories. Scottish Gaelic has a lexical item which just possesses the Λ feature, and a different lexical item that possesses the [ID:] featural specification. This means that Gaelic can build up a relative clause simply using a MERGE strategy and its individual building blocks. Movement is neither necessary nor helpful in this language for constructing the dependency. English, on the other hand, bundles the interpretable Λ and the interpretable [ID: ϕ] features together within the same lexical items. This means that in building up a relative clause a MOVE strategy is forced in order to derive a structure where the Λ feature of that item can be successfully interpreted.

This view of things gives a new perspective on the displacement property of human language (Chomsky 2001a). Given the principle of full interpretation, and given the semantic combinatoric constraints on different interpretational features, any lexical item with more than one interpretable feature on it will be forced to MOVE. Movement may appear to be a departure from perfection in some senses, but given the radical inefficiency of having one single lexical

item per interpretable feature (especially when they cooccur), it is not surprising that languages choose a strategy that allows more featurally complicated lexical items together with MOVE. The point is that both strategies are given to us by the computational system. The choice of MERGE vs. MOVE depends solely on the way the interpretable features are configured within the lexical inventory of the language.

8 Conclusion

To conclude briefly, we have examined the phenomenon of question formation and relative clauses in Scottish Gaelic (and Irish) to argue that far from being a language family that gives overt evidence for successive cyclic *movement*, what we are seeing is a case of base generation. The point is that under current conceptions of the architecture of grammar, long distance dependencies that show locality effects could in principle be either MOVE (REMERGE) or MERGE. (cf. Chomsky 1977). A MERGE strategy is possible if the language has the lexical items with the appropriate syntactic features to set up a dependency; features are then checked/valued via AGREE which is subject to locality (Gaelic). In the case of MOVE, copies are available in each position and identity effects emerge. In both cases the same semantic correspondence between syntactic features and interpretations is invoked.

In constructing our analysis, we have assumed that a certain 'minimal kit' of interpretable features is necessary at the interface to feed the meaning representation of a semantic dependency, and this is the same for all languages. Further, the semantic correspondence between LFs and the C-I interface is also the same for all languages (although the details of the LFs themselves can differ). In particular, we have argued for the feature Λ which is interpreted as predicate abstraction, and we have argued for a syntactic feature on pronouns, ID, that marks a pronoun as requiring a semantic interpretation (via an assignment of values to variables). Two distinct possible syntactic values for ID were proposed: ϕ, which marks the pronoun as syntactically independent of any abstraction operator and therefore potentially able to access an antecedent via an assignment function (appropriately constrained by Binding Theory and/or the current discourse[8] ; and a Λ value which marks it as being dependent on an abstraction operator. This proposal captures the antiagreement effects that we observed for languages of this type.

In terms of the syntactic mechanisms available as part of the basic computation, we assume these also to be the same across languages. Specifically, we believe in principle that all languages may make use of both MERGE and MOVE in different contexts. What we have argued, though, is that languages may differ according to where they deploy each strategy, and in particular A-bar dependencies can be constructed in either way. In fact, given the properties of the system at our disposal in a general minimalist framework, it is difficult to see how a derivation of an A-bar dependency via base generation could be prevented, without stipulating that certain syntactic features cannot be lexicalised separately (a move that seems ad hoc and moreover, empirically false).

What a speaker knows therefore when they know their specific language is the inventory of lexical items at their disposal—the pairings between phonological form and bundles of syntactic

features. If a language has a lexical item which bundles together more than one interpretable feature, this forces a MOVE strategy to create an interpretable structure. If distinct lexical items are to be interpreted as dependent on each other, AGREE operates in the syntax to allow this. Our system gives us a new perspective on the displacement property of human language: it results from the interaction between universal syntax semantics correspondences, and the different ways that languages can bundle interpretable features within a single lexical item.

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Notes

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[1]The finite auxiliary or verb also displays particular inflection depending on whether the C particle is a relativizing particle, is absent, or is an overt complementizer. We ignore this in the glosses.

[2]It is difficult, in Gaelic, to construct an analogous argument involving Condition A reconstruction effects, since all anaphors in the language have a logophoric use:

(i) An e e fhèin a choisinn an diugh?
Is it himself C-REL win-PAST today
'Was it him that won today?'

It is true that examples involving wh-expressions containing anaphors are slightly degraded, but they are easily interpretable:

(ii) ?Dè am fear de na peannan *aige fhèin*$_i$ a bha Iain$_i$ a'sgrìobhadh leis
Which one of the pens at himself C-REL was Iain writing with-3SG/M
'Which one of his own pens was Iain writing with?'

We assume that the anaphor here is behaving logophorically, rather than being bound by the subject after reconstructions. In fact, coreference between the anaphor and subject is only available when the discourse context is right, confirming this perspective.

[3]In the papers cited, Chomsky proposes that checking essentially is valuation, and that an unvalued feature is just an uninterpretable one that needs to be checked. However, such a feature will still have to be marked with some diacritic to ensure that it deletes, thus reintroducing the basic distinction. For this reason, we maintain the distinction between checking and valuation.

[4]Resumptive pronouns do appear in certain cases as last resort devices to facilitate processing an utterance of an ungrammatical sentence. However, these are quite distinct from the true resumptives discussed in this section, in that they cannot appear except in islands.

[5]The capital letters on these representations do not signify phonological segments, but are rather abbreviations for the morphophonological effects that each of the complementizers has on the immediately following verb. See Duffield (1995) and McCloskey (2000) for detailed discussion.

[6]Since Irish pronouns can be null, a literal 'gap' is, in fact, possible. However, such a null pronoun will always cooccur with morphosyntactic agreement on a head, marking the ϕ-features of the pronoun, and thereby indicating its presence. See Hale and McCloskey (1984) for extended discussion.

[7]Many thanks to Tonjes Veenstra for bringing this data to our attention.

[8]Nothing however prevents the semantic rules from interpreting any pronoun at all as the base of the dependency, provided the complementizer chosen does not impose *syntactic* conditions in the form of uninterpretable features whose requirements would be violated if it did so

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