COMPLEX PREDICATES AND DERIVING COPULAR WORD ORDER[*]
Andrew Carnie, MIT

0. Introduction

In this short paper, I argue that under certain conditions, complex nominal predicates, like that in (1), undergo head-movement entirely analogous to verb-movement in finite clauses.

1)   Is *dochtuir ainmhithe* (í) **Beverly Crusher**
            C   doctor   animals (agr)
            "Beverly Crusher is a doctor of animals

I argue that these phrasal predicates undergo incorporation into their determiner head, which then undergoes head movement through the inflectional heads like verbal predicates. To argue for this position, I will make use of evidence from wh-extraction, anaphoric islands, and from the Irish responsive system. In so doing, I will provide an account of the word order alternations found in Irish copular clauses. The paper starts with a brief survey of some assumptions that I am making, then proceeds to my analysis

1.   Assumptions
1.1   Irish Word Order

Irish is a VSO language, as is seen in (2).

2)   Leanann   an t-ainmní an bhriathar i nGaeilge
            follow.PRES the subject   the verb   in Irish
            'The subject follows the verb in Irish'

Following McCloskey (1983) among many others, I will assume that this order is derived from an underlying SVO order. Adopting the analysis from Bobaljik and Carnie (1992) this order is derived by the head movement of V to the highest Inflectional head (3)

3)   [$_{AgrSP}$AgrS [$_{TP}$T [$_{AgrOP}$Agr0 [$_{VP}$V   ]]

I will not purse any position here about the location of nominal elements, instead will simply assume the account of Bobaljik and Carnie (1992) where the subject is in the

specifier of TP, and the object in the specifier of AgrOP (4), this results in the structure in (5).

4)   [[AgrS [⬆ [T [⬇ [Agr0 [subj [V obj]

5)   [AGRSP [AgrS +T +**V** +AgrO]i [TP **Subj**j [ti [AGROP **Obj**k [ti [VP tj ti tk]]]]]]
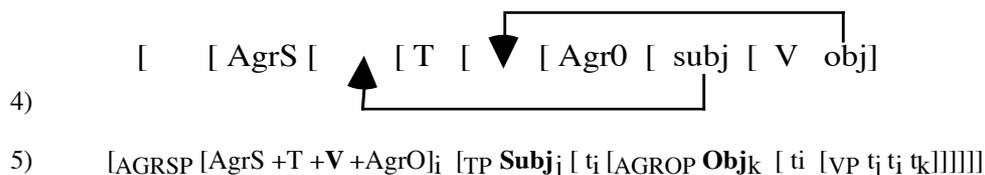
1.2   Some assumptions about "Be" in Irish

Irish has three different "be" constructions. A verbal "be" (6) found with adverbial, prepositional, adjectival, and verbal predicates.

6)   Tá an dochtuir mór   (adverbs, PPs, adjectives, Verbs
         Be the doctor   big   stage level nominal predicates)
         "the doctor is big"

It also has a non-verbal construction, using the tense/aspect complementizer *Is*. This is found with individual level nominal predicates and lexically marked APs and PPs. This comes in two orders, one where the *predicate* is preceded by the **subject** which is only found with definite predicates (seen in 7b), and one where the predicate precedes the subject (seen in (7a))

7) a)   Is *dochtúir ainmhithe* (í) **Beverly Crusher**   "Beverly Crusher is a doctor of animals"
         C   doctor   animals (agr)

   b)   Is   í **Beverly Crusher** *an dochtúir ainmhithe*
         "Beverly Crusher is the doctor of animals"

In most of traditional literature (e.g. ó Siadhail (1989)), the *is* morpheme is treated like a verb. I assume, following Carnie (1993), Doherty (1992) and Alqvist (1972) that it is really a complementizer particle and not a verb, which bears aspect and tense features. *Tá*, on the other hand is a real verb. It functions as an auxilliary and is found productively with adjectival, adverbial, PP, and verbal predicates. It is never found with nominal predicates:

8)   a)   Tá   sé mór   "he is big"   (adjectives)
             Be.pres he big
       b)   Tá   Seán go maith   "John is well"   (adverbs)
             be.pres   John adv well
       c)   Tá   Seán i mBaile Átha Claith   "John is in Dublin"   (PP)
             be.pres J   in Dublin
       d)   Tá   Seán ag rith   "John is running" (verb)
             be.pres J   prog run.dvn
       e)   *Tá   sé dochtúir   "He is a doctor"   (*NP)
             be.pres he doctor

Is , is found almost exclusivley with nominal predicates. It is generally not found with adjectival or prepositional predicates (9).

9)   a)   Is   dochtúir mé   "I am a doctor"   (NPs - Productive)
             C doctor   I
       b)   *Is cliste iad   "they are clever" (*adj)
             C   clever them
       c)   *Is   i nDaoire Seán   "*John is in Derry"   (*PP)
             C   in Derry   J
       d)   *Is ag rith é   "he is running"   (*Verb)
             C prog run him

The few adjectival and prepositional exceptions to this rule, as noted by Doherty (1992) are all individual level predicates (10):

10)a) *fiú*   worthwhile   *fíor*   true   *maith*   good   *olc*   evil
     aisteach   odd   *iontach* wonderful *ceart*   right   *cóir*   just
     leor   sufficient   *mór*   big   *beag*   small   *fuar*   cold
     gruama   gloomy   *cosúil*   similar   *ionann* equivalent
     greannmhar funny   *mall*   slow

   b)   Más   ceart mo chuimhne   "If my memory is right" (Doherty 1992)
        if   right my memory

   c)   de   "of"   meaning origin
        as   "out of"   meaning origin
        ó   "from"   meaning origin
        le   "with"   indicating possession

   d)   Is liomsa an t-Alfa Romeo sin   "I own that Alfa Romeo" (from Doherty 1992)
        C with.me the Alfa Romeo that

Doherty (1992) claims that the choice between *Is* and *Tá* follows from the stage/individual level distinction of Carlson (1977). *Is* being found exclusively with individual level predicates. This is consistent with the interpretation of nominal clauses in Irish. In English, a sentence like (11a) is ambiguous in its readings. The Irish Equivalent in (12) can only have individual level readings. To get the stage level reading, a different construction must be used: that in (13) which uses the stative aspectual preposition *ina* The *Is* morpheme is ungrammatical in this context (14).

11) a.   John was a doctor
    b.   PAST [doctor'(John)]   Individual level
    c.   (∃L)[PAST(L) & doctor'(John,L) Stage level

12)   Ba dhochtúir Seán
         C.past doctor him
         "he was a doctor"

13)   Bhí   Seán ina   dhochtúir (ach níl díolúine aige anois)
         Be.past J   in.his doctor (but be.not license at.3.s now)
         "John was a doctor (but he doesn't have a license now)

14)   *Ba dhochtúir é ach níl díolúine aige anois
         "He was a doctor but now he doesn't have a license"

Unfortunately, the stage/individual level distinction does not suffice for determining when you use *Is* or *Tá*. There are some individual level predicates that only ever appear with *Tá*. This is seen in (15)

15) a)   Bhí   sé cliste   b)   Bíonn   madraí ag amhastrach
         be.past he clever   *be.habitual dogs prog bark*
         "He was clever"   "Dogs bark"

    c)   *Ba   Chliste é
         C.past clever   him
         "He was clever (before he died)"

In Carnie (1993), I argue that the distinction follows rather from what elements are allowed to undergo head movement for feature checking in a given language. I argued there that nominal predicates are allowed to bear inflectional features in Irish, and behave like verbs in that they undergo head movement to the front of the clause, as is schematized abstractly in (16)

16) $[_{FP} ... F ... F .... [_{NP} N ...]]$
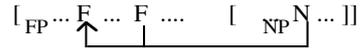
This approach is supported by facts from small clauses (Chung and McCloskey 1987) where, unlike other non-verbal predicates, nominal predicates are not allowed (17).. The ungrammaticality of (17b) follows from the fact that nominal predicates in Irish must bear inflectional features, since small clauses don't have inflectional heads, this predicate has nothing to check its features against.

17) a) Agus [é i gCalafóirnia]...   "And he is/was in California"
        And him in California

    b) *agus [é   dlíodóir]   "and he is/was a lawyer"
   *and him lawyer*

2.   *Two Kinds of Is*

The analysis above leads us to a very straightforward account of the word order alternation seen in (7) above. This analysis presented in this section is based heavily on research conducted by myself and Heidi Harley (Carnie and Harley 1994). Recall the two different word orders, seen in (18) below. The *predicate* (b) first order is found with indefinite attributed properties, the **subject** first order is found only with definite attributed properties.

18) a) Is é **Jean Luc Picard** *an captaen*   "Jean Luc Picard is the captain"
        C agr   the captain

    b) Is *dochtuir* (í) **Beverly Crusher**   "Beverly Crusher is a doctor"
        C doctor   (agr)

The predicate first order is immediately accounted for by the head raising analysis presented in section (1). The subject first order is more complex. We follow Rapoport (1987), among many others, in assuming that definite and indefinite attributed properties have different argument structures (contra Heggie (1988) and Moro (1993)). Sentences like (18a) have an abstract two place COP predicate which take both the subject, and the property being assigned to that subject as arguments (19a) which are assigned different theta roles (attribute, and attribute recipient). The indefinites, on the other hand directly theta mark their subject (19b) with the recipient role). This corresponds to the fact that definite NPs are referring expressions and have saturated argument structures, whereas indefinite NPs are not referring expressions and can directly predicate another noun.

19) a)   b)

           θ2   NP (NP)
        COP (NP1, NP2)   θ1
   θ1   (AR)
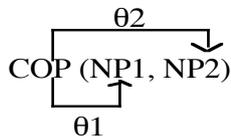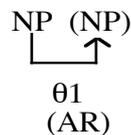
With definite predicates then (like that in (18a)) it is the abstract predicate COP, not the nominal predicate, that undergoes head movement. The COP morpheme is realized phonologically with the subject agreement features of the AgrS head, in the form of a pronominal element. Both nominals appear in argument positions. This seen in (20))

20)

$[_{CP}$ Is $[_{AgrSP}[$ AgrS $[_{TP}$ [T $[_{AgrOP}[$AgrO [subj [COP Attribute]]]]]]]]
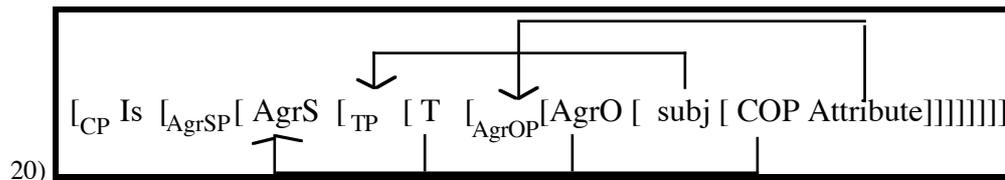
This can be contrasted with indefinite predicates where the predicate nominal itself undergoes the raising (21)[1].

21)

$[_{CP}$ Is $[_{AgrSP}[$ AgrS $[_{TP}$ [T $[_{AgrOP}[$AgrO [subj [Attribute]]]]]]]]
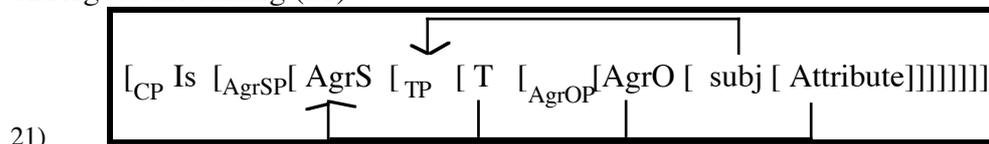
This then accounts for the various word orders of the Irish copula construction[2]:

22)

C (Particle)	AgrS (Predicate)	Spec,TP (Subject)	Spec,AgrO (Object)	
Ní *Neg*	fhaca *Saw*	Seán *John*	an dochtúir *the doctor*	Verb
Ní *Neg*	dochtúir *doctor*	Seán *John*		Indef N
Ní *Neg*	hé *COP*	Seán *John*	an dochtúir *the doctor*	Def NP

3. Incorporation and Head Movement of indefinite predicates

In section 2, I proposed that indefinite nominal predicates undergo head raising for feature checking in order to account for their initial position in the clause. Given that by definition head movement is the raising of heads, the question of what happens with a phrasal or complex nominal predicate arises. Surprisingly in Irish, entire phrasal and complex NPs appear in this first position (23), a position I claim is associated with head movement.

23)   Is   [dochtúir ainmhithe]   Seán
       C   doctor   animals.gen John
       "He is a doctor of animals"

At first, this may seem to be strong evidence against the head movement analysis suggested above. However, there is extensive evidence that in fact these complex

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[1] I assume following Carnie and Harley (1994) that the so-called accusative case showing up on the noun is due to the fact it is not adjacent to a tensed verb and does not reflect true case marking

[2] There is, in fact one more non-clefted order of the Irish copula construction (i)
    i)   Is   é   *an dochtuir* **é**   "he is the doctor"
          C   agr   the doctor   him
Given that there is a definite predicate or attribute, we predict that the subject pronoun should follow the agreement morpheme in the "subject" position. Instead it appears after the predicate. To account for this order, I turn to the phenomenon of Weak Pronoun Post posing discussed in Chung and McCloskey (1987) and Duffield (1994). Weak pronominal objects shift to the right as seen in (iii)
   ii)   a) Scaoil an Captaen **na féasair** ag na Clingiónaí   "The Captain fired the phasers at the Klingons"
              Fired   the Captain the phasers at the Klingons
           b) ?Scaoil an Captaen **iad**   ag na Clingiónaí   "The Captain fired them at the Klingons"
           c) Scaoil an Captaen ag na Clingiónaí **iad**   "The Captain fired them at the Klingons
Since the pronominals in Copular clause are weak grade, they are also subject to this rightward movement (iii)

    iii)   [Is [[$_{AgrS}$é]   [$_{TP}$é [an dochtuir]]]]]

phrasal elements are behaving like heads. I suggest that for all indefinite nominal predicates it is really the indefinite determiner (a normally phonologically null element) which functions predicationally, and that all the complements to this determiner incorporate into it. It is this determiner head then which undergoes the head movement (24), thus accounting for the apparent anomalous appearance of complex predicates in a position normally reserved exclusively for heads.

24)

$$[\text{ Is } [\text{ AgrS } ... [_{DP}\text{subj } [\text{ Det } [....\overline{\text{N Adj CP}}..]]$$

headmovement
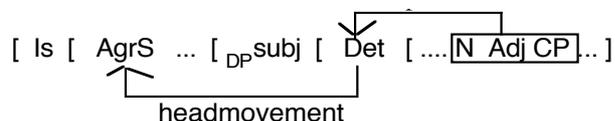
In this section, I will present three types of evidence that show that such an approach is correct. Evidence from wh-extraction, anaphoric islands, and the responsive system all suggest that indefinite NP predicates form incorporated heads, since they behave like words more than phrases.

3.1 Evidence from wh-extraction.

One piece of evidence in favor of the incorporated status of indefinite nominal predicates comes from wh-extraction. The argument is as follows. If predicates have undergone head movement forming complex heads, then the subcomponents should not be allowed to extract via wh-movement. There is an obvious problem with such a test, in that the extraction of subconstituents is usually ruled out by some other constraints such as subjacency, the ECP, or other Island conditions. In English, the extraction of subconstituents is ruled out by exactly these types of constraints. One would think that because such sentences are ruled out by other constraints we would not be able to test for incorporation using them. However, Irish does consistently allow subjacency/ECP type violations (McCloskey 1979). If the speaker leaves a resumptive pronoun at the extraction site and changes the highest complementizer from a^L to a^N. then a sentence with such a violation is rendered grammatical (see McCloskey 1979 for more details). This is seen in the following examples. In (25), we have an example of a sentence with a wh-island. Wh-movement of the subject of the embedded clause (25b) is licit, as long as the highest complementizer is a^N, and the resumptive pronoun *sé* 'him' is found at the extraction site. The ECP and subjacency are allowed to be violated under such conditions.. Similar facts are found with nominal islands as is seen in (26)

25) a) Bíonn fios   agat   i gconaí [$_{cp}$ caidé$_i$ a^L bhuailfidh an píobaire t$_i$]
    be.hab know at.2.s always   what$_i$ COMP   play.fut   the piper t$_i$
    "You always know what the piper will play"

    b) Cén Píobaire$_j$ [$_{cp}$a^N mbíonn fios agat i gconaí [$_{cp}$caidé$_i$ a^L bhuailfidh sé$_j$ t$_i$]]
    Which piper COMP be.hab know at.2.s always whati COMP play.fut. him
    "Which piper do you always know what he will play"

26) a) Tá máthair an fhir san otharlann
    Be.pres mother the man.gen in.the hospital
    "The man's mother is in the hospital"

    b) Cé   a^N bhfuil a$_i$ mháthair san   otharlann
    who   COMP be.pres his mother   in.the hospital
    "Who is (his) mother in the hospital"

Given that such extraction is licit then, we can use wh-extraction as a test for the "word" or incorporated status of a nominal. If wh-extraction is licit, then the sequence

of morphemes is phrasal, if wh-extraction is illicit, then it is functioning like a single word.

This pattern is exactly what we find with nominal predicates. An incorporated definite NP predicate like that in (27) does not allow extraction, despite the fact that Irish normally allows extraction out of nominal islands (*arb* is the special form of a^N found in copular clauses).

27) a)   Is [$_{np}$ amhrán $_i$ [$_{cp}$a^L bhuailfidh an píobaire t$_i$]](é) "Yellow Submarine"
        C   song   COMP play.fut. the piper   agr
          "'Yellow Submarine' is a song which the piper is going to play"

   b)   *Cén Píobaire$_j$ arb [$_{np}$ amhrán$_i$ [$_{cp}$a^L bhuailfeadh sé$_j$ t$_i$]](é) "Yellow Sub"
        Which piper rel   song   COMP play.cond him   agr
        "*Which Piper is 'Yellow Submarine' a song which he/t$_i$ is going to play"

These can be strikingly contrasted with the definite NP attributes, which are not predicates and do not undergo incorporation or head movement. With these sentences wh-extraction is licit.

28) a)   Is é "Yellow Submarine"[$_{np}$ an t-amhrán $_i$ [$_{cp}$a^L bhuailfidh an píobaire t$_i$]]
        C agr   the song   COMP play.fut. the piper
        "'Yellow Submarine' is the song which the piper is going to play"

   b)   Cén Píobaire$_j$ arb é 'Yellow Submarine' [$_{np}$ an t-amhrán$_i$ [$_{cp}$a^L bhuailfeadh sé$_j$ t$_i$]]
        Which piper rel agr   the song   COMP play.cond him
        "Which Piper is 'Yellow Submarine' the song which he/t$_i$ is going to play"

This conclusion is given support by the *in situ* status of wh-questions of subconstituents in Irish questions. In Irish, wh-movement is always marked by a wh-complementizer. In the formation of wh-questions of indefinite nominal predicate constituents, however, no such wh- complementizer is ever found (29), showing that questions have the wh-element *in situ*. Wh-*in situ* is found nowhere else in this language.

29) a)   *Cad arb   a dhochtuir (é) McCoy
        What rel his doctor   agr McCoy
        "*What would McCoy be a doctor of?"
   b)   Cen sort   dochtura   (é) McCoy
        What kind   doctor. gen agr McCoy
        "What is McCoy a doctor of?" (lit. "McCoy is what kind of Doctor?")

3.2 Evidence from Anaphoric Islands

Slightly more subtle evidence comes from the binding theory. In English, binding out of a phrase (as in 30a) is licit. The word "animal" can serve as an antecedent to the pronoun. In (30b and c) however, we see that binding out of a syntactic compound is noticeably degraded[3], and that binding from a lexical compound is completely ungrammatical.

30) a)   *Binding from a phrase:*   John is [a doctor of [animals]$_i$] but he is allergic to them$_i$
   b)   *From a "syntactic" compound:*   ?John is [an [animal]$_i$ doctor] but he is allergic to them$_i$
   c)   *From a lexical compound*: *My favorite tool is the fly$_i$-swatter but they$_i$ are all extinct

We can use this as a diagnostic for "word" status. If we compare the definite and indefinite sentences we see there is a similar contrast in the binding facts. Binding out

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[3]Thanks to Michael Rochemont for pointing this out to me.

of the incorporated indefinite is less grammatical (31a) than that of the clearly phrasal element in (31b)

31)a)   ?Is dochtúir ainmhithe¡ Seán ach is fuath leis iad¡
        C   doctor animals   John but cop hate with.3 them
        John is a doctor of animals but he hates them(animals)

   b) Is é Seán an dochtúir ainmhithe¡ ach is fuath leis iad¡
        C agr J the doctor of animals but cop hate with.3 them
        John is the doctor of animals but he hates them(animals)

This is consistent with the notion that the indefinite head moved predicate NP is really an incorporated structure.

3.3 Evidence from the Responsive System.

Finally, there is some evidence that not only are these predicates incorporated words, but that they are not in a specifier position either. Moro (1993), Heggie(1988), and Heycock (1991) have all argued that in the English reverse copular construction the predicate NP is in a specifier position (For Moro and Heycock this is the specifier of IP, for Heggie the specifier of CP). I claim that there is substantial evidence that this is incorrect at least for Irish. This evidence comes from the responsive system.

In order to understand how this works, however, we must first discuss complementizer cliticization.. McCloskey (1992) argues in some detail that complementizers in Irish lower to adjoin to the verb in its inflectional head. This is schematized in (32). I refer you to his work for more details.

$$[_{CP} \text{C} [_{AgrSP} \text{V+AgrS} \dots]$$

32)

Turning now to the issue at hand, Irish has no words for yes or no, instead you repeat the verb in either the positive or negative form as seen in (33), where the negative form is indicated by an adjoined complementizer .

33)   a)   An bhfaca tú an Ferengí? b)   Ní fhaca   OR c) Chonaic
              Q saw   you the Ferengi   Neg saw   Saw
              "Did you see the Ferengi?"   "no"   "yes"

This can be analyzed as the elision of everything to the right of the verb in a manner familiar from VP ellipsis (34).

34)   Elide everything except AgrS(and adjoined complementizer)

For example, you elide the shaded parts of the sentence schematized in (35).

35)

C +	AgrS	Spec,TP	Spec,AgrO	R-adj
Ní	fhaca	Seán	an ferengí	inné
Neg	*Saw*	*John*	*the ferengi*	today

Given that we have claimed predicates in copular clauses are in AgrS, then when this elision occurs, then the predicate should remain. At least for the adjectival and prepositional predicates that appear in this construction this is true (36-37).

36)   Q: An le Seán   an Subaru? A: Is leis   "Yes"
              Q   with J the Subaru   **C AgrS**
              "Does John own the Subaru?"   C with.him

37)   Q   An   ceart mo chuimhne   A: Is ceart   "Yes"
              Q right my memory   **C AgrS**
              "Is my memory is right?"   (from Doherty 1992)

In sentences with definite NP predicates, this is also true. Recall that in the analysis sketched above, definite NP predicates do not incorporate, rather they are the argument of an abstract COP predicate. Thus in sentences with definite NPs we expect only the pronominal agreement realization of the abstract predicate to remain (38). This predication is true.

38)   Q: An é Ceannasaí an Enterprise William Riker?   Is é
             Q COP Commander the   **C AgrS**
             "Is William Riker the Commander of the Enterprise?"

The situation is more complex with indefinite nominal predicates (39) which I argue appear in AgrS. In these cases the predicate does not surface, but is replaced by the dummy pronominal "ea"

39)   a)   An dochtúir Leonard McCoy?   b)   *Is dochtúir
             Q Doctor   ✓Is ea
             "Is Leonard McCoy a doctor?"

This is a kind of "do support". This dummy pronominal shows up when you have an indefinite predicate. What is crucial here is that the element appearing in the Agr head is retained (via the pro-form "ea") in responsives, supporting the analysis that these complex nominal predicates are incorporated into AgrS.

Now let us consider the status of specifiers. This issue is very difficult to test since the highest specifier never seems to be filled by anything in Irish. McCloskey (1993) points out that there is a set of elements that appear to be IP-initial or IP-adjoined elements. Based on scope and negative polarity items, he claims that the sentence initial adverbs in (40a) are IP adjoined (in our terms AgrS-adjoined). I refer the reader to that work for arguments in favour of this position.

40)   a)   I lár an gheimhridh, an bhfaca tú do chara,   b)   Ní fhaca
           in middle the winter, Q see   you your friend   No.
           In the middle of winter, did you see your friend

What is interesting about these cases is that in the responsive system the elements which are either in the specifier or adjoined are omitted. Again, only the C-V-AgrS head remains. If we follow Kayne (1993) in assuming that specifiers and adjuncts are the same kind of object, we have strong evidence against predicates being in an specifier position. The responsive system of Irish only repeats the AgrS head all other specifiers and adjuncts are omitted. If the predicates in Irish were in such a position we would expect them too to be omitted. This is contra to fact.

4. Conclusion

In this short paper, I've attempted to sketch an analysis that accounts for some strange word order facts of sentences with non-verbal predicates in Irish. The predicate first order parallels verbal predicates in that they head raise to initial position. The fact that this is allowed of complex or phrasal predicates is due to the incorporation of these into their determiner heads. Evidence for this incorporation comes from both wh-extraction and anaphoric islands, where subconstituents of indefinite predicates fail to behave like other phrasal constituents in the language. This can be contrasted with definite NP predicates which are argued not to be predicates at all, but are arguments of an abstract COP predicate. It is this COP predicate which undergoes the raising. With these NPs, subconstituents do behave like real phrasal constituents with respect to anaphoric binding and wh-extraction. Finally, evidence from the responsive system of Irish not only suggests that certain non-verbal predicates incorporate and undergo head movement, but also that they are clearly in a head rather than a specifier position.

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