

Two Notes on Wh-Movement in Modern Irish: Subject/Object Asymmetries and Superiority*

Hideki MAKI
(Gifu University)

Dónall P. Ó BAOILL
(Queen's University Belfast)

Keywords: Irish, movement, subject/object asymmetry, superiority, v

1. Introduction

The purpose of this paper is to present new findings in Modern Irish (Irish, hereafter) which will provide insights into the current theory of syntax. Two phenomena are discussed in this paper: (1) the subject/object asymmetry and (2) the superiority effect.

First, Irish is a VSO language, and according to Chung and McCloskey (1987), both the subject and object positions are properly (lexically) governed positions. Therefore, one may predict that extraction from the

* An earlier version of this paper was presented at the 129th Meeting of the Linguistic Society of Japan held at Toyama University on November 21, 2004. We would like to thank the audience at the meeting, as well as the following people: Ronald Craig, Jessica Dunton, Alexandra von Fragstein, Hironobu Kasai, Luisa Marti, Roger Martin, Shigeru Miyagawa, Chie Nakamura, Fumikazu Niinuma, Máire Ó Baoill, Norvin Richards, Mamoru Saito, Shigeki Taguchi, Ayumi Ueyama, María Luisa Zubizarreta, and two anonymous reviewers of this journal for their helpful comments. We are especially indebted to Mamoru Saito for his suggestions at various stages of this work. We are also grateful to the editor-in-chief Kazuhiko Yoshida for his valuable advice for revisions. All errors are our own. The research of the first author was supported in part by (1) Japan Society for the Promotion of Science Grant #15720089 to Gifu University and (2) Center for Linguistics, Nanzan University, of which he is an adjunct researcher (from June 1, 2004 to March 31, 2006).

subject results in grammaticality, just as extraction from the object does. However, this is not the case. We will discuss this issue in terms of extraction from specifiers, and argue that ϕ -agreement between the subject and the verb/INFL is a crucial factor for the subject/object asymmetry.

Second, Irish, in contrast to English, does not show the superiority effect. We will argue that this suggests that the small *v*, originally proposed in Chomsky (1995, Chapter 4), plays a crucial role in the absence of the superiority effect in Irish.

The organization of this paper is as follows. Section 2 reviews the syntactic phenomenon characteristic of Irish, namely, the COMP alternation. In Section 3 we present the two findings. Section 4 discusses the implications of the findings, and Section 5 summarizes our conclusions.

2. Background

Let us start by briefly summarizing the properties of COMP alternation in Irish.¹⁾ Irish has three types of complementizers: the [-Q] marker, the direct relative marker, and the indirect relative marker. The [-Q] marker is realized as either *go* (non-past) or *gur* (past), and this behaves in the same fashion as English [-Q] COMP *that*. The direct and indirect relative markers appear in relative clauses and wh-interrogatives, among others. The basic form of the two markers is *a*, but the direct relative marker induces Lenition and the indirect relative marker Eclipsis/Nasalization on a following element. Therefore, McCloskey (1979) proposes to use *aL* for the former, and *aN* for the latter. The direct relative marker is realized as *a* (non-past and past), and the indirect relative marker as either *a* (non-past) or *ar* (past).²⁾ In this paper, following McCloskey (1979), we use the symbols *aL* and *aN* for the direct relative marker and the indirect relative marker, respectively. The properties of the three COMPs are summarized in (1).

1) In this paper, in order to avoid unnecessary confusion, we only use data from the Ulster variety, one of the three main varieties of Irish: Ulster, Connacht, and Munster.

2) Note that the indirect relative marker in the past form, whose default form is *ar*, is realized as *a* in front of a handful of irregular verbs such as *áin/bí* 'to be.'

(1)

	types of COMPs	non-past form	past form	symbol
a.	the [-Q] marker	<i>go</i>	<i>gur</i>	<i>that</i>
b.	the direct relative marker	<i>a</i>	<i>a</i>	<i>aL</i>
c.	the indirect relative marker	<i>a</i>	<i>ar</i>	<i>aN</i>

Let us illustrate the properties of the COMPs by relevant examples.

(2) is a declarative sentence, and the embedded clause is headed by the [-Q] COMP *gur* 'that.' On the other hand, when the sentence involves relative clause formation, as in (3) and (4), the COMPs must change to the direct relative marker *aL*.

(2) Creideann Seán gur cheannaigh Máire an carr.
believe John that bought Mary the car
'John believes that Mary bought the car.'

(3) an carr a chreideann tú a cheannaigh Seán t
the car aL believe you aL bought John
'the car you believe that John bought'

(4) an carr a chreideann tú a dúirt siad a cheannaigh Seán t
the car aL believe you aL said they aL bought John
'the car you believe that they said that John bought'

(3) and (4) would be ungrammatical if the COMPs were to remain *gur* 'that.' This suggests that the null operator movement proceeds in a successive cyclic fashion by obligatorily making use of an intermediate [-Q] COMP position.

There is another way to form a relative clause. See (5).

(5) an carr a gcreideann tú gur cheannaigh Seán é
the car aN believe you that bought John it
'the car you believe that John bought'

In (5), the topmost COMP of the relative clause is an indirect relative marker *a*, the COMP of the embedded clause is a [-Q] COMP, and the

embedded clause contains a resumptive pronoun *é* 'it' instead of a gap. As (5) does not contain a direct relative marker *aL*, there is no movement involved in (5). Rather, in (5), the topmost COMP *aN* binds the resumptive pronoun. The examples in (6) and (7) suggest that *aN* must bind a resumptive pronoun, and as long as the former binds the latter, no locality restriction is imposed on them.

- (6) *an carr a gcreideann tú gur cheannaigh Seán *t*
 the car aN believe you that bought John
 'the car you believe that John bought'
- (7) a. an carr a gcreideann tú gur dhúirt siad gur cheannaigh
 the car aN believe you that said they that bought
 Seán *é*
 John it
 'the car you believe that they said that John bought it'
- b. Sin teanga a mbeadh meas agam ar dhuine
 that a language aN would be respect at me on person
 ar bith atá ábalta í a labhairt.
 any aL+is able it to speak
 '??That's a language that I would respect anyone who could speak it.'
- c. Sin bean nach bhfuil fhios agam an bpósfadh
 that a woman aN+NEG I know if would marry
 duine ar bith í.
 person any her
 '??That's a woman that I don't know if anyone would marry her.'
 ((7b) and (7c) are cited from McCloskey (1979). (7b) is slightly edited.)

In (6), there is no resumptive pronoun which *aN* could bind, and the example is ungrammatical. In (7a), (7b), and (7c), *aN* binds the resumptive pronoun *é* across two CP boundaries, *t* across a complex NP, and *í* across a wh-clause, respectively, and the examples are all grammatical.

To summarize, the direct relative marker *aL* appears when the example involves movement, and the indirect relative marker *aN* appears when

the example involves no movement.

3. Findings

Having outlined this background, we will now present the two findings on which this paper is based.

3.1 Subject/Object Asymmetries

The first finding is that Irish shows a subject/object asymmetry with respect to extraction from them. It is well known that extraction of a subject and an object is allowed in Irish, as seen from the examples in (8).

- (8) a. an duine a mheas tú a chonaic tú *t*
 the person aL thought you aL saw you
 'the person that you thought that you saw' (McCloskey (1979))
- b. an t-ainm a hinnseadh dúinn a bhí *t* ar an áit
 the name aL was-told to-us aL was on the place
 'the name that we were told was on the place' (McCloskey (2002))

Chung and McCloskey (1987) claim, under the theory with the Empty Category Principle (ECP), that the subject and the object positions are properly governed by the verb-INFL complex and (the trace of) the verb, respectively. They argue for this, based on the examples in (9). (9a) involves object extraction, and (9b) involves subject extraction.

- (9) a. ??rud nach bhfuil mé ag súil go
 a-thing that(Neg) be(Pres) I expect(Prog) that
 bhfeicfinn
 see(Condit S1)
 'something that I do not expect that I would see'
- b. ??rud nach dócha go mbeadh *t* air
 a-thing that(Neg)+Cop probable that be(Condit) on-him
 'something that probably would not be on him' (lit. 'something that it is not probable would be on him')
 (Chung and McCloskey (1987))

Both (9a) and (9b) are equally marginal in grammaticality. Note that the intermediate COMP in both examples has not undergone COMP alternation, and remains *that*. This indicates that the SPEC of the intermediate COMP was not used as an escape hatch. Therefore, provided that only X^0 categories can be proper governors (for both antecedent and lexical government), as argued in Stowell (1981), Rizzi (1986), and Lasnik and Saito (1992), the intermediate COMP cannot be an antecedent governor for the subject trace, because the COMP would not have the same index as the subject trace, and thus, the former does not bind the latter. Hence, the subject trace is not saved by antecedent-government in (9b). This leads Chung and McCloskey (1987) to propose that in (9b), the subject trace is lexically governed by the verb-INFL complex, just as the object trace in (9a) is lexically governed by (the trace of) the verb. Therefore, in Irish, the subject and the object positions are properly governed positions.

If this is true, the Condition on Extraction Domain (CED) proposed by Huang (1982), shown in (10), will predict that extraction out of a subject phrase in Irish should be allowed.

(10) *Condition on Extraction Domain (CED)*

A phrase A may be extracted out of a domain B only if B is properly governed.

However, when a phrase is extracted from a subject and an object, there is a subject/object asymmetry in Irish, as shown in the examples from (11) to (14).

- (11) a. Tharraing Seán pictiúr de Mháire.
 took John picture of Mary
 ‘John took a picture of Mary.’
 b. De cé a tharraing Seán pictiúr *t*?
 of whom aL took John picture
 ‘Who did John take a picture of *t*?’

- (12) a. Tá pictiúr de Mháire ar an bhalla.
 is picture of Mary on the wall
 ‘A picture of Mary is on the wall.’
 b. *De cé atá pictiúr *t* ar an bhalla?
 of whom aL+is picture on the wall
 ‘Of whom is a picture *t* on the wall?’
 (13) a. Creideann siad gur tharraing Seán pictiúr de Mháire.
 believe they that took John picture of Mary
 ‘They believe that John took a picture of Mary.’
 b. De cé a chreideann siad a tharraing Seán pictiúr *t*?
 of whom aL believe they aL took John picture
 ‘Of whom do they believe that John took a picture *t*?’
 (14) a. Creideann siad go bhfuil pictiúr de Mháire ar an bhalla.
 believe they that is picture of Mary on the wall
 ‘They believe that a picture of Mary is on the wall.’
 b. *De cé a chreideann siad atá pictiúr *t* ar
 of whom aL believe they aL+is picture on
 an bhalla?
 the wall
 ‘Of whom do they believe that a picture *t* is on the wall?’

In (11b), *de cé* ‘of whom’ is extracted out of the object, and the sentence is grammatical. On the other hand, in (12b), the same phrase is extracted out of the subject, and the example is ungrammatical. Likewise, in (13b), *de cé* ‘of whom’ undergoes long extraction from the embedded object, and the sentence is grammatical. However, in (14b), the same phrase undergoes long extraction from the embedded subject, and the sentence is ungrammatical.

3.2 Superiority

Second, in Irish, the superiority effect is not observed. Chomsky (1973) investigates multiple wh-constructions, such as (15), and proposes the

Superiority Condition in (16) to account for the data.

- (15) a. Who bought what?
 b. *What did who buy?
- (16) *Superiority Condition*
 No rule can involve X, Y in the structure
 ...X...[α...Z...-WYV...],...
 where the rule applies ambiguously to Z and Y and Z is superior to Y.

The notion *superior* is stated roughly in (17).

- (17) The category A is *superior* to the category B if every major category dominating A dominates B as well but not conversely.

The Superiority Condition straightforwardly explains the grammaticality of (15a) and the ungrammaticality of (15b), because in the structure prior to wh-movement, every major category dominating *who* (IP and CP) dominates *what*, but every major category dominating the latter (VP, IP, and CP) does not dominate the former.

The Superiority Condition also accounts for the contrast in the following English examples that involve adjunct wh-phrases.

- (18) a. Who came when?
 b. *When did who come?
- (19) a. Who fixed the car with what?
 b. *With what did who fix the car?

The adjunct wh-phrases *when* in (18b) and *with what* in (19b), which we assume are adjoined to VP, move across the subject wh-phrase *who*, and these examples are ungrammatical. If we say that in an adjunction structure, the higher node/segment (VP in this case) dominates the adjunct phrase in the definition (17), the contrast between the *a*-examples and the *b*-examples directly follows. (In the next section, we assume that VP is a complement of *v*, and thus, is dominated by *vP* (Chomsky (1995)), along with the assumption that adjunct wh-phrases are adjoined to VP, so that the contrast follows due to the *vP* node, if *dominate* in (17) is defined in

terms of categories, but not segments of the categories.) In the structures prior to wh-movement in (18–19), every major category dominating *who* (IP and CP) dominates the other wh-phrases (*when* and *with what*), but not conversely, because every major category dominating the latter (VP, IP, and CP) does not dominate the former. Therefore, the Superiority Condition prohibits movement of the lower wh-phrases in the *b*-examples of (18–19).

In contrast, the superiority effect does not show up in Irish. Observe the examples from (20) to (22).

- (20) a. Cé a cheannaigh cad é?
 who aL bought what
 ‘Who bought what?’
 b. Cad é a cheannaigh cé t?
 what aL bought who
 ‘What did who buy t?’
- (21) a. Cé a tháinig cá huair?
 who aL came what time
 ‘Who came when?’
 b. Cá huair a tháinig cé t?
 what time aL came who
 ‘When did who come?’
- (22) a. Cé a chóirigh an carr le cad é?
 who aL fixed the car with what
 ‘Who fixed the car with what?’
 b. Le cad é a chóirigh cé an carr t?
 with what aL fixed who the car
 ‘With what did who fix the car t?’

The object wh-phrase *cad é* ‘what’ in (20b), the adjunct wh-phrases *cá huair* ‘when’ in (21b), and *le cad é* ‘with what’ in (22b) move across the subject wh-phrase *cé* ‘who,’ and these examples are all grammatical. Note that the COMP in these examples is the direct relative marker *aL*, which

Two notes are in order, however. First, as Müller (1995) reports, when the embedded clause is tensed, movement of a *wh*-phrase in the embedded clause across another *wh*-phrase in the matrix clause results in marginality of the sentence, as shown in (iii).

4. Implications

The two findings presented above have interesting implications, which we discuss in this section.

4.1 Extraction from Specifiers

First, as pointed out in Section 3.1, Irish shows the subject/object asymmetry with respect to extractability from subject and object, as demonstrated by the examples in (13b) and (14b), repeated here as (29a) and (29b).

- (29) a. De cé a chreideann siad a tharraing Seán pictiúr *t*?
 of whom aL believe they aL took John picture
 ‘Of whom do they believe that John took a picture *t*?’
 b. *De cé a chreideann siad atá pictiúr *t* ar an bhalla?
 of whom aL believe they aL+is picture on the wall
 ‘Of whom do they believe that a picture *t* is on the wall?’

If Chung and McCloskey’s (1987) claim is correct, that the subject and the object positions are properly (lexically) governed positions, the CED would predict that both (29a) and (29b) should be grammatical.

In order to uncover the cause of the ungrammaticality of examples such as (29b), let us consider the above issue in terms of extraction from specifiers, because the subject position in Irish is also in the specifier of a verb. (See McCloskey (1991), among others.) Let us briefly look at rel-

- (iii) ??Wen_i hat wer geglaubt [CP *t*_i daß der Fritz *t*_i mag]?
 whom has who believed that ART Fritz likes
 Lit. ‘Who did who believe that Fritz likes *t*?’

Although the grammatical status of (iii) is controversial, it is generally agreed that (iii) is worse than (ii). In this respect, German is different from Irish, since in Irish the superiority effect does not correlate with the presence of tense.

Second, even if we ignore cases like (iii) in German, the analysis to be proposed to account for the absence of the superiority effect in Irish does not directly apply to German cases. This is because the subject positions of the two languages are not identical: in German, the subject position is (as high as) IP SPEC, while in Irish, it is (as low as) vP SPEC. For space reasons, we do not explore a unified account of the absence of the superiority effect in the two languages, and leave the issue for future research.

evant cases of extraction from specifiers.

First, as Chomsky (1973) points out, extraction from subjects in tensed clauses is prohibited, as shown in (30).

- (30) *Who was a picture of *t* on the wall?

We may say, following Chomsky (1986), that extraction from IP SPEC whose head is tensed is illicit.

Second, extraction from objects is fine, as shown in (31).

- (31) Who did John see a picture of *t*?

If we assume, following Johnson (1991) and Koizumi (1995), among others, that object is also moved into a specifier position, say, vP SPEC (Chomsky (1995, Chapter 4)), we may say that extraction from vP SPEC is licit.

Third, although the exact grammatical status of the example in (32) is controversial, extraction from the subject of an ECM complement is better than extraction from the subject of a tensed clause.

- (32) Who do you expect stories about *t* to terrify John?

Chomsky (1973) states that (32) is not grammatical, but Chomsky (1986, p. 86) states that “the subject of an embedded non-CP complement behaves in the manner of an object of its verbal governor.” In this paper, we assume that (32) is grammatical, and its slight deviancy comes from some unknown factors.

Fourth, extraction from a phrase moved into CP SPEC is also allowed, as pointed out by Lasnik and Saito (1992). Observe the contrast between (33a) and (33b).

- (33) a. ??Who do you think that [pictures of *t*] are on sale?
 b. ??Who do you wonder [which picture of *t*] *t* is on sale?

(33a) involves extraction of a wh-phrase from IP SPEC of a tensed clause, and (33b), from CP SPEC. (33b) is better than (33a). Note that Lasnik

and Saito (1992) argue that an A'-binder ([which picture of *t*] in (33b)) does not constitute a barrier for movement from within it, and the fact that (33b) is marginal is due to Kuno's (1973) internal constituent effect. Therefore, although it is marked ??, the grammatical status of (33b) is just like that of (32), in the sense that they do not violate constraints on movement, but their slight marginality stems from some other factors.

Fifth, Lasnik and Saito (1992) also point out that Japanese does not show the subject/object asymmetry with respect to extractability from subject and object. Consider the examples in (34) cited from Lasnik and Saito (1992, Chapter 2).

- (34) a. ??Dono hon-o1 Mary-ga [NP John-ga *t*1 katta koto]-o
 which book-Acc -Nom -Nom bought fact-Acc
 mondai-ni shiteru no?
 problem-to making Q
 Lit. 'Which book is it that Mary is calling the fact that John
 bought it into question?'
 b. ??Dono hon-o1 Mary-ga [NP John-ga *t*1 katta koto]-ga
 which book-Acc -Nom -Nom bought fact-Nom
 mondai-da to omotteru no?
 problem-be COMP think Q
 Lit. 'Which book is it that Mary thinks that the fact that John
 bought it is a problem?'

In both (34a) and (34b), the NP *dono hon-o* 'which book-Acc' moves across a complex NP, and thus, violates Chomsky's (1973) Subjacency Condition. However, (34b) is as good as (34a). Therefore, in Japanese, extraction from subjects is as acceptable as extraction from objects.

Note that the exact position of subject in Japanese is controversial. In this paper, we simply assume without any discussion that subjects in Japanese are in IP SPEC, because the choice between IP SPEC and vP SPEC does not affect the argument to be presented below.

Sixth, and finally, as we saw above, in Irish, extraction from subjects

is disallowed. Slightly modifying McCloskey (1991), and following Chomsky's (1995, Chapter 4) idea about clausal structure, let us assume that the subject position of a tensed clause in Irish is the specifier of the small *v*. Then, we may say that extraction from vP SPEC is disallowed in Irish.

Let us summarize the above facts in Chart (35).

(35) Summary of Extraction Facts

Language	Extraction Site	Grammaticality
English	IP SPEC	*
English	vP SPEC	✓
English	IP SPEC (ECM)	✓
English	CP SPEC	✓
Japanese	IP SPEC	✓
Irish	vP SPEC	*

It is hard to draw a generalization out of Chart (35), because extraction from the same site results in grammaticality in one case, but not in another.

However, if we add another factor to Chart (35), that is, agreement between the subject and the verb/INFL in ϕ -features (person, number, and gender, among others), as in Chart (36), we see a clear correlation between the grammaticality of the sentence and the existence of agreement. Note that in Irish, verb/INFL agrees with subject, but not object, as shown in (37).

(36) Summary of Extraction Facts (2)

Language	Extraction Site	Grammaticality	Agreement (P, N, G)
English	IP SPEC	*	✓
English	vP SPEC	✓	*
English	IP SPEC (ECM)	✓	*
English	CP SPEC	✓	*
Japanese	IP SPEC	✓	*
Irish	vP SPEC	*	✓

(37) cuir (to put): Conditional Forms (from McCloskey and Hale (1984))

S1	chuirfinn	P1	chuirfimis
S2	chuirfeá	P2	chuirfeadh sibh
			you (PL)
MS3	chuirfeadh sé	P3	chuirfeadh siad
	he		they
FS3	chuirfeadh sí		
	she		

(36) shows that extraction is prohibited from the phrase in the specifier which is in agreement with the verb/INFL in ϕ -features. Whether the specifier is in the properly (lexically) governed position is not relevant for determining extractability of the element in it.

Therefore, the above argument indicates that agreement is a determining factor for extraction from specifiers. The question then arises as to why this is so. Although we cannot give a precise analysis for this, we can suggest one possibility.

Chomsky (1986), following a suggestion by Kyle Johnson, motivates a condition on adjunction, especially, a condition on adjunction to arguments, in terms of θ -theory. In an adjunction structure such as (38), where $\gamma = \beta$, and β is an argument,

(38) [_γ α [_β [...]]]

β could be invisible to θ -marking because it is not a full category. Hence, a θ -role is not properly assigned to β , and the example with structure (38) is ruled out. We would like to propose at this point that we apply this conception to the present case. Let us assume the Minimal Link Condition (MLC) proposed by Chomsky and Lasnik (1993), that each step of movement must be minimal. Then, extraction of a phrase from a specifier necessarily involves adjunction to the specifier, producing a structure such as (38). If the specifier is (to be) in ϕ -agreement with the head, then the required agreement will be blocked, just as in the case of θ -role assign-

ment. Therefore, examples involving extraction from agreeing specifiers are ruled out. To the extent that this analysis is correct, it will in turn give support to the idea that the theory of grammar should contain the MLC, and Takahashi's (1994) proposal that conditions on movement would all be reduced to a condition on adjunction operation.^{4,5)}

4.2 Small v

Second, Finding 2 and other relevant data constitute evidence for the

4) The first reviewer points out that the agreement-based account of the subject/object asymmetry in wh-extraction in Irish presented in this paper cannot unify the subject condition effect and the adjunction condition effect of the CED. This is because adjuncts, in contrast to subjects in particular languages, would not be in agreement with the verb/INFL in ϕ -features, so that adjunction to adjuncts would not cause a problem inherent in adjunction to agreeing subjects. Therefore, under the present account, the adjunct condition effect (the ban against adjunction to adjuncts) and the subject condition effect (the ban against adjunction to agreeing subjects) cannot be derived from a single principle, and it is left unexplained what the former is deduced from. On this matter, see Saito and Fukui (1998), who attempt to simultaneously derive the constraints on adjunction sites (adjuncts and (agreeing) subjects) from their own theory of adjunction.

5) The second reviewer points out that the proposed analysis poses a problem for Chomsky's (2001) probe-goal theory of agreement, under which ϕ -agreement (agreement in person, number, and gender, among others) is prerequisite for Case-agreement, which means that there is no "pure" Case-agreement. Given the probe-goal theory of agreement, the proposed analysis would incorrectly predict that extraction out of a phrase in the object position would also result in ungrammaticality, contrary to fact, because an Accusative object is also supposed to be in ϕ -agreement with the head (v) under the theory. We would like to address this issue by proposing that the ϕ -features of an Accusative object, but not of a Nominative subject, would become invisible or inactive after Accusative Case is checked. To see what this means, let us consider the following English examples.

- (i) a. He sees them.
- b. *He see them.

In English, as (ia) shows, Case is morphologically realized on NPs, but it is not on the corresponding heads. On the other hand, ϕ -features are morphologically realized on NPs, and part of them may be realized on the head that is to be in agreement with the subject NP, but not with the object NP, as shown in (ia) and (ib), respectively. Therefore, there is an asymmetry between Case realization and ϕ -feature realization on heads. This seems to indicate that the ϕ -features of

existence of the small *v*, originally proposed in Chomsky (1995, Chapter 4), which plays a crucial role in explaining the presence and absence of the superiority effect in English and Irish. We propose to slightly revise Bošković's (1997) AGRo-based analysis of superiority phenomena in English in the framework of Chomsky's (2000, 2001) phase theory, and show that the proposed analysis will properly account for the presence and absence of the superiority effect in the two languages.

Let us briefly summarize Bošković's (1997) analysis below. In English, there are certain grammatical examples that look like apparent Superiority Condition violations, such as (39b).

- (39) a. Where did he buy what?
b. What did he buy where?

In the standard assumption, the adjunct wh-phrase *where* is generated in a position higher than the object wh-phrase *what*. Then, the movement involved in (39b) would violate the Superiority Condition. To account for the absence of the superiority effect in (39b), Bošković (1997) proposes the derivation in which *what* first moves to AGRoP SPEC, which is higher than the base-generated position of *where*, and then, moves to CP SPEC avoiding a violation of the Superiority Condition. The relevant parts of the derivation are shown in (40).

- (40) a. [CP C [IP he [AGRoP [VP [VP buy what] where]]]]
b. [CP C [IP he [AGRoP what_i [VP [VP buy *t*_i] where]]]]
c. [CP what_i C [IP he [AGRoP *t*'_i [VP [VP buy *t*_i] where]]]]

Note that the Superiority Condition is irrelevant in the step in (40b), as the movement rule that moves *what* into AGRoP SPEC does not apply ambiguously to *where* and *what*, due to the fact that *where* does not

INFL remain visible or active, but those of the small *v* do not, after these heads check off the relevant Case features. If this conception is correct, given the MLC, extraction out of a subject phrase involves adjunction to the phrase which is in ϕ -agreement with the head, but extraction out of an object phrase does not. If this is true, the potential problem will be circumvented.

undergo Case checking. Thus, Bošković's (1997) AGRo-based analysis straightforwardly explains the absence of the superiority effects in (39b). On the other hand, (39a) has the base structure in (40a), in which *where* c-commands *what*. Since the former moves to CP SPEC, the movement does not violate the Superiority Condition, and (39a) is correctly predicted to be grammatical.

Let us see if Bošković's (1997) AGRo-based analysis can explain the absence of superiority effects in Irish. As it stands, it cannot, because of examples containing an adjunct wh-phrase, such as (21b). (21a–b) are reproduced here as (41a–b).

- (41) a. Cé a tháinig cá huair?
who aL came what time
'Who came when?'
b. Cá huair a tháinig cé *t*?
what time aL came who
'When did who come *t*?'

(41b) is perfectly grammatical in Irish. Note that *cá huair* 'when' is an adverb, and it does not have Accusative Case. Therefore, Case checking is irrelevant, and it will directly move to CP SPEC across the subject wh-phrase *cé* 'who.' Then, (41b) would be incorrectly ruled out as a Superiority Condition violation. Therefore, Bošković's (1997) analysis based on Case checking cannot account for the absence of the superiority effect in (41b).

Note, however, that (41b) would be incorrectly ruled out under any analysis, unless *cá huair* 'when' involves a type of movement such as Case-driven movement before it undergoes wh-movement. Therefore, we propose to revise Bošković's (1997) analysis based on Case checking in the framework of Chomsky's (2000, 2001) phase theory. Specifically, we propose to replace the head AGRo in Bošković's (1997) analysis with the small *v* originally proposed in Chomsky (1995, Chapter 4). Chomsky (2000, 2001) claims that vP is a phase, and the head *v* optionally has an

EPP feature, which attracts operators such as *wh*-phrases before they reach the final destinations. Therefore, the small *v* may attract a *wh*-phrase, when it has an EPP feature, irrespective of whether the *wh*-phrase has Accusative Case. At the same time, the small *v* may attract a *wh*-phrase, if it has Accusative Case, in order to check off the Case feature (Chomsky (1995)).

With this revision to Bošković's (1997) analysis, let us reconsider (41b). The base structure of (41b) is (42). (In the following discussion, for expository purposes, we represent the relevant structures with English glosses rather than their corresponding Irish words.)

(42) [CP C [IP I [vP *who* v [VP [VP *came*] *when*]]]]

In (42), *who* is merged to vP SPEC.⁶⁾ Then, *when* undergoes movement to the SPEC of *v* on the way to CP SPEC, if the small *v* has an EPP feature, as shown in (43).

(43) [CP C [IP I [vP *when* [vP *who* v [VP [VP *came*] *t*]]]]]

In (43), *when* is structurally higher than *who*, and thus, it can move to CP SPEC without causing a superiority violation. Therefore, (41b) is correctly predicted to be grammatical under the proposed analysis.

Let us then consider how (41a) is derived. It is derived if the small *v* does not have an EPP feature. In the base structure (42), *who* is structurally higher than *when*. Therefore, *who* can move to the matrix CP SPEC without causing a superiority violation, and (41a) is correctly derived.

Thus, a revision to Bošković's (1997) analysis has made it possible to

6) One question arises as to whether merger of *who* into the SPEC of *v* may delete the EPP feature of *v*. If this took place, *v* could never attract *when*, and (41b) would never be generated. Note here that the EPP feature of *v* in the present context has been assumed to account for the successive cyclic nature of *wh*-movement, and for this reason, the EPP feature is assumed to be in agreement with the *wh*-feature of the phrase in its c-command domain that is supposed to undergo movement. Therefore, by hypothesis, the EPP feature of *v* is not checked off by merger of a *wh*-element.

account for the absence of superiority phenomena in Irish in a straightforward way. The proposed analysis also correctly accounts for the grammaticality of (22a) and (22b), reproduced here as (44a) and (44b).

- (44) a. Cé a chóirigh an carr le cad é?
 who aL fixed the car with what
 'Who fixed the car with what?'
 b. Le cad é a chóirigh cé an carr *t*?
 with what aL fixed who the car
 'With what did who fix the car *t*?'

The base structure of (44a) and (44b) is (45).

(45) [CP C [IP I [vP *who* v [VP [VP fixed the car] with what]]]

If the small *v* has an EPP feature, it attracts *with what* to its higher SPEC. Then, this *wh*-phrase moves to CP SPEC, deriving (44b). On the other hand, if the small *v* does not have an EPP feature, *who* moves to CP SPEC, deriving (44a), as it is structurally higher than *with what*.

The same analysis is also given to the absence of the superiority effect in (20b) in Irish. (20a–b) are reproduced here as (46a–b).

- (46) a. Cé a cheannaigh cad é?
 who aL bought what
 'Who bought what?'
 b. Cad é a cheannaigh cé *t*?
 what aL bought who
 'What did who buy *t*?'

The base structure of (46a) and (46b) is (47).

(47) [CP C [IP I [vP *who* v [VP bought what]]]]

If the small *v* has an EPP feature, it attracts *what* to its higher SPEC. Then, this *wh*-phrase moves to CP SPEC, deriving (46b). On the other hand, if the small *v* does not have an EPP feature, *who* moves to CP

SPEC, deriving (46a).⁷

Let us turn to the English counterparts. Let us first consider the examples in (39) again, reproduced here as (48).

- (48) a. Where did he buy what?
b. What did he buy where?

Here, Bošković's (1997) AGRo-based analysis can be straightforwardly reanalyzed as the small *v* based analysis. Under the small *v* based analysis, (48b) has the derivation in (49).

- (49) a. [CP C [IP he [vP [VP [VP buy what] where]]]]
b. [CP C [IP he [vP what_i [VP [VP buy *t*_i] where]]]]
c. [CP what_i C [IP he [vP *t*_i [VP [VP buy *t*_i] where]]]]

In this derivation, *what* first moves to vP SPEC for Accusative Case checking, which is higher than the base-generated position of *where*, and then, moves to CP SPEC without violating the Superiority Condition. Therefore, (48b) is correctly ruled in. On the other hand, (48a) has the base structure in (49a), in which *where* c-commands *what*. The former moves to CP SPEC (by way of vP SPEC), without violating the Superiority Condition. Therefore, (48a) is correctly predicted to be grammatical.

Let us then consider the examples in (18), repeated here as (50).

- (50) a. Who came when?
b. *When did who come?

(50a) has a structure such as (51) at some point in the derivation, if the small *v* does not have an EPP feature.

- (51) [CP C [IP I [vP who *v* [VP [VP come] when]]]]

7) Alternatively, a Case based analysis may account for the data. (46b) is derived, if *what* first moves to the higher SPEC of *v* for Accusative Case checking, and then, moves to CP SPEC. On the other hand, (46a) is derived, if Accusative Case checking is not done in overt syntax.

Then, as English has a subject in IP SPEC, *who* moves to IP SPEC. Since *who* is closer to the [+Q] COMP than *when*, the former moves to CP SPEC, and (50a) is derived.

Let us next consider why (50b) is ill-formed. (50b) will have a structure such as (52) at some point in the derivation, if the small *v* has an EPP feature.

- (52) [CP C [IP I [vP when [vP who *v* [VP [VP come] *t*(when)]]]]]]

Then, in order to circumvent a violation of the principle of Strict Cyclicity, *who* moves to IP SPEC, before *when* moves to CP SPEC, as shown in (53).

- (53) [CP C [IP who I [vP when [vP *t*(who) *v* [VP [VP come] *t*(when)]]]]]]

In (53), as *who* is closer to the [+Q] COMP than *when*, the latter cannot move to CP SPEC across the former. Therefore, (50b) is never derived. The same analysis applies to the examples in (19), which we omit for space limitations.

Let us then consider more complex cases in Irish. As we saw in Section 3.2, Irish allows movement of a wh-phrase across another wh-phrase which is base-generated in a separate clause. Consider the examples in (27), repeated here as (54).

- (54) a. Cá huair a chreideann Seán [a tháinig cé *t*]?
what time aL believe John aL came who
'When does John believe [that who came *t*]?'
b. Cá huair a chreideann cé [a cheannaigh Seán an carr *t*]?
what time aL believe who aL bought John the car
'When does who believe [that John bought the car *t*]?'

Both (54a) and (54b) are acceptable in Irish. The relevant structure of (54a) is just like that of (41b). Therefore, the grammaticality of (54a) is correctly predicted by the proposed analysis. On the other hand, (54b) has a different structure. In (54b), *cé* 'who' is base-generated in the matrix

clause, and *cá luair* 'when' in the embedded clause. The latter first moves to the embedded CP SPEC. Therefore, at some point in the derivation, (54b) will have the structure in (55).

(55) [CP C [IP I [vP who v [VP believe [CP when [...]]]]]]

In (55), the matrix small *v* optionally has an EPP feature. Suppose it does. Then, it attracts *when* to its higher SPEC, as shown in (56).

(56) [CP C [IP I [vP when [vP who v [VP believe [CP *t*(when) [...]]]]]]

Note here that the movement involved does not violate the Superiority Condition, as the operation Attract does not apply to *who* and *when* ambiguously, that is, the small *v* only targets *when*. Then, *when* moves to the matrix CP SPEC, and (54b) is correctly derived. The same analysis applies to the other examples ((26b) and (28b)) as well.

Let us then examine the English counterparts in (24), repeated here as (57).

- (57) a. *When does John believe [that who came *t*]?
b. *When does who believe [that Mary came *t*]?

(57a) is ruled out, just as (18b) is. Let us then consider why (57b) is ill-formed. In (57b) *when* originates from the embedded clause, and first moves to the embedded CP SPEC. Therefore, at some point in the derivation, (57b) will have the structure in (58).

(58) [CP C [IP I [vP who v [VP believe [CP when [...]]]]]]

In (58), the matrix small *v* optionally has an EPP feature. If we assume it does, then it attracts *when* to its higher SPEC, as shown in (59).

(59) [CP C [IP I [vP when [vP who v [VP believe [CP *t*(when) [...]]]]]]

Then, as English has a subject in IP SPEC, *who* moves to IP SPEC, as shown in (60).

(60) [CP C [IP who I [vP when [vP *t*(who) v [VP believe [CP *t*(when) [...]]]]]]

In (60), as *who* is closer to the [+Q] COMP than *when*, the latter cannot move to CP SPEC across the former. Therefore, (57b) is never derived. The same analysis applies to the other examples ((23b) and (25b)) as well.⁸⁾

The proposed analysis based on a revision of Bošković's (1997) AGRo-based analysis has thus successfully accounted for the absence/

8) The first reviewer pointed out that the analysis presented in this paper would predict that the superiority effect emerges in Irish only in the configuration in (i), where the matrix verb takes both a goal object and a CP complement.

(i) [CP C [IP I [vP NP(subject) v [VP tell WH₁(object) [CP [IP...WH₂...]]]]]

This is because in (i), when WH₂ is at the embedded CP SPEC at some point in the derivation, as in (ii), *v* in the matrix clause would attract the closer wh-phrase WH₁ rather than WH₂.

(ii) [CP C [IP I [vP NP(subject) v [VP tell WH₁(object) [CP WH₂ [IP...*t*(WH₂)...]]]]]

Therefore, if WH₂ moved to the matrix CP SPEC across WH₁, the example would be predicted to be ungrammatical. However, the prediction is not borne out, as the following examples show.

(iii) D'inis siad do Mháire gur cheannaigh Seán carr.
told they to Mary that bought John car
'They told Mary that John bought a car.'

(iv) Cad é a d'inis siad do cé [a cheannaigh Seán *t*]?
what aL told they to who aL bought John
'What did they tell who that John bought?'

(iv) is derived from (iii) by substituting the goal object in the matrix clause and the theme object in the embedded clause for wh-phrases, and moving the lower wh-phrase to the matrix CP SPEC. Contrary to the prediction, (iv) is grammatical.

At the present stage of understanding, we cannot provide an adequate explanation for this fact. Rather, we consider what this fact suggests. In Irish, goal objects are accompanied by prepositions. Therefore, (iii) would be ungrammatical, if *do* 'to' of *do Mháire* 'to Máire' is absent. In (iv), if *do* 'to' projects up to PP, due to this PP, WH₁ does not c-command WH₂, and thus, either wh-phrase may move to the matrix CP SPEC. If this is correct, the fact that (iv) is grammatical in Irish is expected.

presence of the superiority effect in English and Irish. Before closing this section, let us point out one consequence of the analysis. The consequence is that the tucking-in manner of movement proposed in Richards (2001) does not apply to *wh*-movement in Irish. Richards (2001) investigated *wh*-constructions in the world, and found that multiple *wh*-fronting languages such as Bulgarian exhibit what he calls the tucking-in manner of movement. The tucking-in manner of movement is illustrated in (61).

However, a question immediately arises, when we take into account the English counterpart of (iv) shown in (v).

(v) *What did they say to whom that John bought *t*?

If *to of to whom* projects up to PP in (v), (v) should be predicted to be grammatical, contrary to fact.

Based on the data to be provided below, we suggest that the nature of PPs containing a goal object in Irish is different from that in English, and this difference is correlated with the difference in the superiority effect. In Irish, goal PPs containing a *wh*-phrase cannot undergo movement to CP SPEC, but must be base-generated in CP SPEC, as the following example shows.

(vi) Cé dó ar inis siad [gur cheannaigh Seán carr]?
 who to him aN told they that bought John car
 'Who did they tell that John bought a car?'

In (vi), the matrix COMP is *aN*, and if it changed to *aL*, the example becomes ungrammatical. In this respect, goal PPs in Irish are different from those in English, in which goal PPs containing a *wh*-phrase can move to CP SPEC, as shown in (vii).

(vii) To whom did they say *t* [that John bought a car]?

This contrast seems to suggest that in Irish, a *wh*-phrase in a goal PP is invisible from the [+Q] COMP, so that it cannot move to CP SPEC, and thus, the PP as a whole must be base-generated in CP SPEC, while in English, a *wh*-phrase in a goal PP is visible from the [+Q] COMP, due to the fact that the PP is transparent, and thus, the *wh*-phrase with the preposition may move to CP SPEC. If this is true, we may say that in Irish, a *wh*-phrase in a goal PP is either invisible from the [+Q] COMP, or does not c-command any element outside the PP, due to the PP node, while in English, a *wh*-phrase in a goal PP is either visible from the [+Q] COMP, or may c-command elements outside the PP, and this difference in the nature of goal PPs in the two languages reflects the difference in the superiority effect between the two languages.

- (61) a. [...*wh*₁...*wh*₂...]
 b. [CP *wh*₁ [...*t*₁...*wh*₂...]]
 c. [CP *wh*₁ *wh*₂ [...*t*₁...*t*₂...]]

In (61a), there are two *wh*-phrases in a clause. In (61b), the higher *wh*-phrase moves to CP SPEC, and in (61c), the lower *wh*-phrase moves into the lower SPEC position of the COMP, but not the higher SPEC of the COMP. Richards (2001) further found that multiple specifiers created in the tucking-in manner are not equidistant from higher attractors. To be more precise, the element in the higher SPEC position, but not the one in the lower SPEC position, must move to the attractor in the next movement operation. Therefore, the movement in (62b) is allowed, but the movement in (62c) is not.

- (62) a. [CP *wh*₁ *wh*₂ [...*t*₁...*t*₂...]]
 b. [CP *wh*₁... [CP *t*₁ *wh*₂ [...*t*₁...*t*₂...]]]
 c. *[CP *wh*₂... [CP *wh*₁ *t*₂ [...*t*₁...*t*₂...]]]

With this in mind, let us reconsider (41b), reproduced here as (63).

- (63) Cá huair a tháinig cé *t*?
 what time aL came who
 'When did who come *t*?'

If Irish employed a tucking-in manner of movement, (63) would have the structure in (64), when *when* moves to vP SPEC.

- (64) [CP C [IP I [vP who [vP when v [VP [VP came] *t*]]]]]

In (64), *when* moves into the lower SPEC. Given Richards' finding that an element in the higher SPEC is closer to the higher attractor than an element in the lower SPEC, in (64), *who*, but not *when*, moves to the matrix CP SPEC, and (63) would never be generated. This suggests that in Irish, the tucking-in type movement is not allowed.

5. Conclusion

In this paper, based on the two findings in Irish, we suggested the following. First, extraction from a specifier is prohibited if the specifier is in ϕ -agreement with the predicate. Otherwise, extraction from specifiers is allowed. We provided a possible account for this fact by claiming that adjunction of a phrase to the specifier which is (or to be) in ϕ -agreement with the head will block the required agreement. Second, the presence and absence of the superiority effect in Irish and English have been shown to be properly accounted for by an analysis that slightly revises Bošković's (1997) AGRO-based analysis in such a way to replace AGRO with the small *v*, originally proposed in Chomsky (1995), in the framework of Chomsky's (2000, 2001) phase theory. This in turn provides support for the existence of the small *v* in grammar and for the phase theory in which it plays an important role.

References

- Bošković, Željko (1997) On certain violations of the Superiority Condition, AgrO, and economy of derivation. *Journal of Linguistics* 33: 227–254.
- Chomsky, Noam (1973) Conditions on transformations. In: Stephen Anderson and Paul Kiparsky (eds.) *A festschrift for Morris Halle*, 287–307. New York: Holt, Rinehart and Winston.
- (1986) *Barriers*. Cambridge, Mass.: MIT Press.
- (1995) *The Minimalist Program*. Cambridge, Mass.: MIT Press.
- (2000) Minimalist inquiries: the framework. In: Roger Martin, Juan Uriagereka, and David Michaels (eds.) *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89–151. Cambridge, Mass.: MIT Press.
- (2001) Derivation by phase. In: Michael Kenstowicz (ed.) *Ken Hale: A life in language*, 1–50. Cambridge, Mass.: MIT Press.
- and Howard Lasnik (1993) Principles and parameters theory. In: Joachim Jacobs, Armin van Stechow, Wolfgang Sternefeld, and Theo

- Venneman (eds.) *Syntax: An international handbook of contemporary research*, 506–569. Berlin: Walter de Gruyter.
- Chung, Sandra and James McCloskey (1987) Government, barriers, and small clauses in modern Irish. *Linguistic Inquiry* 18: 173–237.
- Haider, Hubert (2000) Towards a superior account of superiority. In: Uli Lutz, Gereon Müller, and Armin von Stechow (eds.) *WH-scope marking*, 231–248. Amsterdam: John Benjamins.
- Huang, C.-T. James (1982) *Logical relations in Chinese and the theory of grammar*. Doctoral dissertation, MIT.
- Johnson, Kyle (1991) Object positions. *Natural Language and Linguistic Theory* 9: 577–636.
- Koizumi, Masatoshi (1995) *Phrase structure in minimalist syntax*. Doctoral dissertation, MIT.
- Kuno, Susumu (1973) Constraints on internal clauses and sentential subjects. *Linguistic Inquiry* 4, 363–385.
- Lasnik, Howard and Mamoru Saito (1992) *Move- α* . Cambridge, Mass.: MIT Press.
- McCloskey, James (1979) *Transformational syntax and model theoretic semantics*. Dordrecht: Reidel.
- (1991) Clause structure, ellipsis and proper government. *Lingua* 85: 259–302.
- (2002) Resumption, successive cyclicity, and the locality of operations. In: Samuel David Epstein and T. Daniel Seely (eds.) *Derivation and explanation in the Minimalist Program*, 184–226. Malden, MA.: Blackwell.
- and Kenneth Hale (1984) On the syntax of person-number inflection in modern Irish. *Natural Language and Linguistic Theory* 1: 487–553.
- Müller, Gereon (1995) *A-bar syntax*. Berlin: Mouton de Gruyter.
- Richards, Norvin (2001) *Movement in language: interactions and architectures*. Oxford: Oxford University Press.
- Rizzi, Luigi (1986) Null objects in Italian and the theory of pro. *Linguistic Inquiry* 17: 501–557.
- Saito, Mamoru and Naoki Fukui (1998) *Order in phrase structure and movement*.

Linguistic Inquiry 29: 439–474.

Stowell, Tim (1981) *Origins of phrase structure*. Doctoral dissertation, MIT.

Takahashi, Daiko (1994) *Minimality of movement*. Doctoral dissertation, University of Connecticut.

現代アイルランド語における WH 移動についての二つの注目点

牧 秀 樹

(岐阜大学)

ドナル P. オボイル

(クイーンズ大学ベルファースト)

本論文では、現代アイルランド語における新たな発見を2つ報告し、その発見が、統語理論に対して持つ意味を論ずる。2つの発見は、次のようである。(1) 主語・目的語からの疑問詞の抜き出しに関して非対称性があり、主語からの抜き出しは不可能であること。(2) 主語の疑問詞を超えて、その下位に生成された疑問詞が移動することができ、優位性効果が生じないこと。これらの発見は、統語理論に対して以下のことを示唆すると論ずる。(1) 指定部からの抜き出しは、その指定部にある句と述語が、 ϕ -整合性において一致する時にのみ不可能になること。(2) AGRoではなく、 v が優位性の有無に関して重要な役割を果たしていること。

(受理日 2005年1月17日 最終原稿受理日 2005年7月14日)