A labelling solution to a curious EPP effect

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Abstract

Irish and Scottish Gaelic show a curious effect where, in finite sentences containing DP arguments, the highest DP obligatorily raises to the subject position, but when the arguments are PPs, they obligatorily remain low. This is challenging for standard accounts of the EPP, which take movement to subject position to be feature driven by an obligatory high probe on T. This squib suggests that the pattern follows elegantly from the labelling system outlined in Chomsky 2013, 2014 with the proviso that unaccusative v acts as a phase head for Transfer but does not bear uninterpretable ϕ-features. A crucial part of the solution is the incorporation, into the theory, of Manzini's (2009) proposal that there is no syntactically represented EPP position in pro-drop languages, although I suggest that this be weakened to the idea that there need be no such position, to capture parametric differences in subject interpretation between Italian and Irish.

1 Introduction

McCloskey (1996) examines a curious phenomenon in Modern Irish, where there is an alternation between what he calls 'salient' versus 'putative' unaccusatives. These are predicates which take their single argument either as a PP, or as a DP:

(1) Neartaigh   ar a ghlór
     strengthened on his voice
     'His voice strengthened'   Salient Unaccusative

(2) Neartaigh   a ghlór
     strengthened his voice
     'His voice strengthened'   Putative Unaccusative

McCloskey shows that the DP argument of a putative unaccusative is in the same position as the subject argument of a transitive: that is, it is in the standard subject position. The PP argument of the salient unaccusative, however, is in a lower position (the complement of the verb). This is most clearly seen when the verb types appear in progressive constructions:

(3) Bhí ag   neartú   ar an nglór
     was PROG strengthen on the noise

'The noise was getting louder'   Salient Unacusative
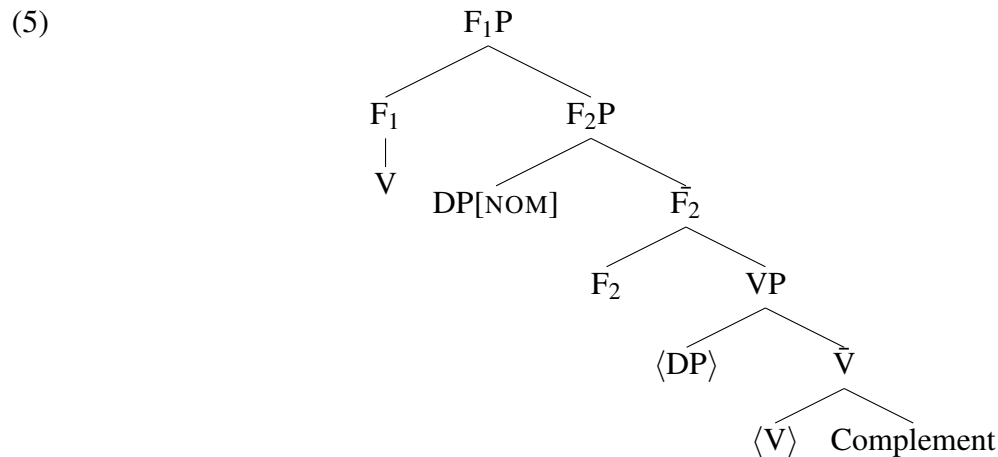
(4)   Tá mo shaibhreas ag   méadú
       is my wealth   PROG increase
       'My wealth is increasing'   Putative Unaccusative

(3) shows that the PP argument occurs after the non-finite form of the verb (in the usual comple-
ment position) while in (4), the DP argument occurs before the non-finite verb (in the usual subject
position). McCloskey argues that there is no null expletive in (3), (as is evident from the absence
of definiteness effects) so that there is, in these examples, no subject at all. He concludes that the
Extended Projection Principle does not hold in Irish.

    The following characterization of the phenomenon seems appropriate: when there is at least
one nominal argument present in a finite sentence, the highest obligatorily raises to the structural
subject position, but in the absence of nominal arguments, that position remains unfilled.

    McCloskey's analysis of this pattern takes there to be an optional functional projection in Irish
clause structure that bears nominative case features and to which a subject raises (so the verb itself
raises to a higher functional position):

(5) F_1P
                            /   \
                        F_1 F_2P
                         | /   \
                         V   DP[NOM] $\bar{F}_2$
                                            /   \
                                        F_2 VP
                                                   /   \
                                               ⟨DP⟩ $\bar{V}$
                                                          /   \
                                                      ⟨V⟩   Complement

In a putative unaccusative, F_2 is present, and requires movement of a DP to its specifier to check
nominative case. If the derivation does not contain F_2, the single argument DP will not have its
case checked, and the derivation will crash. In a salient unaccusative, a derivation that contains
F_2 will crash, as the DP inside the PP argument of the verb will already have its case checked,
while in the absence of F_2, the derivation will converge. It follows that the single argument DP of
a putative unaccusative will always raise, and that the PP argument of a salient unaccusative never
will, even though the projection of F_2 is optional.

    While this proposal is sufficient to capture the generalisation, inserting an optional head to
make movement happen in a putative unaccusative but not in a salient one is uncomfortably close
to simply stating that movement must happen in the former and can't in the latter. Adger (2000),
noting this, suggests an alternative analysis that relies on a (morphological) surface filter, requiring
DPs to be adjacent to a case assigning governor, but that is equally unappealing.

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2 A labelling alternative

The system developed in Chomsky (2013) and Chomsky (2014) suggests a more satisfying solution to this problem. In contrast to systems where features of some head H attract lower elements of structure into H's specifier, in Chomsky's approach, some XPs are effectively ejected from their Merge position, while others are not. The capacity for an XP to remain in situ is dependent on whether the constituent containing it can be labelled. A labelling algorithm (LA), initiated on Merge of a phase head, searches each constituent in its domain for a label. In the simplest case, a constituent will be labelled by the lexical item that heads it (6-a). However, when two phrases are Merged, LA searches into each for lexical items to act as the label. In the typical case, the heads will not match and no unambiguous result can be returned by LA, so the search fails. However, if the two heads bear a (relevant) feature in common (say a ϕ feature), then that feature is returned as the label for the whole constituent (so in (6-b), the whole constituent is labelled by the ϕ features on the heads X and Y). Alternatively if one of XP or YP raise, leaving a trace, LA treats the trace as invisible to search, and so returns the label of the non-moved phrase (in (6-c), where angled brackets notate a lower occurrence of a moved element, LA will therefore return Y as the label of the whole constituent). Chomsky connects the inability of LA to see traces to the idea that it needs access to all copies of the relevant element, and this is only possible in the topmost position:

(6) a. { H, XP }
     b. { { X[ϕ], ZP}, {Y[ϕ], WP}}
     c. { ⟨XP⟩, {Y, WP} }

Schematically, we have a derivation that looks as follows for the external argument (see Chomsky 2013 for details). Categories such as DP, v*P etc are used for expository convenience. Such nodes actually have no category in this system:

(7) a. { DP, v*P } no head and no agreeing features, so not labellable
     b. { DP[ϕ] {$_\alpha$ T[ϕ] { ⟨DP⟩ v*P } } } DP bears ϕ-features, as does T, so the constituent immediately containing both can be labelled by these ϕ features (cf (6-b)). The smaller constituent with the trace of DP in its specifier can be labelled by the v* head of v*P, as the DP trace is invisible (cf. (6-c)).

What of the constituent α containing just T and its sister? Chomsky's proposal is that, in English, T cannot serve as a label unless there is a DP bearing ϕ features merged to its mother, in which case it is 'strengthened' and can thereby label its mother.

What about an object? In this situation we have the following structure:

(8) [$_\alpha$ root DP]

Chomsky proposes that roots, adapting Borer 2005 et seq., cannot serve as labels, so α cannot be labelled by the verbal root. He proposes that a root selected by v* inherits the ϕ features of v*, and eventually raises to conjoin with v*. Since the root bears ϕ features, and the object DP bears ϕ features, the following would be a well formed structure:

(9) root+v* [$_\beta$ DP [$_\alpha$ ⟨root⟩ ⟨DP⟩]]

Here the ϕ-features on root and on DP allow the labelling of β. I'll assume that α, being empty, does not require a label.

(9) is well formed, but is it required? Standardly, DP objects are taken to be case checked in situ. Chomsky discusses ECM subjects, which he shows can raise to adjoin to the constituent headed by the root, but he does not discuss simple objects. It turns out that these too are forced to move in this system.
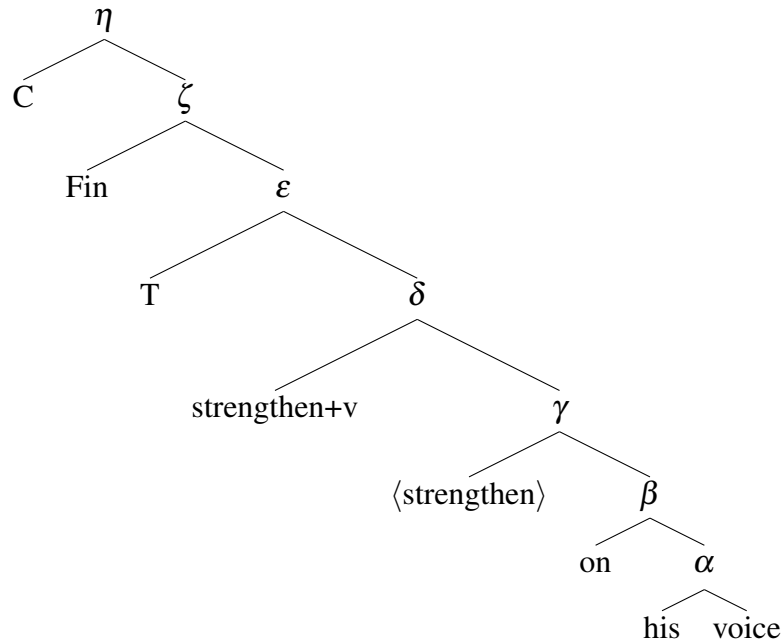
Under the extension of the system developed in Chomsky 2014, when the root raises to v*, it effectively deletes v*, and the various properties of v*, which have been inherited by the root, become active on the root (and hence on its copy). Crucially, for Chomsky's analysis of ECM, the root inherits v*'s phasehood, and therefore the root's complement is Transferred. This is problematic if the object remains in situ for two reasons: first, it incorrectly predicts that the object will no longer be subject to later syntactic computation; secondly, if the object bears a structural case feature, this will be transferred unchecked. Assuming that DPs do indeed bear a structural case feature, an object DP will have to move from its in situ position, or the derivation will crash. It follows, then, in Chomsky's system, that objects, whether they are direct objects or ECM subjects, are forced to raise[1].

This system predicts the Irish pattern with two further well-motivated assumptions. The first is that, in Irish, as in *pro*-drop languages like Italian, T is able to serve as a label, parametrically distinguishing these languages from English (see Chomsky 2014).The second assumption is that unaccusative v acts as a phase head for Transfer, but bears no ϕ features. The idea that unaccusative v behaves in the same way as transitive v* in terms of its phase properties is expected if phasehood is linked to propositionality, and receives empirical support from work that shows that the edge of unaccusative v provides the same reconstruction sites as v* (Fox 2002, Legate 2003).

To see how this works, consider a salient unaccusative in Irish with a single PP argument:

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[1]Chomsky discusses the possibility of the movement being optional for CP complements of verbs like *think*, but since these do not carry a case feature, the argument sketched here does not apply. Indeed, if the movement of CP complements to a higher spec is possible, this should allow successive cyclic movement from their specifiers, possibly providing an account of why some languages do not allow successive cyclic wh-movement (they do not raise CP complements)

(10)

```
                          η
              ┌───────────┴───────────┐
              C                       ζ
                          ┌───────────┴───────────┐
                         Fin                      ε
                                      ┌───────────┴───────────┐
                                      T                       δ
                                                  ┌───────────┴───────────┐
                                             strengthen+v                 γ
                                                              ┌───────────┴───────────┐
                                                         ⟨strengthen⟩                 β
                                                                              ┌───────┴───────┐
                                                                             on              α
                                                                                      ┌──────┴──────┐
                                                                                     his          voice
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The lowest phase head here is v, which searches in its domain to ensure a label can be found for each constituent. Since v is a phase head, and its properties are transfered to the (copy of) the root, the PP *on his voice* is Transferred. The DP inside that PP already has its structural case feature checked (I leave aside how this happens) and α and β are labelled by their heads. The root in γ is invisible to labelling, so γ simply has the same label as β. The next phase head is C and here the labels are straightforward: η is labelled by C, ζ by Finiteness, ε, δ by T and v respectively. Nothing moves, and all constituents have a label. The PP has the independent phonetic and semantic coherence expected of Transferred units. Like Chomsky's treatment of Italian, which follows Manzini 2009 in taking there t be no syntactically active EPP position, Irish does not require movement to satisfy any property of T. I'll assume that the verb-initial order is derived by post-syntactic raising of v to Fin (perhaps by a direct linearization procedure that simply pronounces the chain of head positions at Fin, as in Adger 2013).

Now consider a structure for the putative unaccusative, which is close to identical aside from the P:

(11)
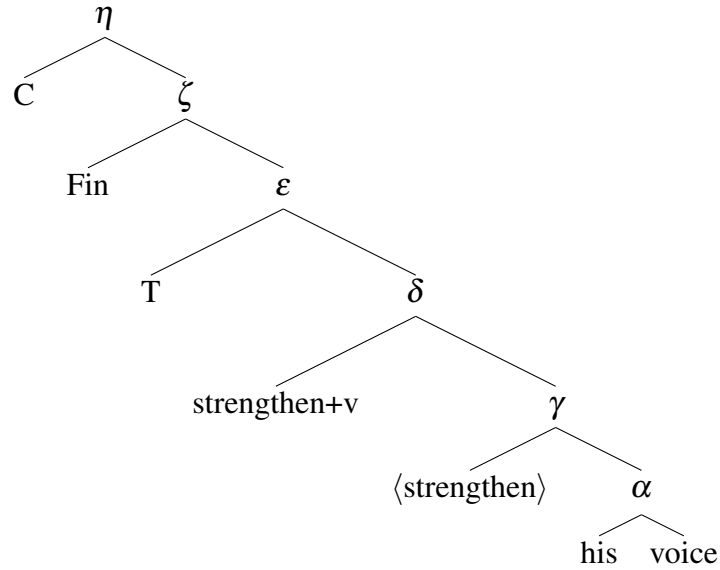
Since v is unaccusative, it bears no ϕ-features and so the root does not inherit ϕ-features from it. However, the root inherits v's phasehood after root to v raising, and therefore the DP *his voice* should Transfer. However, Transfer of this DP will lead to a crash, as the DP bears an unchecked case feature. However, in this case, the DP cannot internally Merge with γ, since the root bears no phi-features and the result would not be labelled. The same holds for Internal Merge of the DP to any of the intermediate categories until it reaches T. At this point, the DP Internally Merges with the constituent headed by T, both share ϕ-features, and the resulting constituent can be labelled as usual. The following structure shows this:

(12)
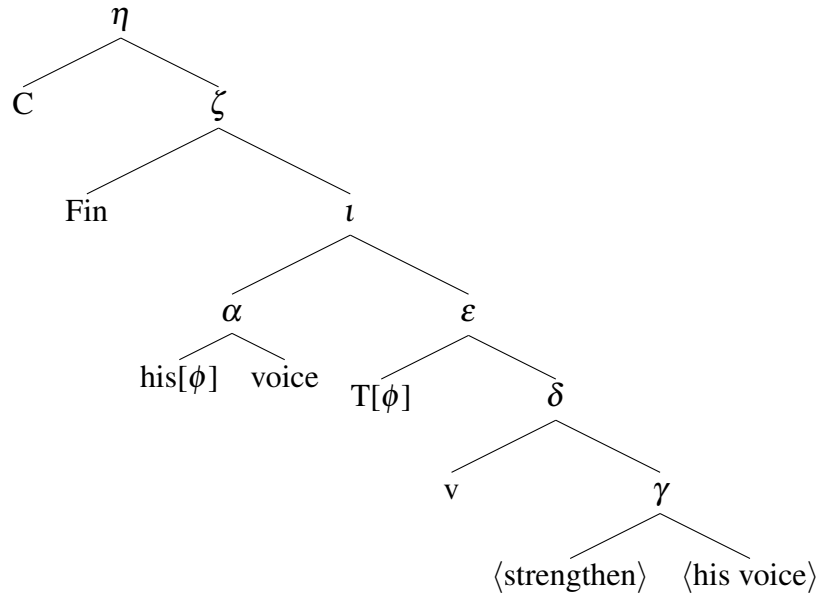
Since everything in γ is invisible to LA, γ does not require labelling and the various other syntactic objects are labelled just as before, with the addition that ι will receive a label, as the heads of its subconstituents (D and T) agree in ϕ features.

There are two core intuitions underpinning this analysis. The first is that, in Irish, T does not require a subject (that is, like in McCloskey's analysis, Irish does not have the EPP property). The second is that the object of an unaccusative is forced to leave its base position because there is no head that can serve to label the constituent containing it, and there is no head to whose specifier it can move (resulting in a label via ϕ-feature sharing). The first such head is T, giving rise to the pattern.

3   Is this an improvement?

McCloskey's analysis sought to capture the somewhat anomalous nature of subject positions in Irish via an optional functional head bearing case features. This analysis captured the anomalous nature of EPP-type effects in Irish. However, the technology proposed there basically restates the problem. Adger's (2000) solution tried to capture the pattern by a filter requiring nominative case to be checked in a surface head-XP configuration, but that is equally unsatisfying, as it makes nominal licensing in Irish quite distinct from what happens in other languages, and quite distinct from accusative case.

The new proposal takes from Adger (2000) the relevance of the lack of a head inside the VP in an unaccusative base configuration, and from McCloskey (1996) the notion that T can, but need not, host a specifier, but places these ideas within a theoretical context which makes them natural consequences of a larger system.

The system proposed here adds to Chomsky (2014) nothing beyond the idea that unaccusative v is a phase head but bears no ϕ features. Salient unaccusatives leave their single argument in situ, as the case licensing of the DP is met by it being a complement of P. The single argument of a putative unaccusative, in contrast, cannot stay in situ, it would be transferred with an unchecked case feature. Since unaccusative roots are selected by v, they do not inherit ϕ-features, so the DP object cannot internally Merge with the constituent containing the root. It is therefore forced to Internally Merge with the constituent headed by T, which has inherited ϕ-features from C. The net result is to capture the same pattern as McCloskey's and Adger's systems do, but without an optional functional head or a surface government requirement. In fact, the virtue of the proposal developed here is that it does not require any special stipulation to capture the pattern, the differences between English, and Irish reducing to easily detectable properties of the input (whether unaccusative V selects a PP (Irish) or a DP (English); whether T can serve as a label allowing *pro*-drop (Irish/Italian) or not (English)).

A final comment on in situ unaccusatives without a P (as in Italian, for example Belletti 2001): salient unaccusatives in Irish show no sensitivity to definiteness (McCloskey 1996, page 261), while in situ unaccusatives in Standard Italian do, suggesting a somewhat different syntax for the verb classes in the two languages. Moro (1997) has proposed that certain unaccusative subjects are actually the subjects of a small clause complement of the unaccusative verb, where the predicate of the small clause is a locative, so that (13) could be assigned a rough structure as in (14):

(13)   É arrivato uno studente al   giornale
        is arrived a   student to-the newspaper
        'A student arrived at the newspaper'

(14)   v arrive [$_\alpha$ a student [at the newspaper]]

Here *a student* Externally Merges with the PP *at the newspaper*. However, this is an {XP, YP} construction and hence α has no label. Following Koopman (2000) and much subsequent work, we can take there to be a functional directional P that takes the locative small clause as its complement.

(15)   v arrive [$_\beta$ P [$_\alpha$ a student [at the newspaper]]]

Assuming either that P's ϕ features are inherited by *at*, leading to labelling by agreement, or that *a student* internally Merges to P which bears ϕ, we derive a post-verbal subject which is internal to the vP (in fact, to the PP in this analysis). The former analysis looks as follows:

(16)   v arrive [$_\beta$ P [$_\alpha$ [a[ϕ] student] [at[ϕ] the newspaper]]]

Here P transfers its ϕ-features to the preposition *at*, and α is labelled because LA sees the relevant ϕ-features. The alternative analysis is:

(17)   v arrive [$_\beta$ [a student] P [$_\alpha$ ⟨a student⟩ [at the newspaper]]]

Here β is labelled by the agreeing ϕ features of DP and P, and α is labelled by the locative P, since the trace of DP is invisible to labelling. If P is a phase head here, it may be that it is associated with existential closure, giving rise to definiteness effects. The difference between Italian unaccusatives and Irish ones (which are in quite different semantic classes), is that the former involve a small clause predication structure, with the subject licensed by an abstract P head, while the latter are simple DPs, case licenced by an overt P head. In both languages the P head is optional, allowing the lower argument to escape to a higher position.

4   Conclusion

The partcular approach to labelling proposed in Chomsky's (2013)/(2014) system derives one half of the solution that is proposed here to the Irish EPP pattern: rather than elements being attracted to positions, Chomsky's proposals about labelling effectively eject them from positions where they would lead to unlabelled structures. Crucially, the single argument of an unaccusative is moved from its base position, because little v is too weak to license it in that position, a weakness in little v's capacity to label. Although this is elegantly statable in Chomsky's system, the core idea, that unaccusatives cannot license their objects in situ, can of course be stated or derived in other approaches.

The second half of the solution to the EPP propblem is the development of a theory that allows subjects in pro-drop languages to raise to the specifier of TP, without requiring them to do so. This is effectively Manzini's (2009) proposal that there is no syntactically represented EPP position in *pro*-drop languages. Chomsky's theory relies here on the notion that some languages have sufficiently strong ϕ features on T that no subject is required; however, moving some ϕ-bearing element to the specifier of T will do no harm. Other languages, like English, require some specifier for T, to strengthen T's features so that the containing phrases can be labelled. This is the core novelty here: in *pro*-drop languages, the subject does not move to the specifier of TP because it has to, but because that position is available and of the right sort[2].

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[2]Extensions of the system I presented in Adger (2013) also have this property. In that system (e.g. Adger 2016), a nominal specifier of a verbal extended projection is licensed as a specifier because it bears a uV feature. This allows it

Notice, however, that if there were other positions of the relevant sort, the DP could come to rest in these instead, giving rise to further parametric variation between languages where moved objects of unaccusatives have topical readings, and those which do not. In fact, Adger (1996) provides evidence that, in Standard Italian, the moved arguments of unaccusatives are interpreted as topical, in contrast to what McCloskey reports for Irish. It may be the case then, extending Chomsky's parametric account somewhat, that, while in Irish the single argument of an unaccusative indeed finally stops in the specifier of TP, in Italian the relevant functional category is one encoding topicality (Manzini and Savoia 1997).

References

Adger, David. 1996. Economy and optionality: the interpretation of subjects in Italian. *Probus* 8:117–135.

Adger, David. 2000. VSO clause structure and morphological feature checking. In Robert Borsley, ed., *Syntactic Categories*, 79–100, New York: Academic Press.

Adger, David. 2013. *A Syntax of Substance*. Cambridge, MA: MIT Press.

Adger, David. 2016. Roll-up, roll-up, there's nothing to see, Baggett Lecture 2, University of Maryland, http://tinyurl.com/zg7rwfa.

Belletti, Adriana. 2001. Inversion as focalization. In Aafke Hulk and Jean-Yves Pollock, eds., *Inversion in Romance and the Theory of Universal Grammar*, 60–90, Oxford: Oxford University Press.

Borer, Hagit. 2005. *In Name Only: Structuring Sense*. Oxford: Oxford University Press.

Chomsky, Noam. 2013. Problems of projection. *Lingua* 130:33 – 49.

Chomsky, Noam. 2014. Problems of projection: Extensions, unpublished ms, MIT.

Fox, Danny. 2002. Antecedent-contained deletion and the copy theory of movement. *Linguistic Inquiry* 33:63–96.

Koopman, Hilda. 2000. Prepositions, postpositions, circumpositions and particles. In *The Syntax of Specifiers and Heads*, 204–260, London: Routledge.

Legate, Julie. 2003. Some interface properties of the phase. *Linguistic Inquiry* 34:506–516.

Manzini, M. Rita. 2009. PRO, pro and NP-trace (raising) are interpretations. In Kleanthes K. Grohmann, ed., *Explorations of Phase Theory: Features and Arguments*, 131–180, Berlin, New York: Mouton de Gruyter.

Manzini, Rita and Savoia, Leonardo M. 1997. Null subjects without *pro*. *UCL Working Papers in Linguistics* 9:1–12.

McCloskey, James. 1996. Subjects and subject positions in irish. In Robert D. Borsley and Ian Roberts, eds., *The Syntax of the Celtic Languages: A Comparative Perspective*, 241–283, Cambridge: Cambridge University Press.

Moro, Andrea. 1997. *The Raising of Predicates*. Cambridge: Cambridge University Press.

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to be a specifier of any functional category in the extended projection of V.