

## THE MODERN IRISH (*aN*, *aL*, *t*) CHAIN

HIDEKI MAKI and DÓNALL P. Ó BAOILL

*Gifu University and Queen's University Belfast\**

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### 1. Introduction

In his series of works on movement phenomena in Modern Irish (Irish, hereafter), James McCloskey has shown the nature of movement in this language, which in turn suggests the nature of movement in human languages. In Irish, there are three COMPs: *go/gur* ‘that(non-past)/that(past),’ *aL* (direct relative marker), and *aN* (indirect relative marker). McCloskey (2002) shows that there are five patterns allowed in COMP alternation, shown in (1)–(5), where the meaning of (1)–(4) is the same.<sup>1</sup> In this paper, we use *go* as the default symbol for *go/gur* ‘that(non-past)/that(past).’

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<sup>1</sup> 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.

- (1) (aL, aL, *t*)  
 an carr a chreideann tú a cheannaigh Seán *t*  
 the car aL believe you aL bought John  
 ‘the car you believe that John bought’
- (2) (aN, go, it)  
 an carr a gcreideann tú gur cheannaigh Seán é  
 the car aN believe you that bought John it
- (3) (aN, aN, it)  
 an carr a gcreideann tú ar cheannaigh Seán é  
 the car aN believe you aN bought John it
- (4) (aL, aN, it)  
 an carr a chreideann tú ar cheannaigh Seán é  
 the car aL believe you aN bought John it
- (5) (aN, aL, *t*)<sup>2</sup>  
 an carr a raibh súil agam a cheannófá *t*  
 the car aN was hope at-me aL buy (COND) (S2)<sup>3</sup>  
 ‘the car I hoped you would buy’

McCloskey (2002) provides an analysis of the five patterns in (1)–(5) by proposing (6), along with certain necessary assumptions.

- (6) a. C whose specifier is filled by Move is realized as *aL*.  
 b. C whose specifier is filled by Merge is realized as *aN*.  
 c. C whose specifier is not filled is realized as *go/gur*.

He assumes that in the SPEC of *aL* is a null operator/null pronoun (henceforth, operator) as a result of movement, in the SPEC of *aN* is a base-generated operator, and in the SPEC of *go/gur*, there is no operator.

There are two important claims made by McCloskey (2002). First, a base-generated operator in the SPEC of *aN*, if it is not the head of the chain, functions as if it were an empty category, so that it must be locally licensed, or “antecedent-governed,” by the next higher operator. Second, an operator in the SPEC of *aL*, if it is not the head of the

<sup>2</sup> Note that the pattern in (5) (aN, aL, *t*) is allowed only in certain constructions, such as those with psych-nouns (*súil* ‘hope’ in (5), for example, in combination with prepositional verbal phrases). Therefore, if the matrix predicate is replaced by (*a*) *gcreideann* “(aN) believe,” (5) becomes ungrammatical. However, for reasons still unknown, (5) with (*a*) *gcreideann* “(aN) believe” becomes grammatical, if it is embedded in a full sentence. See Section 4.

<sup>3</sup> (S2) means “singular 2nd person,” and (COND) “Conditional.”

chain, may be licensed by binding. Therefore, in chain (5) (*aN*, *aL*, *t*), an operator in the SPEC of *aL* can be licensed by binding with *aN* (or a base-generated operator in the SPEC of *aN*), and these two constitute a chain (*aN*, Op). There is also a chain created by movement of the operator (Op, *t*). Therefore, there are two chains (*aN*, Op) and (Op, *t*) in (5), and these two constitute a “composite chain.” Note that, as an operator in the SPEC of *aL* in (5) is licensed by binding with *aN*, there may be an island between the two.

In this paper, we focus on the pattern in (5) (*aN*, *aL*, *t*). We first examine McCloskey’s (2002) data carefully, and point out that there is no island between *aN* and *aL* in examples such as (5). Therefore, the question arises as to whether licensing of an operator by binding is possible in Irish. We then present one crucial example (15) concerning the issue, and confirm the hypothesis that Irish does allow “composite chains.” Furthermore, based on examples related to (15), we provide further support to the hypothesis that there are two types of operators which behave in a different manner in Irish: a base-generated operator and an operator which has undergone movement. Then, we show apparent counterexamples, in which the chain (*aN*, *aL*, *t*) is disallowed, when the verb that takes the complement clause headed by *aL* is a bridge verb. However, it is then shown that in well established contexts, the chain (*aN*, *aL*, *t*) is allowed with bridge verbs, which suggests that the chain at issue is in principle allowed in Irish. Finally, we examine whether other languages that behave like Irish allow a composite chain composed of binding and movement on the basis of Finer’s (1997) work on Selayarese, and show that such a chain is not allowed in Selayarese.

## 2. Licensing by Binding

McCloskey (2002) presents examples such as (5) and (7a–c) ((5) and (7a) are our own, and (7b, c) are McCloskey’s.), and argues that an operator in the SPEC of *aL* can be licensed by binding with *aN*.

(7) (*aN*, *aL*, *t*)

- a. an carr a raibh coinne agam a  
 the car aN was expectation at-me aL  
 cheannófá t  
 buy (COND) (S2)  
 ‘the car I expected you would buy’

- b. rud a raibh tuairim láidir agam a bheadh *t*  
 thing aN was opinion strong at-me aL be (COND)  
 aige  
 at-him  
 ‘something that I strongly suspected he would have’
- c. rud a raibh dóchas láidir agam a bhí *t* fíor  
 thing aN was hope strong at-me aL was true  
 ‘something that I strongly hoped was true’

These examples, at first sight, contain a noun-complement structure, as the word-by-word translations of the examples in (5) and (7a), for example, show in (8) and (9).

(8) the car which [hope [that ...]] was at me

(9) the car which [expectation [that ...]] was at me

If (5) and (7a) have the structure shown in (8) and (9), respectively, they are predicted to be ungrammatical because extraction out of the complement clause of the noun should result in a violation of the Complex NP Constraint (Ross (1967)) or a condition of this sort. However, this prediction is not borne out. Consider the examples in (10) and (11).

(10) (aL, aL, *t*)  
 an carr a bhí súil agam a cheannófá *t*  
 the car aL was hope at-me aL buy (COND) (S2)  
 ‘the car I hoped you would buy’

(11) (aL, aL, *t*)  
 an carr a bhí coinne agam a cheannófá *t*  
 the car aL was expectation at-me aL buy (COND) (S2)  
 ‘the car I expected you would buy’

(10) and (11) are perfectly grammatical. Both in (10) and (11), the topmost COMP is *aL*, which indicates that an operator base-generated in the position of *t* moves to that position by way of the SPEC of the intermediate COMP *aL*. Therefore, the apparent noun-complement structure does not constitute a complex NP.

Furthermore, extraction out of a noun-complement structure, such as *an tuairisc gur ...* ‘the claim that ...,’ leads to ungrammaticality, as shown in (12), and even if *gur* ‘that’ is changed to *aL*, the example does not improve, as shown in (13). (13) is worse than (12) in terms of grammaticality.

(12) \*an carr a chreideann Seán an tuairisc gur cheannaigh  
 the car aL believes John the claim that bought

Máire *t*

Mary

‘the car John believes the claim that Mary bought’

(13)\*\*an carr a chreideann Seán an tuairisc a cheannaigh

the car *aL* believes John the claim *aL* bought

Máire *t*

Mary

‘the car John believes the claim that Mary bought’

Therefore, it is clear that the noun-complement structure in (5) and (7) does not constitute a complex NP. Consequently, (5) and (7) do not count as evidence for the claim that an operator in the SPEC of *aL* can be licensed by binding by *aN*.

However, we have found one example clearly showing that binding must be a licensing mechanism for an operator in the SPEC of *aL*. Consider first the following example.

(14) (*aL*, *aL*, *aL*, *t*)

an carr a bhí súil agam a bheadh súil

the car *aL* was hope at-me *aL* be (COND) hope

acusan a cheannófá *t*

at-them(emphatic) *aL* buy (COND) (S2)

‘the car I hoped they would hope you would buy’

(14) is a perfect sentence. In (14), there are three embedded clauses with each COMP *aL*. This indicates that an operator base-generated in the position of *t* moves to the SPEC of the topmost COMP by way of the two intermediate COMPs in a successive cyclic fashion. Let us now consider the example in (15).

(15) (*aN*, *go*, *aL*, *t*)

an carr a raibh súil agam go mbeadh súil

the car *aN* was hope at-me that be (COND) hope

acusan a cheannófá *t*

at-them(emphatic) *aL* buy (COND) (S2)

‘the car I hoped they would hope you would buy’

(15) is again a grammatical sentence. In (15), the topmost COMP is *aN*, the second COMP is *go*, and the last COMP is *aL*. As, by hypothesis, there is a base-generated operator in the SPEC of *aN*, the SPEC of *aN* cannot be associated with the operator in the SPEC of *aL* by movement. Therefore, licensing of the operator by movement is impossible. Also, *go* does not have any force to license an operator in the SPEC of *aL*, as is evidenced by the ungrammaticality of (16).

(16) (go, go, aL, *t*)

\*an carr go raibh súil agam go mbeadh súil  
 the car that(past) was hope at-me that be (COND) hope  
 acusan a cheannófá *t*  
 at-them(emphatic) aL buy (COND) (S2)  
 ‘the car I hoped they would hope you would buy’

If *go* could license the operator in the SPEC of *aL* by binding, (16) would be grammatical. Therefore, the only possible way to license the operator in the SPEC of *aL* in (15) is through binding by the top-most COMP *aN*. The example in (15) then clearly suggests that McCloskey’s (2002) original claim is correct that an operator in the SPEC of *aL*, if it is not the head of the chain, may be licensed by binding.<sup>4</sup>

### 3. Two Types of Operators

The example in (15) clearly indicates that an operator in the SPEC of *aL*, if it is not the head of the chain, is licensed by binding. If we change the lowest COMP *aL* into *aN*, the example becomes worse than (15) in grammaticality, as shown in (17).

(17) (aN, go, aN, *it*)

\*an carr a raibh súil agam go mbeadh súil  
 the car aN was hope at-me that be (COND) hope  
 acusan a gceannófá é  
 at-them(emphatic) aN buy (COND) (S2) *it*  
 ‘the car I hoped they would hope you would buy it’

<sup>4</sup> One of the reviewers points out that the proposed licensing mechanism by binding will be further supported if *aN* and *aL* in the (aN, aL, *t*) chain may be separated by a barrier such as a complex NP. Unfortunately, however, this is not the case, as shown in (i).

(i) (aN, aL, *t*)

\*an carr a gcreideann siad an tuairisc go raibh súil agam a  
 the car aN believe they the claim that was hope at-me aL  
 cheannófá *t*  
 buy (COND) (S2)  
 ‘the car they believe the claim that I hoped you would buy’

In (i), *aN* and *aL* are separated by a pure complex NP, and the example is ungrammatical. Thus, the ungrammaticality of (i) seems to suggest that licensing of Op in the SPEC of *aL* may involve more than binding. We will leave this important issue for future research.

By hypothesis, there is an operator in the SPEC of the lowest COMP *aN*. If this operator functions like an operator in the SPEC of the lowest COMP *aL* in (15), (17) would be incorrectly predicted to be fully grammatical. This fact clearly indicates that an operator in the SPEC of *aL* and an operator in the SPEC of *aN* have totally different properties. While the former behaves like a resumptive pronoun, which can be bound by a non-local antecedent, the latter behaves as if it were an empty category that needs to have its antecedent in a local domain. Thus, (17) lends further support to McCloskey's (2002) claim that a base-generated operator in the SPEC of *aN*, if it is not the head of the chain, must be locally licensed, or "antecedent-governed," by the next higher operator. We are thus led to conclude that there are two types of operators in Irish: a base-generated operator and an operator that has undergone movement.

#### 4. Apparent Counterexamples

The pattern in (5) (*aN*, *aL*, *t*), however, is disallowed when the complement clause introduced by *aL* is subcategorized by bridge verbs that would allow long distance movement, as shown in (18) and (19).

(18) (*aN*, *aL*, *t*)

\*an carr a gcreideann tú a cheannaigh Seán *t*  
 the car *aN* believe you *aL* bought John  
 'the car you believe that John bought'

(19) (*aN*, *aL*, *t*)

\*an carr ar dhúirt tú a cheannaigh Seán *t*  
 the car *aN* said you *aL* bought John  
 'the car you said that John bought'

As noted in footnote 2, the chain (*aN*, *aL*, *t*) is allowed only in limited contexts, such as constructions with psych-nouns.

However, for reasons still unknown, structures such as (18) and (19) become grammatical, if they are embedded in full sentences. Consider (20) and (21).

(20) An carr a gcreideann Máire a cheannaigh Pól *t* dá  
 the car *aN* believe Mary *aL* bought Paul for-his  
 mháthair, tá sé ag rith go maith.  
 mother is it at run well  
 'The car Mary believes that Paul bought for his mother runs well.'

- (21) An fear a gcreideann Máire a cheannaigh *t* an carr  
 the man aN believe Mary aL bought the car  
 dá mháthair, tá tréan airgid aige.  
 for-his mother is much money at-him  
 'The man Mary believes bought the car for his mother has  
 much money.'

The grammaticality of (20) and (21) thus suggests that the chain (aN, aL, *t*) is allowed in principle in Irish, although structures with this chain, unless they are embedded in full sentences, are judged ungrammatical, due to some unknown factors, which we will leave for future investigation.<sup>5</sup>

## 5. Selayarese

In this paper, we have shown that there exists a composite chain in Irish, where the first part of the chain involves binding, and the second part of the chain involves movement. The question that immediately arises is whether other languages that behave like Irish allow such a chain. In this section, we focus on Selayarese, which, according to *Finer (1997)*, allows a type of a composite chain, where the first part of the chain involves movement, and the second part of the chain involves binding.<sup>6</sup>

Let us first go over basic properties of Selayarese relevant to the present context on the basis of *Finer's (1997)* work. Selayarese allows a composite chain, in which the first part of the chain involves movement, and the second part of the chain involves binding. In Selayarese, the third person absolutive marker *i* is obligatorily present on the verb that takes a declarative complement, but when long distance wh-movement takes place, it cannot appear, and at the same time, the COMP(s) across which the wh-phrase moves cannot appear, either. Therefore, the absence of *i* is a clear indication of overt movement. However, it also disappears, even if the example does not involve wh-movement, as shown in (22b).

<sup>5</sup> Note that the ungrammatical examples in (16) and (17) are still ungrammatical, when they are embedded in full sentences.

<sup>6</sup> Selayarese is an Austronesian language spoken on the island of Selayar in the Indonesian province of Sulawesi Selatan.



- (22) a. (Movement)  
 apa<sub>i</sub> mu-isse? la-isse? i Ali la-?alle t<sub>i</sub> i Baso?  
 what 2fam-know 3-know h A 3-take h B  
 ‘What do you know that Ali knows that Baso? took *t*?’
- b. (Resumption)  
 apa<sub>i</sub> mu-isse?(*\*-i*) muko la-isse?-i i Ali lako  
 what 2fam-know(-3) COMP 3-know-3 h A COMP  
 la-?alle-i R<sub>i</sub> i Baso?  
 3-take-3 h B  
 ‘What do you know that Ali knows that Baso? took *t*?’

In (22b), the COMP *muko* appears, which indicates that wh-movement has not taken place out of that clause. At the same time, as *i* cannot appear, a movement operation should be involved in the topmost clause. Therefore, Finer (1997) concludes that (22b) constitutes evidence for the existence of a composite chain, composed of movement and binding, in Selayarese. He proposes that (22a) and (22b) have the derivation in (23a) and (23b), respectively.

- (23) a. [CP wh<sub>i</sub> C [FP t<sub>i</sub> F [IP ... [CP t<sub>i</sub> [IP ... [CP t<sub>i</sub> [IP ... t<sub>i</sub> ...]]]]]]]  
 b. [CP wh<sub>i</sub> C [FP t<sub>i</sub> F [IP ... [CP t<sub>i</sub> α-ko [IP ... [CP α-ko [IP ... R<sub>i</sub> ...]]]]]]]

In both (23a, b), the matrix clause contains Focus Phrase. In (23a), the wh-phrase moves to the matrix CP SPEC in a successive cyclic fashion by way of FP SPEC in the matrix clause. In (23b), the wh-phrase is base-generated in the SPEC of the higher embedded clause, and from that position, it moves to CP SPEC by way of FP SPEC. Since the absolutive marker *i* disappears when a wh-phrase/operator moves across the verb, the fact straightforwardly follows that in (22b), the matrix verb does not contain it, but rather the next lower verb contains it.

Having outlined this background, let us examine whether Selayarese allows a composite chain composed of binding and movement. Let us consider the example in (24).

- (24) inai mu-isse?(*\*-i*) la-janjañg i Baso?  
 who 2fam-know(-3) 3-see h B  
 ‘Who do you know (that) Baso? saw *t*?’

(24) is ungrammatical, if it has the third person absolutive marker *i* on the matrix verb. In this case, the wh-phrase is base-generated in FP SPEC, and moves to CP SPEC in the matrix clause, so that the wh-phrase does not move across the matrix verb, and the absolutive marker

*i* is on the verb. As there is no overt COMP in the embedded clause, movement of a null operator should have taken place in that clause. Then, the relevant part of the derivation of (24) with *i* would be (25), and the chain involved in (24) with *i* would have three components, as shown in (26).

(25) [CP wh<sub>i</sub> C [FP t<sub>i</sub> F [IP ... [CP Op<sub>i</sub> [IP ... t<sub>i</sub> ...]]]]]

(26) a. (wh, *t*)            b. (*t*, Op)            c. (Op, *t*)

Note that *t* in (26b), which is a trace of the wh-phrase, binds the operator, and the subchain in (26c) has been created by movement. These two subchains constitute a chain composed of binding and movement, exactly like the Irish chain (aN, aL, *t*). However, the example in (24) with *i* is ungrammatical. This indicates that in Selayarese, a composite chain composed of binding and movement does not exist, in contrast to Irish. Furthermore, Hasan Basri (personal communication) pointed out to us that unlike Irish, there are no verbal expressions meaning “to hope” or “to expect” in Selayarese made out of nominal expressions *hope* or *expect* and other elements. Therefore, Selayarese does not have grammatical examples that correspond to the Irish example in (5). Hence, Selayarese does not have the chain made out of binding and movement. Thus, as far as we know, Irish is the only language that allows the chain made out of binding and movement (aN, aL, *t*) among languages so far investigated. This observation is linguistically very significant, because it raises important questions, such as why such a chain is allowed only in Irish, a VSO language, at the present stage of investigation, and what this implies for the general theory of movement/chain.<sup>7</sup>

## 6. Conclusion

We showed that Irish allows a chain composed of binding and movement in constructions with predicates containing psych-nouns. We also showed that Selayarese, which shows the same sorts of movement phenomena as Irish, does not allow this type of a chain. Thus, the chain at issue is only allowed in Irish among the languages so far observed. Then, the next task is to investigate why this is so, and what this

<sup>7</sup> If binding really enters into linguistic computation as a licensing mechanism, the question of “computational domain” may arise.

implies for the general theory of movement/chain. We leave these important issues for future research.

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(Hideki Maki)  
Faculty of Regional Studies  
Gifu University  
1-1 Yanagido, Gifu 501-1193  
e-mail: makijp@gifu-u.ac.jp

(Dónall P. Ó Baoill)  
Irish and Celtic Studies  
School of Languages, Literatures and Performing Arts  
Queen's University Belfast  
Belfast, BT7 1NN  
Northern Ireland  
e-mail: d.obaoill@queens-belfast.ac.uk