

ON THE DEFINITION OF X^0 AND XP

Andrew Carnie

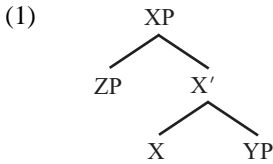
Abstract. In this article, an underdetermined theory of phrasality is presented, in which bar level plays no role with respect to the rest of the grammar. Evidence for this comes from mismatches in bar level and behavior in Irish and Tagalog nonverbal predication structures, Irish construct state nominals, and Persian nominals.

1. Introduction

Since the advent of generative grammar, the notions of *phrase* and *head* have been viewed as primitives by many syntacticians (see, e.g., Chomsky 1957 and Jackendoff 1977). More recently, some authors have claimed that they can be derived from other structural relations, such as terminality (i.e., a head) or being dominated by an element that is not a projection of the head (i.e., a phrase) (see, e.g., Speas 1990, Chametzky 1996, Chomsky 1994, 1995b). Under both of these conceptions of phrasality, however, the standard assumption is that whether a phrase marker (henceforth *p*-marker) is a head or a phrase determines its behavior with respect to the rest of the syntax. For example, given a structure like (1), we predict certain behaviors of the constituents. Only phrasal constituents like XP, YP, and ZP may undergo A-movement and A'-movement. From a semantic perspective, usually only phrasal constituents can receive a reference.¹ Similarly, only heads like X may participate in head-to-head movement, participate in inflectional morphology, bear inflectional features, select for complements, and—idioms aside—are the only items that have idiosyncratic lexical properties of all types (phonological, semantic, syntactic, and morphological).

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¹ Leaving aside the issue of proper names and clitics for the moment.



In this paper, I claim that the idea that phrasal status determines behavior is backwards. I show that “phrase” and “head” are not syntactic primitives; I also claim they are not structurally defined. Instead, I claim that any given p-marker may bear properties of both traditional “phrases” and “heads.” Phrase markers are undetermined for phrasality—there is no absolute defining property of phrasality. Instead, I claim that there are phraselike² behaviors and headlike behaviors, and the fact that these give the appearance of a particular phrasal status is epiphenomenal to these behaviors. “Phrases” and “heads” in this conception are thus simply artifacts of the other syntactic properties of the p-markers involved. What limits the behavior of p-markers are other properties of the human language computational system (such as the interface with morphology/phonology and the interface with the semantic component), not a structural definition or stipulation of the p-markers’ status as a phrase or head. In other words, there are no rules of grammar that actually refer to phrasal level. Instead, principles refer to features and features types. What appear to be restrictions on phrasal level are in fact artifacts of possible feature mergers and mapping between components of the grammar. I discuss some properties of the minimalist *Bare Phrase Structure* approach of Chomsky (1994, 1995b) that logically lead us to this conclusion. I show that Chomsky’s definitions of the minimal relations in phrase structure cause us to lose the formal distinction between phrase and head. Rather than this being a problem for the theory, I show that this, in fact, gains us empirical advantage with respect to certain phenomena in the syntax of nonverbal predicates in Modern Irish. I then show that this analysis provides a simple account of related facts in other languages. In turn, this leads us away from a theory of movement that relies on Generalized Pied Piping (GPP) and early insertion of morphological items, and moves us toward one that has late insertion along the lines argued for independently in such recent work as Halle and Marantz 1994, Harley 1995, and others.

² The reader should note that I’m using the terms “phraselike” and “wordlike” very loosely. This is particularly important, since I am claiming that the notions “phrase” and “head” have no status in the grammar. To say that something is “phraselike” could lead to a kind of circularity. By “phraselike” and “headlike,” I imply no status to the notions “phrase” and “head.” Instead, I am using the term “phraselike behavior” to cover processes and behaviors that have more standardly been treated as “phrases” and “headlike behavior” to refer to processes and behaviors traditionally linked to words.

2. The Bare Theory of Phrase Structure

Early work in structuralist and generative linguistics (e.g., Harwood 1955 and Chomsky 1957) assumed that four different kinds of information must be contained in rules describing or generating p-markers: (i) the constituency of the linear string of elements in a sentence, (ii) the phrasal status of those elements, (iii) the linear ordering of those elements, and (iv) the semantic/categorial selectional relations between those elements. Take, for example, the typical rules given in (2).

- (2) $S \rightarrow NP VP$
 $NP \rightarrow Det (AdjP) N$
 $VP \rightarrow V (NP)$

These rules encode such information as the phrasal status of each node in the tree, the categorial status of each node, the ordering of sister nodes, as well as subcategorizational information (such as the fact that verbs may optionally select an NP complement). Based on work by Chomsky (1970), Jackendoff (1977) argued that some of this information is redundant, as it is already available in the lexicon. For example, information on semantic and categorial selection must already be encoded in the lexical entry for most words. The verb *kiss* has the partial lexical entry in (3).

- (3) *KISS*: [_{NP}_____] [*KISS* [_{NP}_____]]
 [+animate] [−abstract]
 {agent} {patient}

To distinguish it from other verbs, *kiss* must encode such information as the fact that it takes two arguments—the animate agent and the nonabstract patient—both of which must be NPs. The patient NP must be the complement, and the agent the subject. There is considerable redundancy in this representation with respect to the information in the phrase structure rules. Given that this information is necessarily idiosyncratic to specific lexical entries, Jackendoff concludes that it should be eliminated from the phrase structure. Additionally, he notes that the rules take a systematic shape: each phrase is the projection of one of its daughters. Again, building on the work of Chomsky (1970), he notes that there can be no rules of the kind seen in (4).

- (4) *NP \rightarrow Det Adj

Jackendoff proposes that categorial and selectional information be eliminated from phrase structure rules. He claims that phrase structure rules are constrained by “X-bar schema” (a simplified version of which is sketched in (5)).³

³ See Muysken 1983 for a short survey of the history of X-bar theory and its crucial parts and for an alternative formalization of the schema.

- (5) $X^n \rightarrow (C_1) \dots (C_j) - X^{n-1} - (C_{j+1}) \dots (C_k)$
 where $1 \leq n \leq 3$, and $C = X^{\max}$

This schema retains information about phrasal level and about linear order. It also maintains a notion of “head” but makes it non-category-specific. These notions were further refined by such researchers as Stowell (1981), who argued that phrase structure rules are not needed at all, the X-bar schema being all that is necessary and sufficient.

Travis (1984, 1989)⁴ argues that linear ordering should be excluded from the phrase structure component. Instead, she argues that such parameters as Case directionality, directionality of θ -assignment, and headedness, account for base linear ordering. For example, the ordering of a verbal head with respect to its complement follows not from some inherent property of the phrase structure, but from the direction (rightwards or leftwards) that Case assignment applies. Kayne (1994) proposes a different analysis of linear ordering. He claims that we can derive the linear order of constituents from the relation of asymmetric c-command between terminal elements. He proposes that if a terminal asymmetrically c-commands another terminal, then the first precedes the second in linear order. This is encoded in the Linear Correspondence Axiom:

- (6) *Linear Correspondence Axiom (LCA)*:
 $d(A)$ is a linear ordering of T
 (where T is the set of all terminal elements, A is the set of ordered pairs of nonterminals where the first asymmetrically c-commands the second, and $d(A)$ is the set of terminals dominated by A (Kayne 1994)).

(For a more thorough discussion of the LCA, see Kayne 1994 and Chomsky 1994, 1995b.) Chomsky’s (1995a) Minimalist Program strives to eliminate all but the “conceptually necessary” stipulations and theoretical machinery from the grammar. Both Travis’s and Kayne’s proposals clearly fall within the spirit of such an approach, since they attempt to derive the ordering stipulations of X-bar theory from other relations otherwise motivated in the grammar.

Speas (1990) further attempts to reduce the amount of information contained in the phrase structure component. Speas proposes that an element’s phrasality (X-bar status) need not be stipulated in the structure, rather it can be read directly off the phrase structure tree. She proposes the following principle of phrase structure generation (definitions from Chametzky 1996):⁵

⁴ See Pullam 1985 and Kornai and Pullam 1990 for criticisms of the Stowell/Travis approach to phrase structure.

⁵ The definitions here are those given by Chametzky (1996) rather than those found in Speas 1990. See Chametzky 1996 for arguments.

(7) *Project α*

An instantiated⁶ node labeled X is dominated by an uninterrupted sequence of X-labeled nodes.

Bar level is then defined based on the hierarchical structure generated by Project α . Using the following definitions, the bar level can be read off of the tree structure, rather than being primitive and stipulated by the phrase structure rules or X-bar schema.

(8) *Maximal projection*

$X = X^{\max}$ iff $\forall G$ which dominate X, $G \neq X$

(9) *Minimal projection*

$X = X^0$ iff X immediately dominates nothing⁷

In other words, a node is a minimal projection (X^0) if it dominates nothing. It is a maximal node (XP) if it is dominated by an element that is not a projection of its head.

Developing the notions of Speas (1990),⁸ in his (1994, 1995b) *Bare Phrase Structure* (henceforth BPS), Chomsky proposes a minimalist theory of phrase structure. Chomsky proposes that the bare theory of phrase structure consists of the following:

- Given two lexical items, you want to MERGE⁹ them into a single unit with a label. The label represents the properties of the merged pair that are relevant to the syntax (e.g., features). The null assumption is that the label of the merged unit is the label of one of its daughters. Ordering is stipulated by the LCA.
- The following are the minimal relations among elements of the p-markers: head, complement, specifier

Let us take a simple example of a phrase like “the platypus.” We wish to merge the two items into an unordered pair with a label. Following Abney (1987), we make the determiner the label.¹⁰ This is formalized in set theoretic notation as in (10).

⁶ Where “instantiated” means associated with a lexical item.

⁷ Where the node X^0 is considered to be equal to, rather than dominating, the lexical item that instantiates it.

⁸ See also Baltin 1989 and Marantz 1989, which serve as early precursors to BPS.

⁹ MERGE can operate on terms brought from the lexicon as well as on its own output. Chomsky also allows an operation of MOVE, which merges an item α with an item β , where α is already a subconstituent of β . This is the bare theory equivalent of Move α .

¹⁰ Or more properly, the features associated with that determiner, represented here simply by the word “the.”

- (10) {the, {the, platypus}}
- ↑ ↑ ↑
- label; merged lexical items

This can be informally represented in a tree:

- (11)
- ```

 the
 / \
 the platypus

```

Let us now consider how this conception of phrase structure differs from previous ones. Note that syntactic category labels (N, V, Adj, etc.) are replaced by a label representing the formal features of the merged p-marker (in (11) this is informally represented by the word “the”). Further, and much more importantly, note that as in Speas 1990, X-bar theory is not a primitive, instead being derived from the structure. Chomsky limits “heads”<sup>11</sup> (meaning  $X^0$ s) to terminal elements. Although this straightforwardly accounts for the vast majority of cases, Chomsky is forced to stipulate an account for complex  $X^0$ s formed by head-to-head movement. While these complex heads are clearly  $X^0$ s, they are not obviously terminal.<sup>12</sup> Chomsky resorts to the theory of adjunction to explain these. If head-to-head movement is adjunction, and further, it is the target of the movement that always projects, then it follows that at least one segment of the complex category formed by adjunction will be terminal. For example, in the following abstract diagram, if the lower segment of the category Y ( $Y_1$ ) is terminal, then the whole p-marker counts as a terminal and thus is an  $X^0$ .

- (12)
- ```

      Y2    {<Y, Y>, {Y, X}}
     /  \
    X    Y1
  
```

Although this characterization generates the correct results, it seems quite stipulative.¹³ Notice also that were there to be a case whereby head-to-head

¹¹ For an interesting discussion of the various uses of the term “head,” see Muysken 1983.

¹² For the purposes of this paper, I will reserve the term “head” to refer to elements which give their labels to the merged complexes. I use the term “ X^0 ” to refer to elements (heads or otherwise) that are “wordlike” (in a sense to be defined below) and the term “XP” to elements that are “phrasal” (again in a sense to be defined below). To clarify, then, we have the following four loose definitions:

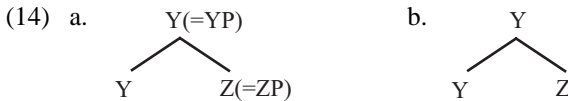
- (i) *Terminal*: a term with no constituents
Head: the term that gives its label to a constituent
 X^0 : an element that is “wordlike” (in a sense to be defined below)
 XP: an element that is “phraselike” (in a sense to be defined below)

¹³ Brody (1996) raises similar concerns. See Brody 1996 also for a discussion of a number of other problems with BPS.

movement applied through substitution rather than adjunction, the system of terminal nonphrasality would collapse.¹⁴ I propose that a simpler characterization, which lies well within the general system proposed by Chomsky, results when we abandon the terminality stipulation of BPS. In later sections of this paper, I show how this minor adjustment to Chomsky's approach provides good results for a series of interesting phenomena in a wide variety of languages. Before turning to this, however, let us first examine how the BPS approach to phrase structure, without the terminality stipulation, provides a system by which all p-markers can be ambiguous between X^0 s and phrases. Consider the merged pair here:

(13) {Y, {Y, Z}}

This set is ambiguous in interpretation: it could be both a YP dominating a ZP, or a Y node that has had a Z node merged with it. This is seen in the diagrams in (14) (recall that linear order is irrelevant). In (14a) a YP dominates a ZP, and (14b) is the result of merging a Z X^0 to a Y node.



Adjunction structures are similarly ambiguous: the set {<Y,Y> {Y,Z}} could equally describe a Z adjoined to an Y head or a ZP or Z adjoined to an YP.¹⁵ Chomsky's system, less the terminality stipulation, thus provides no mechanism for determining the phrasal status of a p-marker. I claim that this is a good feature of the bare theory.¹⁶ The null, most minimal, definition of XP and X^0 is that there is no such distinction, primitive or structurally derived. Instead, whether an item appears to be an XP or an X^0 is an artifact of its behavior. Nodes can have properties of XPs or properties of X^0 s, but these are not structurally defined; rather, they are based on other syntactic constraints. We expect that that because a p-marker can have different behaviors with respect to different components of the grammar, it follows that we might have p-markers that show ambiguous behavior with respect to their phrasality.

Chomsky notes that there is at least one case where a p-marker behaves both like an phrase and like an X^0 : clitics. Take, for example, the Irish subject clitic shown in (15) and the French object clitics seen in (16):

¹⁴ I cannot think of an empirical example of this actually occurring. However, there is no a priori reason that it should be excluded from the grammar. See Rizzi and Roberts 1996 for an analysis of head-to-head movement that involves substitution rather than adjunction.

¹⁵ Note that this kind of structure (an X^0 adjoined to a YP) is ruled out by Kayne's (1994) LCA corollaries, however.

¹⁶ Note that Brody (1996) claims relational/derivative theories of phrase structure are unwanted in a minimalist grammar.

- (15) [Chonaic **sé**] an platapas le glóiní.
 saw-**he** the platypus with binoculars
 ‘He saw the platypus with binoculars.’
- (16) Jean ne [l’a] pas vu.
 John NEG **it**-has NEG seen
 ‘John has not seen it.’

These elements have syntactic properties of both XPs and X⁰s. Like other arguments, these clitics are θ -marked and may skip intermediate X⁰s in their movement up to their surface position (i.e., they violate the Head Movement Constraint of Travis 1984). In this sense they behave like phrases. On the other hand, they adjoin to verbal heads, just like X⁰s. Chomsky limits these cases of phrasal ambiguity to elements that are terminal. In the present proposal, by abandoning the terminality stipulation, the prediction is made that there should be cases where apparently “phrasal” (nonterminal) p-markers behave like X⁰s. As shown in the next section, these situations do arise. In what follows, I present some evidence from Modern Irish nonverbal predicates that shows similar, but converse, behavior to the clitics: they look like phrases and are complex, but appear in a position normally limited to verbal heads.

3. Modern Irish Nonverbal Predicates: Complex X⁰s

Irish is a language with a startling array of copular constructions. Consider the sentences in (17).¹⁷ In each of these sentences, the notional predicate is indicated in italics and the notional subject is indicated in boldface. Example (17a) is a verbless¹⁸ copular sentence, which is found with nonreferring nominal predicates and certain lexically marked adjectives and prepositional phrases. The predicate precedes both the subject and the optional agreement morpheme. As seen in (17b,c), this is true even when the predicate is phrasal or complex. It is sentences like (17b,c) that I will be concerned with here. Sentence (17d) shows a different construction without a verbal “be.” This construction is found only with nonreferring nominal predicates. In this construction, the agreement morpheme and the subject precede the notional predicate.

¹⁷ Irish also has another copular construction not seen in (17). This is a verbal “be”:

- (i) Tá **an cangarú** *spágach*.
 be-PRES the kangaroo flatfooted
 ‘The kangaroo is flatfooted.’

This construction is found with many adverbial, adjectival, prepositional, and verbal predicates. It is not relevant to the discussion here, so I will not discuss its distribution. For more information on this verb, see Carnie 1993, 1995, Doherty 1996, and Carnie and Harley 1994.

¹⁸ It is important to note that the morpheme *is* in these sentences, despite its surface similarity to English *is*, is not in fact a verb at all. Rather, it appears to belong to the set of complementizer particles of Irish. See Ahlqvist 1972, Doherty 1996, and Carnie 1995 for further discussion.

- (17) a. Is *baincéir* (é)¹⁹ **an panda**.
 COMP banker (AGR) the panda
 ‘The panda is a banker.’
- b. Is *dochtúir capall* (é) **Cathal**.
 COMP doctor horses-GEN (AGR) Cathal
 ‘Cathal is a doctor of horses.’
- c. Is *amhrán* *a^L* *bhuailfidh an píobaire*
 COMP song COMP play-FUT the bagpiper
 (é) “**Yellow Submarine**.”²⁰
 (AGR)
 ‘“Yellow Submarine” is a song which the bagpiper is going to play.’
- d. Is é **Cathal** *an captaen*.
 COMP AGR Cathal the captain
 ‘Cathal is the captain.’

Below, I present evidence that a sentence like those in (17b,c) involves a complex phraselike element that has undergone head movement. In section 3.1, I sketch some assumptions I make about Irish syntax. In section 3.2, I present an analysis of the word-order alternation seen in (17a,c). Finally, in section 3.3, I provide evidence that even when the predicate is complex, head movement is involved.

3.1 Some Background Assumptions About Irish Syntax

Irish is a VSO language, as illustrated in (18).

- (18) *Leanann an t-ainmní an briathar i nGaeilge*.
 follow-PRES the subject the verb in Irish
 ‘The subject follows the verb in Irish.’

¹⁹ The presence of this agreement morpheme is dialect dependent, being found mainly in the central Conamara dialect.

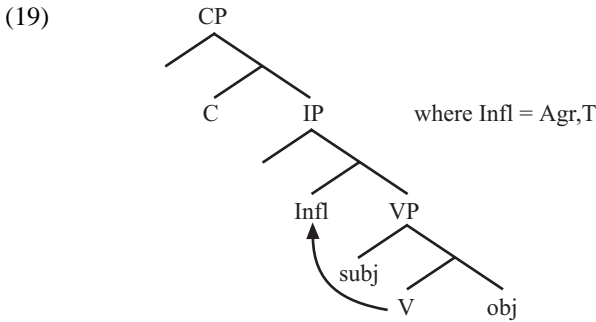
²⁰ This is not the only word order available for such clauses. The relative clause may optionally be left behind in the base position of the predicate:

- (i) Is *amhrán* é “**Yellow Submarine**” *a^L* *bhuailfidh an píobaire*.
 COMP song AGR WH-COMP play-FUT the bagpiper
 ‘“Yellow submarine” is a song which the bagpiper will play.’

Ó hAnluain (1960) notes “Uaireanta déanta dhá chuid d’fhaisnéis fhada d’fhonn cothromaíochta.” [Sometimes, long predicates are split for the sake of balance]. Ní Chiosáin (personal communication) tells me that although both are correct, the split form in (i) is stylistically preferred. In Old Irish, interestingly, splitting the head of a nonverbal predicate from its complement was the norm:

- (ii) Ba *lán Hériu dia airdircus in chon*.
 COMP full Ireland of fame the dog-GEN
 ‘Ireland was full of fame of the dog.’
 (*Scéla Mucce Meic Dathó*: Lehmann & Lehmann 1975)

Following McCloskey (1983) among many others, I assume that this order is derived from an underlying SVO order. Simplifying somewhat for expository purposes, I adopt the raising analysis of VSO order proposed by Sproat (1985), among others. I assume that the surface order is derived by the head movement of V to the highest inflectional head, here represented as Infl, around the surface subject.



While it is probably the case that VSO order in Irish is derived more complexly, involving movement of the subject and object argument, such matters would only confuse the issue under discussion here. I presume then, that the tree in (19) is simply a shorthand notation for a more complex structure with multiple functional categories and overt movement of the arguments. See Bobaljik and Carnie 1996, Carnie 1995, Duffield 1995, Guilfoyle 1994, and McCloskey 1996b, among many others, for discussion of such alternatives.

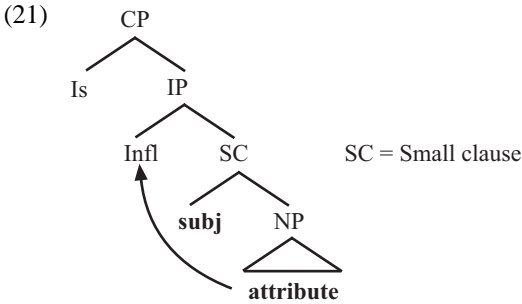
3.2 Nonverbal Predication in Irish

Let us now consider in detail the two different word orders found with nonverbal predication in Irish (see Ó Siadhail 1989 and Stenson 1981 for a discussion of the full range of copular constructions in Irish). The predicate-first order (20a) is found with indefinite, nonreferential attributed properties; the subject-first order (20b) is found only with definite or referential attributed properties.

- (20) a. Is *teangeolaí* (í) **Máire**.
 COMP linguist (AGR) Mary
 'Mary is a linguist.'
- b. Is é **Seamus** *an captaen*.
 COMP AGR James the captain
 'James is the captain.'

Here I adopt the analysis of Carnie 1993, 1995, where (following a suggestion made first in Collberg 1990) I proposed that the predicate-first

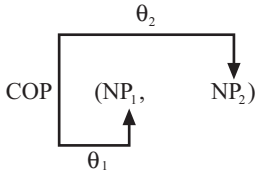
order (20a) is derived via the head movement of the nonverbal predicate to the highest inflectional head, in a manner exactly parallel to tensed verbs (cf. (19)).²¹



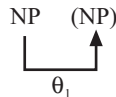
In (21), the equivalent to the VP is the SC (or perhaps even Bowers’s (1990) PredP), the attribute predicate functions like a verb and raises around the subject to initial position, lower than the complementizer.

The derivation of other order is more complex, however. I follow Rapoport (1987), Higgins (1973), and Zaring (1996), among others, in assuming that definite and indefinite attributed properties have different argument structures (contra Heggie 1988, Heycock 1992, and Moro 1997). Following Carnie and Harley 1994 and Carnie 1995, I claim that sentences like (20b) have an abstract two-place COP predicate that takes both the subject and the property being assigned to that subject as arguments (22a). These two arguments are assigned different θ -roles (perhaps “attribute” and “attribute recipient”). The indefinites, on the other hand, directly θ -mark their subject with the recipient role (22b). 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 be directly predicated of another noun.

(22) a. *Referential properties*

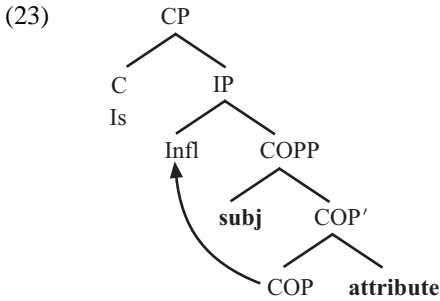


b. *Nonreferential properties*



²¹ A similar analysis of Breton copular structures is suggested by Hendrick (1994). For a contrasting analysis of Irish copular constructions see Doherty 1996 and the discussion of his analysis in Carnie 1993.

With definite predicates like that in (22a) then, 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 Infl head, in the form of a pronominal element (*é/í/iad*). Both nominals appear in argument positions, as shown in (23).



In (23), the COP predicate bears inflectional features, which it checks by head-moving through the functional heads to the highest position. The arguments move to their Case positions, in a manner parallel to normal VSO order.

This, then, derives the two basic word orders of Irish copular clauses. A summary of clause types is given in (24).

(24)

Comp (Particle)	Infl (Predicate)	Spec,VP (Subject)	VP,comp (Object/comp)	Clause type
Ní <i>NEG</i>	fhaca <i>saw</i>	Seán <i>John</i>	an dochtúir <i>the doctor</i>	Verb
Ní <i>NEG</i>	dochtúir <i>doctor</i>	Seán <i>John</i>		Indef N
Ní <i>NEG</i>	hé <i>COP+AGR</i>	Seán <i>John</i>	an dochtúir <i>the doctor</i>	Def NP

There seems to be a clear generalization to be made of the various types of Irish clauses, the clause consists (in order) of a complementizer particle, an inflected predicate with some form of agreement²² where appropriate, a subject NP, and an optional complement.

²² This agreement seems to be optional in the case of nonreferential, indefinite predicates. For discussion of this optionality, see Carnie 1995. It is, as mentioned above, also dialect dependent.

3.3 The Problem of Complex Predicates

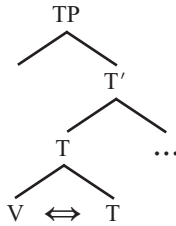
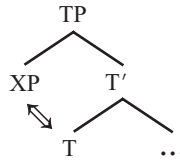
Now let us return to the issue of phrase structure. The analysis sketched above runs into problems when it comes to complex nominal predicates like that in (25). The whole predicate appears in the position associated with the head-moved element. Since head movement is, by definition, the movement of heads, not of phrasal categories, it seems unusual to claim such movement is possible for what appear to be phrases.

- (25) a. Is [dochtúir capall] é.
 COMP doctor horses-GEN him
 ‘He is a doctor of horses.’
- b. Is [amhrán a^L bhuaifidh an píobaire] “Yellow
 COMP song COMP play-FUT the bagpiper
Submarine.”
 ‘“Yellow Submarine” is a song which the bagpiper is going to play.’

However, this is exactly what I intend to do. I propose, informally for the moment, that these complex “phrase”-like elements cannot be unambiguously classified as to the projection level of their p-markers. This explains why they are allowed in a position normally associated with inflected predicates (i.e., between particles and subject agreement). If this is true, then we have another case, like clitics, where an element behaves both like an XP and like an X^0 . In the next few subsections, I present some empirical evidence for this claim.

3.3.1 Movement to specifier or head?

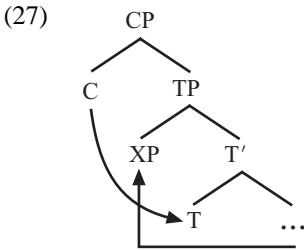
I have proposed that complex predicates like those in (25) have adjoined to the lowest projection of V, despite their outward appearance as phrases. This, obviously, is only one possible analysis of these facts. In response to an earlier version of this paper and Carnie 1995, a number of researchers have proposed that complex predicates occupy not the head of the highest inflectional category but its specifier. This is the proposal made for the Irish facts by Doherty (1997). Similar proposals, again in response to earlier versions of the present paper, have been made by Legate (1997), Lee (2000), Massam (2000), and Travis and Rackowski (2000). Doherty (1997) claims, following Carnie (1995), that the fronting of nonverbal predicates is motivated by the requirement that nonverbal predicates in the language (unlike English) check their tense features overtly with the T^0 head. Unlike Carnie 1995, and this work, Doherty argues that tense checking on a predicate may occur in two different ways. The T-features may be checked by head-to-head movement of the kind found with verbal predicates; alternately, they may be checked in a specifier-head relation like case-checking for nominals:

(26) a. *Verbal predicates*b. *Nonverbal predicates*

This approach, while initially appealing in the way it avoids the XP/X^0 ambiguity issue, is problematic in a number of ways. First, there is the problem that the checking of T-features in a spec-head relation, while theoretically plausible, is not otherwise attested in Irish or elsewhere.²³ In languages with morphologically tensed nominal predicates (such as the Salishan languages), the head noun appears in a head position rather than a specifier. Next there is the problem of the predicate appearing in the specifier of TP. Recall that Irish is a VSO language. McCloskey (1996a) has argued that Irish never seems to fill the highest specifier of the Inflectional complex. In itself, this is probably the best evidence against the NP predicate being in a specifier position (contra Doherty 1997). Given that this position is unequivocally disallowed as a landing site in the language, it would be highly surprising if the predicate moved to this position. On the other hand, we know that under the standard view of Irish word order, verbal predicates normally undergo head movement to derive their clause-initial positioning. It is not a far stretch to imagine that, phrasality notwithstanding, the same process derives predicate-initial order with nonverbal predicates as well.

Perhaps the most telling evidence against nonverbal predicates appearing in specifier positions is noted by Doherty himself. McCloskey (1996a) provides exhaustive evidence from IP-adjoined adverbs that complementizer particles in Irish lower and adjoin to the verb in T (rather than the verb raising and adjoining to the particles in C). In particular, McCloskey claims that these particles lower around phrasal adverbial material adjoined to the TP and attach to the T^0 head. The details of this analysis are not a concern here. However, if McCloskey is correct and complementizers in Irish do lower and adjoin to T^0 , then Doherty's specifier approach predicts the wrong word order for copular constructions in the language. Consider the diagram in (27). This is the structure of a nonverbal predication construction that has both Doherty's raising of the nonverbal predicate and McCloskey's lowering of the complementizer particle to adjoin to T^0 :

²³ In section 4, I will present a constraint on what features are checked in various configurations, based on a proposal of Noonan (1997). In this view, specifier-head checking of tense features is inconsistent with this independently motivated constraint.



If this were correct, we would predict the order predicate – complementizer+inflection – subject. This is incorrect, as shown in (28a); the only grammatical order is that in (28b).

- (28) a. *Dochtúir is (é) Seán.²⁴
 doctor COMP AGR John
 ‘John is a doctor.’
 b. Is dochtúir (é) Seán.
 COMP doctor AGR John
 ‘John is a doctor.’

This is suggestive evidence that the predicate is not in a specifier position.

The discussion here is not meant by any means to be convincing evidence in favor of the proposal I am making. Instead, it is meant to cast some doubt on the alternatives. In the next two subsections, I present evidence that in Irish, these complex predicates have behaviors that demonstrate their ambiguous phrasality.

3.3.2 Evidence from *wh*-extraction

One piece of evidence in favor of the X^0 -like status of complex indefinite nominal predicates comes from *wh*-extraction. The argument is as follows. If predicates have undergone head movement like traditional X^0 s, then subcomponents of these predicates should not be able to extract via *wh*-

²⁴ There is, in fact, in the Kerry dialect, a grammatical predicate-complementizer order (see Ó Sé 1987, 1995, and Ó Siadhail 1989 for discussion):

- (i) Dochtuir is ea é.
 doctor C PRO he
 ‘He is a doctor.’

This order is formed by fronting the predicate to the specifier of CP, as shown by the appearance of the pro-predicate *ea* in the post-complementizer, pre-agreement position, presumably through some process of topicalization or focusing, similar to the predicate cleft phenomena discussed by Lefebvre and Lumsden (1990) and elsewhere. A full account of these facts lies beyond the scope of this paper; however, see the discussion of *ea* below.

movement. Before proceeding to the actual test, it is worth noting that Moro (1997) and Heycock (1992) have argued that a similar blocking of extraction from copular clauses in English can be accounted for using subjacency. Such an account is untenable in Irish, however, as Irish does consistently allow subjacency/ECP-type violations (McCloskey 1979, 1990). If the speaker leaves a resumptive pronoun at the extraction site²⁵ and changes the highest complementizer from a^L to a^N , then a sentence with a subjacency violation is rendered grammatical (see McCloskey 1979, 1990 for more details). This is shown in the following examples. Example (29) is a sentence with a *wh*-island. *Wh*-movement of the subject of the embedded clause (29b) 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 may be violated under such conditions. Similar facts are found with nominal islands as seen in (29c,d).

- (29) a. *Bíonn fhios agat i gconáí [CP caidé_i a^L bhuaifidh*
 be-HAB know at-2SG always what_i COMP play-FUT
an píobaire t_i]
 the bagpiper
 'You always know what the bagpiper will play.'
- b. *Cén píobaire_j [CP a^N mbíonn fhios agat i gconáí [CP caidé_i*
 which bagpiper COMP be-HAB know at-2SG always what_i
a^L bhuaifidh sé_j t_i]]
 COMP play-FUT he
 'Which bagpiper do you always know what he will play?'
- c. *Tá máthair an fhir san otharlann.*
 be-PRES mother the man-GEN in-the hospital
 'The man's mother is in the hospital.'
- d. *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?' (Fig. 'Whose mother is in the hospital?')

Given that such extraction is licit, we can use *wh*-extraction as a test for the X^0 -like status of a nominal, in contrast to the situation found in English. If *wh*-extraction is licit, then the sequence of morphemes is behaving like a fully phrasal *p*-marker; if *wh*-extraction is illicit, then the sequence is behaving like an X^0 .²⁶ This distribution is exactly what we find with nominal predicates. An indefinite, nonreferential NP predicate like that in (30) does

²⁵ I am assuming an operator extraction analysis of relative clauses like that in McCloskey 1990.

²⁶ Below, I propose a theory of phrase structure without a primitive notion of X^0 . In such a theory, the explanation for the islandhood of these "heads" disappears. The solution to this contradiction may lie in other sources such as the idea that an adjoined structure results in an island or from the feature-checking configuration requirements discussed in section 4.

not allow extraction,²⁷ despite the fact that Irish normally allows extraction out of nominal islands.²⁸ This is consistent with the idea that these are exhibiting X^0 -like behavior.²⁹

²⁷ Jim McCloskey (personal communication) has pointed out to me a small number of what appear to be counterexamples to the claim that extraction out of nonverbal predicates is disallowed. For example:

- (i) na daoine_i ar leo_i an teach
 the people *WH-COMP* with-3PL the house
 'the people who own the house'
 (Lit. 'the people who the house is with them')
- (ii) ar an bhfoireann_i darab [Captain e_i] Parnell
 on the team of-*WH-COMP* captain Parnell
 'on the team of which Parnell was captain'

Note, however, that these cases differ in a significant way from the extractions seen in the main body of the text. These examples are both relative clause constructions, whereas the examples in the text are both *wh*-questions. Adopting the analysis of Irish A' -constructions proposed in McCloskey 1991, examples (i) and (ii) probably do not exhibit real movement. Instead, they are instances of a base-generated operator-variable construction. There is no a priori reason why *wh*-extraction and base-generated operator-variable constructions should behave identically with respect to phrasality. In particular, given that these examples do not involve any kind of movement, there is no reason to suggest that they would be sensitive to the phrasality of the *p*-marker that contains them. These examples, therefore, do not take away from the strong contrast seen in the main body of the text.

²⁸ *Arb* is the special form of a^N found in copular clauses.

²⁹ In response to an earlier version of this paper, Legate (1997) presents an interesting alternative analysis for these extraction facts. Based on the observation made in Carnie 1995 that predicates containing anaphors seem to reconstruct in Irish, she claims that the ungrammaticality of (28) is due to an interaction of *wh*-movement and reconstruction. She claims that predicates obligatorily reconstruct at LF. Such reconstruction involves the deletion of the higher copy of the predicate chain. This higher copy of the predicate contains the trace of the *wh*-extracted element. Deletion of this copy results in the deletion of the variable bound by the *wh*-operator, which gives rise to vacuous quantification and ungrammaticality.

- (i) $wh_i \dots [\text{PRED } t_j] \dots [[\text{PRED } \dots wh]_j]$

This ingenious alternative is, however, both empirically and theoretically flawed. First, from a theoretical perspective, it is based on a misinterpretation of Carnie 1995. Carnie 1995, following Doherty (1996), observes that sentences like (ii) are grammatical.

- (ii) Is [cosuil [lena chéile]_i]_j [Seán agus Máire]_i t_j .
 c like with-their other John and Mary
 John and Mary are like one another.

In (ii), the predicate, which contains a reciprocal anaphor, is higher in the tree than its antecedent. Carnie (1995) claims that the grammaticality of this sentence is due to the fact that a copy of the predicate chain is *c*-commanded by the antecedent:

- (iii) Is [cosuil [lena chéile]_i]_j [Seán agus Máire]_i [cosuil [lena chéile]_i]_j
 c like with-their other John and Mary like with-their other
 John and Mary are like one another.

Carnie 1995 claims that the lower copy is the relevant one for binding—not that the higher copy is deleted at LF (via some reconstruction operation). More recent minimalist approaches to reconstruction phenomena—in particular, those that take a very strict cyclic approach (e.g., Barss, in prep., and Epstein et al. 1998), claim that reconstruction does not properly involve

- (30) a. Is [_{NP} *amhrán*_i [_{CP} *a^L* *bhuailfidh an píobaire t_i*]]
 COMP song COMP play-FUT the bagpiper
 (é) “**Yellow Submarine.**”
 AGR
 ‘“Yellow Submarine” is a song which the bagpiper is going to play.’
- b. *Cén píobaire_j arb [_{NP} *amhrán*_i [_{CP} *a^L* *bhuailfeadh sé_j t_i*]]
 which bagpiper *wh*-COMP song COMP play-COND he
 (é) “**Yellow Submarine?**”
 AGR
 “Which bagpiper is “Yellow Submarine” a song which he/*t_i* is going to play?”

deletion of the higher copy and interpretation at an LF interface. Instead, they claim that interpretation of the anaphor happens “online” as the tree structure is built. That is, when the phrase containing the anaphor is merged with the antecedent, it is properly interpreted, and subsequently serves no interpretive function. The fact that this element is later moved is irrelevant. Such approaches do not involve any deletion of higher material. Support for this kind of approach comes from the fact that in many cases, configurations like that schematized in (i), are indeed grammatical, at least for people who freely allow embedded topicalization. (My thanks to Howard Lasnik for pointing out this example to me.)

- (iv) (?)Which athletes do you think that [autographs of *t_j*], I should save *t_j*.

Topicalization appears to “reconstruct.”

- (v) Pictures of myself, I should save.

Extraction out of topicalized phrase seems to be for most speakers at least marginally acceptable, if not completely grammatical. This grammatical sentence is precisely the configuration represented in (i). Legate’s analysis of Irish predicate nominals wrongly predicts that such sentences should also be ungrammatical; whereas the nondeletion analysis of reconstruction does not.

Even with this alternative analysis of reconstruction, which points away from Legate’s interpretation of these facts, there may be some evidence that Carnie 1995 is wrong in claiming that predicates reconstruct. It appears as if predicates are not subject in anyway to the binding theory, even in English. This is due to the indexing nature of the predication relation itself (see, among others, Napoli 1988). Predicates are obligatorily indexed to their subjects. Such indexing results in clear violations of the binding theory both in equatives and predicative constructions:

- (vi) He_i is John_i. (cf. *He_i saw John_i.)
 (vii) John_i is him_i. (cf. *John_i saw him_i.)
 (viii) He_i is [a Smith]_i. (cf. *He_i saw [a Smith]_i.)
 (ix) He_i is [President of the United States]_i. (cf. *He_i saw [the President of the United States]_i.)

While examples where a true predicate (like (viii) and (ix)) containing a referential NP are difficult to construct (because predicates are by definition nonreferential)—and since more complex constructions such as *[He_i is [a man who John_i hated]_i] will automatically result in *i*-within-*i* violations—these examples seem to suggest that predicates in general are immune to the binding conditions.

Given the fact that Legate’s analysis is empirically flawed (in that it wrongly predicts the ungrammaticality of extraction out of so-called reconstruction environments) and theoretically inconsistent with many current approaches to reconstruction phenomena, it may be dismissed as plausible alternative to the head-movement analysis presented here.

This can be strikingly contrasted with the definite NP attributes, which are not predicates and do not undergo X^0 movement. In these sentences, *wh*-extraction from the definite NP is licit.

- (31) a. Is \acute{e} “Yellow Submarine”_{[NP an t-amhrán_i [CP a^L COMP AGR the song COMP}
bhuailfidh an píobaire t_i]
 play-FUT the bagpiper
 ‘“Yellow Submarine” is the song which the bagpiper is going to play.’
- b. Cén píobaire_j arb \acute{e} “Yellow Submarine”_{[np an}
 which bagpiper WH-COMP AGR the
t-amhrán_i [CP a^L bhuailfeadh sé_j t_i]
 song COMP play-COND he
 ‘Which bagpiper is “Yellow Submarine” the song which he/ t_i is going to play?’

Notice that this is the opposite acceptability to what would be predicted from definiteness effects.³⁰ See, for example, the phenomenon discussed by Erteschik-Shri (1973), Horn (1974), and Diesing (1992), among many others, where extraction from indefinites is better (33) than extraction from definites (32) (data and judgments from Diesing 1992:102).

- (32) a. *?Who did you see the picture of?
 b. *Who did you write every book about?
 c. *What did you paint most pictures of?
 d. *Who did you read all books by?
- (33) a. Who did you see a picture of?
 b. Who did you write some books about?
 c. What did you paint many pictures of?
 d. Who did you read several books by?

To summarize, *wh*-extraction is generally allowed from phrases of all types throughout the grammar of Irish. However, extraction from NPs that appear in initial (predicate) position is disallowed. This is a position normally associated with head movement, so it follows naturally that the extraction facts follow from a difference in what elements have undergone head movement for feature checking.

This conclusion is given support by the in situ status of *wh*-words in subconstituents of Irish copular clauses. In Irish, *wh*-movement is always marked by a *wh*-complementizer (usually taking one of the forms a^L , a^N , *ar*, *ar(b)*, *ab*, *is*, depending on the situation; see McCloskey 1979, 1990 for more

³⁰ My thanks to Michel DeGraff for pointing this out to me.

discussion). As seen in (34), *wh*-in-situ in Irish is not licit with verbal predicates.

- (34) *Bhuail Cathal cad?
 hit-PAST Charles what
 ‘Charles hit what?’
 (cf. Cad **a^L** bhuail Cathal?)
 what *WH-COMP* hit-PAST Charles

This is true independent of focus stress on the *wh*-word. Strangely, however, in the formation of *wh*-questions of constituents of indefinite nominal predicate constituents, we find that *wh*-in-situ does appear.³¹ This is evidenced by the lack of an overt *wh*-complementizer. The presence of such a complementizer (*arb/ab*) is completely illicit:³²

- (35) a. [Cén sort dochtúra] (é) Seosamh?
 what kind doctor-GEN AGR Joseph
 ‘Joseph is what kind of doctor?’
 b. *Cad **arb** a dhochtúir (é) Seosamh?
 what *WH-COMP* his doctor AGR Joseph
 ‘What would Joseph be a doctor of?’
 c. *Cén sort dochtúra **ab** (é) Seosamh?
 what kind doctor-GEN *WH-COMP* AGR Joseph
 ‘What kind of doctor is Joseph?’

The initiality of the *wh*-words in these constructions is illusory; it is simply an artifact of the fact that Irish is predicate initial. The true test of whether the *wh*-word is in situ or not is the presence of a *wh*-complementizer, which is absent in these forms. The sentences in (33) thus seem to be clear cases of

³¹ The *wh*-word does not have to stay in situ; however, it may front (appearing to the left of the complementizer), leaving the predicate proform *ea* at its extraction site. This order is preferred for both *wh*-phrases (i) and simplex copular clauses in the Southern Kerry dialects (ii) (see Ó Siadhail 1989 and Ó Sé 1987, 1995, for discussion).

- (i) [Cén sort dochtúra]_i is ea_i é?
 what type doctor-GEN C PRO he
 ‘What kind of doctor is he?’
 (ii) [Dochtúir capall]_i is ea_i é.
 doctor horses-GEN C PRO he
 ‘He is a doctor of horses.’

See section 3.3.3. for discussion of *ea*.

³² As is, somewhat surprisingly, any complementizer particle. The reasons for this are unclear to me; however, it may be the case that there is simply a null complementizer found with *wh*-in-situ constructions. Null complementizers are found elsewhere in the language, and Modern Irish shows agreement between the type of *wh*-complementizer (McCloskey 1990) and the *wh*-element. This may be another instance of this kind of *wh*-agreement phenomenon with the agreeing form of the complementizer simply being realized as a null element.

wh-in-situ. This is a truly surprising fact about Irish copular clauses which is simply explained if Irish nominal predicates are behaving, at least in part, like X^0 s, out of which extraction cannot occur.

3.3.3 Evidence from the responsive system

There is some further evidence that these complex predicates are behaving like traditional X^0 s. This evidence comes from the responsive system. Irish has no words for *yes* or *no*; instead, the verb is repeated in either the positive or negative form, as seen in (36) (where the negative form is indicated by an adjoined negative complementizer).

- (36) Q: An bhfaca tú an teangeolaí?
 Q saw you the linguist
 ‘Did you see the linguist?’
 A: Ní fhaca.
 NEG saw
 ‘No.’
 or Chonaic.
 saw
 ‘Yes.’

This can be analyzed as the elision of everything to the right of the V+Infl complex in a manner familiar from VP ellipsis (see McCloskey 1991 for more discussion). For example, the shaded parts of the sentence schematized in (37).

(37)

C +	Infl	Spec,VP	comp,VP	R-adj
Ní	fhaca	Seán	an teangeolaí	inné
NEG	saw	John	the linguist	today

Given that I have claimed predicates in copular clauses are in Infl, then when elision occurs, then the predicate should remain. At least for the adjectival and prepositional predicates³³ which appear in this construction, this is true, as shown in (38) and (39) (from Doherty 1996).³⁴

³³ There are a limited set of prepositional and adjectival predicates that appear in this construction. In general, adjectival and prepositional predicates appear with a verbal *tá*. See Doherty 1996 for discussion.

³⁴ I am grateful to Jim McCloskey for pointing these facts out to me.

- (38) Q: An le Seán an Subaru?
 Q with John the Subaru
 'Does John own the Subaru?'
 A: Is leis.
COMP INFL
 COMP with-him
 'Yes.'

- (39) Q: An ceart mo chuimhne?
 Q right my memory
 'Is my memory right?'
 A: Is ceart.
COMP INFL
 COMP right
 'Yes.'

In sentences with referential NP attributes, similar behavior also occurs. Recall that in the analysis sketched above, referential NP attributes are not X^0 s in an functional projection, rather, they are the argument of an abstract COP predicate. Thus in sentences with definite or referential NPs, we expect only the pronominal agreement realization of the abstract COP predicate to remain after ellipsis. This prediction is also true (40).

- (40) Q: An é an feirmeoir Liam?
 Q-COMP INFL the farmer Liam
 'Is Liam the farmer?'
 A: Is é.
COMP INFL
 'Yes.'

The situation is more complex with indefinite nonreferential nominal predicates, which I argue appear in Infl. In these cases, the predicate does not surface but is replaced by the dummy pronominal *ea*:

- (41) a. An dochtúir Seosamh?
 Q doctor Joseph
 'Is Joseph a doctor?'
 b. *Is dochtúir.
 ✓Is ea.

This may well be similar to *do*-support. This dummy pronominal shows up when there is a nonreferential indefinite predicate. What is crucial here is that the element appearing (a pro-predicate) in the Infl head is retained (via the

proform *ea*³⁵) in responsiveness, supporting the analysis that these complex nominal predicates are part of Infl.³⁶

3.4 Section Summary

In this section, I've presented evidence that indefinite predicates in Modern Irish, despite the fact they can be phrasal and complex, appear in a position traditionally associated with head movement. Evidence for the partly X^0 -like status of these predicates comes from the responsive system, where they behave like verbal heads in an Infl head, and from *wh*-extraction, where constituents of these elements cannot be extracted.

The following question now lies open: why is it that a phrasalike element is allowed to behave like a traditional head in this one particular case? Before considering the answer to this question, I show that the phenomenon of phrasality mismatches is quite wide spread crosslinguistically, lending support to the notion that the notions "phrase" and "word" are merely epiphenomenal. In the following section, I show how these kinds of facts follow directly from the underdetermined nature of phrasality sketched in section 1.

4. Other Cases of Phrasality Mismatches

In this section, I explore some other examples of constructions where there is an ambiguity between phrasal and X^0 behavior, lending principled support to

³⁵ Doherty (1997) asserts that there is no evidence that this particle is a proform representing the predicate and may only be present for phonological reasons to support the clitic morpheme *is*. Interestingly, there is crosslinguistic evidence for the presence of special proforms that represent nonverbal predicates in ellipsis and *wh*-extraction contexts (which are the environments where *ea* appears.) In Haitian Creole, a special proform *ye* is found in precisely the same context, modulo differences in the responsive system, as the Irish *ea*. See DeGraff 1995 for a fascinating discussion. English "do" may be viewed in similar light as a pro-predicate, although appearing in a different kind of environment. Similarly, Moro (1997) argues that Italian *ci* is a pro-predicate particle. Given that there seems to be crosslinguistic evidence for the appearance of such predicational proforms, Doherty's claim that *ea* is present only for clitic support requires more evidence to be justified. Further, the fact that *ea* only appears when there is an immediate predicational antecedent (either in the discourse or in the same sentence) seems to bode well for the pro-predicate analysis of the particle. See also Ó Siadhail 1989 for a similar analysis of this morpheme.

³⁶ An anonymous reviewer has suggested an alternative view of this fact to me. They suggested that if the predicate were to occupy some specifier position lower than the traditional predicate position (Infl), a move consistent with Doherty's (1997) analysis, and that there were an abstract copular predicate occupying Infl, ellipsis would elide the nominal predicate. The proform *ea* would appear as an overt realization of the abstract copular predicate when it is followed by a gap. This being similar to the English fact that you can't get contraction in front of a gap:

- (i) Susanna is happy. I know she is \emptyset / *I know she's \emptyset .

Although this explanation seems to work well for (39), it breaks down in light of examples (36) and (37), where the predicate PP and AP survive elision and no "abstract predicate" surfaces. This explanation also fails to account for the behavior of nonverbal predicates with respect to the extraction phenomena discussed in the previous section.

the notion that X^0 and XP are theoretical constructs without empirical support.

4.1 Tagalog Clitic Placement³⁷

Tagalog, a VSO language spoken in the Philippines, shows a remarkable number of similarities to Irish with respect to copular constructions. First, as in Irish, there is a difference in word order and Case marking between predicative and equative sentences (Norvin Richards, personal communication). Consider the sentences in (42).

- (42) a. Doktor si Beverly.
 doctor CASE³⁸ Beverly
 ‘Beverly is a doctor.’
 b. Si John ang kapitan.
 CASE John CASE captain
 ‘John is the captain.’

In (42a), a predicative construction, the predicate nominal precedes the subject NP. In the equative (42b), by contrast, the attribute NP follows the subject NP. This is the exact parallel of the Irish cases discussed earlier. I claim that the predicate NP *doktor* in (42a) has undergone head movement to the initial predicate position. In the equative construction (42b), both NPs remain in argument (Case) positions, as shown by the fact that both NPs take Case marking.

Interestingly, the predictions of the claim that Tagalog copular constructions parallel those in Irish are held up by the data: (i) complex nonverbal predicates are allowed in initial position, and (ii) these complex predicates behave partly like X^0 s. Example (43) shows a complex predicate appearing in the initial predicate position.

- (43) [Takot sa kulog] na si John.
 afraid DAT thunder now CASE John
 ‘Now, John is afraid of thunder.’

This, I claim, follows my account of Irish copular constructions. The evidence for these complex nonverbal predicates’ X^0 -like behavior comes from second position. Tagalog has a set of Wackernaglian clitics (for more discussion, see Sityar 1989 and Kroeger 1993), one of which is the pronoun *siya* (‘he/she’). These clitics are typically found immediately following the

³⁷ I would like to thank Norvin Richards for his extensive help with this section.

³⁸ There is a great deal of controversy over whether Tagalog is a nominative/accusative language or an ergative/absolutive one. I avoid taking a stand on this issue and will simply gloss all the structural Case morphemes as CASE.

first “word” in the clause, as shown in (44) with a variety of constructions with verbal clitics.³⁹ As seen in (44b,d,e), positioning the clitic anywhere other than after the initial “word” is illicit:

- (44) a. Bumalik siya sa Maynila.
returned she DAT Manila
‘She went back to Manila.’
b. *Bumalik sa Maynila siya.
returned DAT Manila she
‘She went back to Manila.’
c. Hindi siya bumalik sa Maynila.
not she returned DAT Manila
‘She didn’t go back to Manila.’
d. *Hindi bumalik siya sa Maynila.
not returned she DAT Manila
‘She didn’t go back to Manila.’
e. *Hindi bumalik sa Maynila siya.
not returned DAT Manila she
‘She didn’t go back to Manila.’

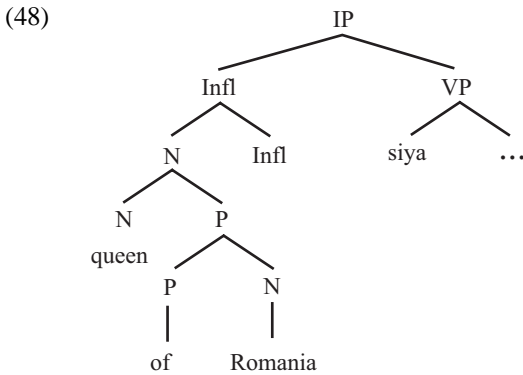
Interestingly, nonverbal predicates behave differently in this respect. The clitics can appear either immediately after the first “word” in the nonverbal predicate, as in (45a), (46a), and (47a), or after the whole complex predicate itself, as in (45b), (46b), and (47b).

- (45) a. Reyna siya sa Rumanya.
queen she DAT Romania
‘She is queen of Romania.’
b. Reyna sa Rumanya siya,
queen DAT Romania she
‘She is queen of Romania.’
(46) a. Galing siya sa Maynila.
from she DAT Manila
‘She is from Manila.’
b. Galing sa Maynila siya.
from DAT Manila she
‘She is from Manila.’
(47) a. Takot siya sa kulog.
afraid she DAT thunder
‘She is afraid of thunder.’

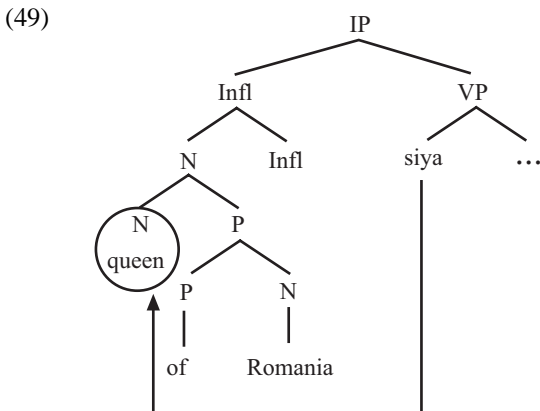
³⁹ There are also prosodic restrictions on the placement of this element. See Sityar 1989 for discussion.

- b. Takot sa kulog siya.
 afraid DAT thunder she
 ‘She is afraid of thunder.’

The analysis presented above provides a straightforward account of these placements. These constructions, like the predicative constructions in Irish, involve raising of the complex nominal to the highest inflectional head. Let us take the sentence in (45) as an example; the resultant structure from such (so-called) head movement would be the tree in (48) (irrelevant details omitted and XP and X⁰ notations added for convenience of the reader only).

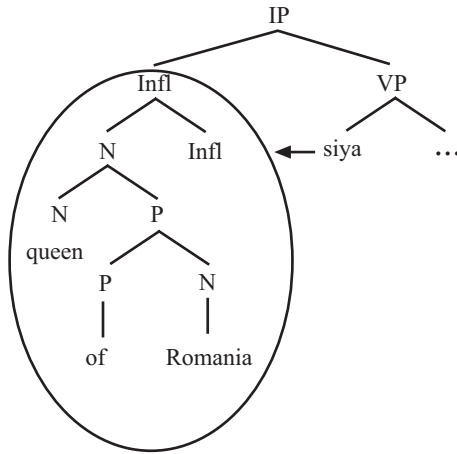


When faced with such a structure, the pronominal clitic is presented with two possible options for what constitutes the “initial” X⁰. First we have the option of the head *reyna* (‘queen’):



Or it can select the whole complex predicate *reyna sa Rumanya* ('queen of Romania'):

(50)



This is because both the head of the predicate and the complex predicate itself seem to be functioning like X^0 s.

4.2 Irish Construct State Nominals

Modern Irish has a genitive construction similar to the construct state nominals found in many Semitic languages. Examples of this construction, taken from Hebrew, Maltese Arabic, and Irish (all the data in this section is taken from Duffield 1996) are shown in (51).

(51) a. *Irish*

teach an fhir
house DET man-GEN
'the man's house'

b. *Hebrew*

ca'if ha-yalda
scarf DET-girl
'the girl's scarf'

c. *Maltese Arabic*

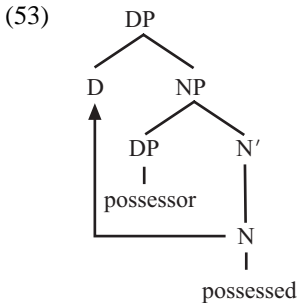
ras l-mara
head DET-woman
'the woman's head'

These constructions have several properties that define them as construct state nominals (henceforth CSN); I refer the reader to Duffield 1992, 1993, 1996; Guilfoyle 1988; Ritter 1987, 1988, 1995; Mohammed 1988; Borer

(1988)⁴⁰; and Fassi Fehri 1993, among others, for discussion of these properties. For now, I will simply take one of these properties as being relevant for defining a construct state: that of the mandatory lack of a definite determiner on the head noun:

- (52) a. *an teach an fhír
 b. *ha-ca'if ha-yalda
 c. *l-ras l-mara

To explain this data, Ritter (1987, 1988), Guilfoyle (1988), and Mohammed (1988) all independently propose that possessed nominals in Hebrew, Irish, and Arabic undergo head movement to a functional head in a manner completely parallel to verb raising in VSO structure (for a contrasting view, see Ernst 1992). This is schematized as in (53).



More complicated versions of this theory are expressed in Ritter 1995 and Duffield 1992, 1996. The “determinerhood” of the possessed N head is expressed in the special construct form of the noun that surfaces in the Semitic languages.

As noticed by Duffield (1992, 1993, 1996), the head-raising approach to CSNs runs into serious problems when it comes to Irish nominal modifiers. In the Semitic languages, adjectives and other modifiers of the head (possessed) noun follow the possessor DP ((54) is Maltese Arabic).

- (54) *Semitic*, [N_i DP Adj_i]
 sieq Willi l-leminij-a
 foot-F-SG Willy DET-right-F-SG
 ‘Willy’s right foot’

⁴⁰ Borer (1988) notes that in many ways CSNs in Hebrew bear strong similarity to compound Ns. She suggests that CSNs are really compounds (word-level units with respect to the phonology) that are formed in the syntax. Although I will not attempt to deal with Borer’s facts here, it should be noted that her analysis can be simply translated into the framework presented here: the CSN DP is interpreted as an X⁰ for the purposes of the phonological component.

In Irish, however, this is not the case. An adjective⁴¹ modifying the possessed head noun immediately follows that noun:

- (55) *Irish*, [N_i Adj_j DP]
 guth láidir an tsagairt
 voice strong the priest-GEN
 ‘the priest’s powerful voice’

This order is completely disallowed in the Semitic languages:

- (56) *Semitic*, *[N_i Adj_j DP]
 *sieq l-leminij-a Willi
 foot DET-right-F-SG Willy
 ‘Willy’s right foot’

A post-possessor adjective in Irish can only have an interpretation where the adjective modifies the possessor, never one where it modifies the head noun:

- (57) *Irish*, [N DP_i Adj_j], *[N_i DP Adj_j]
 guth an tsagairt láidir
 voice the priest-GEN strong
 ‘the strong priest’s voice/ *the priest’s strong voice’

The head-movement approach to CSN has problems accounting for the fact that adjectives modifying the possessed head noun must immediately follow the noun they modify in Irish but not in Hebrew.

This fact is easily accounted for in the framework presented here. Let us consider the option of possessed head NPs functioning like predicates in both Semitic and Irish. Like predicates, these Ns raise to functional projections (D), as was suggested by the various authors noted earlier, to check inflectional features. The difference between Irish and Semitic lies in what moves. In Irish, the whole N complex including the adjective⁴² raises just like a complex nominal predicate raises in copular clauses. In Hebrew on the

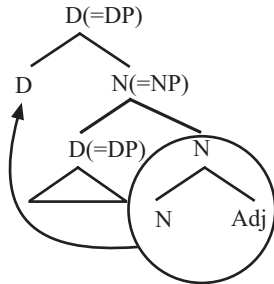
⁴¹ This is not true of full or reduced relative clauses, however. This is unsurprising if, as argued assumed in earlier work on NPs (see, for example, Chomsky 1981), relative clauses are adjoined to the whole DP. See Kayne 1994 for a contrasting view. The structure of such DPs would be something like:

[_{DP} [_D D+ [possessed Adj]_i] [_{NP} possessor t_i]] [_{CP} relative clause]]

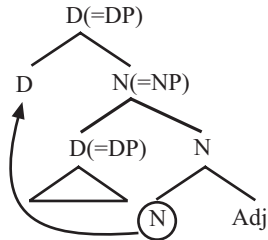
⁴² I am simplifying here somewhat in presuming that N-Adj order itself is underived. This is probably incorrect, and the N-Adj order is derived via some short movement (see, for example, the discussion in Duffield 1996) of the N head to some DP-internal functional projection. The p-marker containing this derived N-Adj order is the element which is targeted for movement to D⁰.

other hand, only the head noun can raise.^{43,44} Thus we get the following two constructions (I am omitting here details like the adjunction of ϕ -features):

(58) a. *Irish*



b. *Semitic*



Duffield (1996) offers a different explanation for these facts. He suggests that the difference in word-order results from the timing of the NP movement of the possessor DP for Case checking. I refer the reader to that work for more details. I present no empirical arguments against Duffield's analysis here. However, I would like to note that the behavior of complex nominal predicates in CSN and in copular constructions in Irish appears to be parallel. It thus seems that the present account, which unifies the two would be preferable to one that uses different mechanisms to account for the fact that in both cases nominals and their complements (complex predicates) appear in a position associated with traditional head movement.

⁴³ Presumably because in Hebrew, unlike Irish, nominals are not merged with ϕ -features in the syntax but are base generated with them attached. This may well be a parametric difference between the languages. This parametric difference may correspond to the fact that Hebrew also differs from Irish in terms of how much structure ("X⁰" or "XP") moves in copular constructions. See footnote 44 for more discussion.

⁴⁴ At first glance, the distinction here seems to be unlearnable. Null inflection is forcing the head movement of a complex element in Irish, but null inflection only moves the head in Hebrew. The problem is not insurmountable, however, if the movement of nominals to D is linked directly to the movement of nominals that derive predicate-first order in copular constructions where the morphology is overt.

4.3 The Modern Persian *Ezafe* Construction⁴⁵

Ghomeshi (1995) makes a claim that provides an interesting confirmation of the approach pursued here. She claims that the *ezafe* construction shown in (59) exemplifies a construction built in the syntax, by principles normally applying in the syntax, but which has some of the properties of an X^0 category. *Ezafe* is used to link modifiers to a head noun. In these examples, the *ezafe* marker is glossed EZ, following Ghomeshi.

- (59) a. shahr-e bozorg-i
 city-EZ big-INDEF
 'a big city'
 b. âqâ-ye qomeshi
 sir-EZ Ghomeshi
 'Mr. Ghomeshi'
 c. xordan-e âb
 drink-EZ water
 'the drinking of water'
 d. âb-e xordan
 water-EZ drink
 'drinking water'

Ghomeshi notes that the subconstituents of this construction have a number of properties associated with phrases and unlike compounds. For example, like phrases, and unlike compounds, they have phrasal phonology; they take more than one stress. Regular compound nouns also never show the *ezafe* marking:

- (60) a. âb portoqâl
 water orange (compound)
 'orange juice'
 b. âb-e sib
 water-EZ apple (*ezafe*)
 'apple juice'

Unlike subconstituents of phrases, on the other hand, the modifiers in *ezafe* construction cannot themselves be phrasal, they must be bare heads:⁴⁶

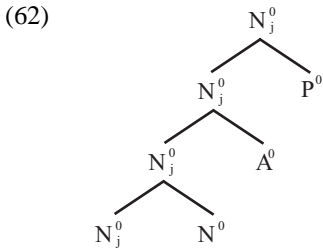
- (61) a. *kif-e in charm
 bag-EZ the leather
 'bag (made) of the leather'

⁴⁵ My thanks to Jila Ghomeshi for much helpful discussion in preparing this section.

⁴⁶ The exceptions to this are PPs and genitive NPs; see Ghomeshi 1995 for more discussion. Briefly, she argues that the PPs in this construction are really X^0 's and that the genitive NPs are, in fact, in a specifier position and are not adjoined to an X^0 category.

- b. *mard-e negarân bache-ha-shi-i
 man-EZ worried child-PL-POSS-INDEF
 ‘a man worried about his children’

Ghameshi proposes that subconstituents of the *ezafe* construction are formed in the syntax rather than in the lexicon, but that they are formed into a complex base-generated X^0 category (for a contrasting view, see Samiiian 1983, 1994). This is schematized abstractly in (62).



Evidence for this approach comes from the behavior of the indefinite clitic *-i*. This clitic attaches to heads and not to phrases. For example, it attaches to the head of the following appositive structure, not the whole phrase:

- (63) ketâb-i, bozorg-o qermez
 book-INDEF big-AND red
 ‘a book, big and red’

Similarly, it appears on the head noun of a restrictive relative clause construction, not on the whole phrases:

- (64) Ahmed-i [ke diruz âmad] injâ-st
 Ahmed-INDEF that yesterday came here-3SG
 ‘the Ahmed who came yesterday is here’ (as opposed to the one who came today)

In the *ezafe* construction, the *-i* clitic attaches to the final modifier of the construction:

- (65) [ketâb-e bozorg-e qermez]-i
 book-EZ big-EZ red-INDEF
 ‘a big red book’

Because the indefinite clitic normally attaches to X^0 s, it follows that the *ezafe* construction constitutes a single X^0 category, which the indefinite clitic may target.

Ezafe constructs, then, are constructions that have both properties of X^0 s and phrases. Notice that these differ from the other examples examined here, where the p-markers behave phrasally with respect to their own internal syntax and phonology, but externally they behave headlike. The *ezafe* constructs, on the other hand, are phonologically phrasal but morphologically and syntactically headlike (with respect to *-i* affixation and the phrasality of modifiers).

4.4 English Phrasal Verbs⁴⁷

Although the phenomenon is rare and seems to be limited to colorful and colloquial speech, English shows a phenomenon much like the cases I have discussed here:

- (66) a. He I-don't-cared his way out of the room.
 b. She I'm-from-New-Yorked her way into the men's room.

These constructions show clear instances of a sentence embedded in a word; the suffix *-ed* in both cases appears to be attaching to the whole sentence. Like the Irish cases, these are resistant to extraction and, like the Irish cases, there appears to be nothing forcing these to be islands:

- (67) a. *Who did he [*t*-don't-cared] his way out of the room?
 b. *Where did she [I'm-from-*t*-ed] her way out of the room?

Also like the Irish cases, the complex verbs here have an internal syntax like that of phrases but take verbal morphology:

- (68) a. Patrick [don't-take-that-kind-of-crap-from-anyone]-ed his brother.
 b. Traci [do-I-look-like-I'm-a-woman-who-does-windows]-ed her way out of a job.

In a system with no distinction between X^0 s and XPs, these constructions are entirely unproblematic. What is surprising is that they are not more common. (In section 5, I turn to the question of why such constructions are rare.)

4.5 Section Summary

Although they are clearly rare and marked, in this section I have shown a variety of constructions that show mismatches in terms of X^0 behavior and XP behavior for particular phrase markers. In fact, the list given here is hardly exhaustive. Related phenomena may well include the reanalysis facts discussed by Larson (1988) and Di Sciullo and Williams (1987); the

⁴⁷ My thanks to an anonymous reviewer who pointed these facts out to me.

agentivization process that seems to apply to sentences in Yoruba discussed by Pulleyblank and Akinlabi (1988); the Dutch resultative constructions discussed by Neeleman and Weerman (1993); and the phenomenon of Yiddish stem and particle constructions discussed by Gold (1994). Sadock (1991) gives a whole list of morphology/syntax mismatches that may well exhibit the same kind of phenomena. One could even speculate that there is a whole class of languages that regularly make use of the fact that there is no XP/X^0 distinction: this, of course, being the class of polysynthetic or incorporating languages discussed by Baker (1988, 1996). A full analysis of these phenomena lies well beyond the scope of this paper; but these cases, at least anecdotally, provide support for the notion that the distinction between X^0 s and XPs is not as clear-cut as would be predicted by current syntactic theory or as appears to be represented by languages like English.

The issue remains to be solved, however, as to why English and languages like it exhibit the outward appearance of having a distinction between phrases and X^0 s; and why the phenomena in this section appear to be relatively rare and marked. It is this question that I turn to now.

5. An Undetermined Theory of Phrasality

5.1 *Ambiguity in Phrasality*

Chomsky (1994, 1995b) notes that, in general, the kind of movement I have been discussing (adjunction of a phrase to a head) is disallowed. In fact, this kind of generalization is one of the primary motivations for positing a primitive head/phrase distinction. He claims that the reason that XPs never undergo head movement is because of the “natural assumption” that:

Morphology gives no output (so the derivation crashes) if presented with an element that is not an X^0 . (Chomsky 1994:18)

The biggest problem with this kind of account is the fact that, given Chomsky’s basic system less the terminality stipulation, there is no structural definition of what a phrase or a head is.

I propose simply that the notions of X^0 and XP have no status at all in the grammar. We can where necessary describe situations as having X^0 -like behavior, or XP-like behavior, but these terms are merely a convenience for describing certain properties of phrase markers. These properties (or behaviors) have independent motivation in the grammar (e.g., checking theory, semantic saturation, morphological concerns) and are not themselves primitives or determinants of syntactic behavior.

To avoid confusion, let us develop a new set of terminology to describe these behaviors. Let us call those processes and behaviors associated with X^0 s to be determined by W-principles (mnemonic for “word”) and those traditionally associated with XPs to be determined by P-principles

(mnemonic for “phrase”). An example of a W-principle would be the insertion of morphological items into a word. An example of a P-principle might be a binding principle. I’ll call those behaviors triggered by W-principles as W-behaviors, and those by P-principles are P-behaviors.

Although I would prefer to avoid adding yet an additional set of terms to the already confusing set of XP, phrase, word, head, and X^0 , it is necessary here in order to avoid any circularity in argumentation. I explicitly don’t want to call these “ X^0 ” or “XP” principles, because I am claiming that X^0 and XP have no status in the grammar. Giving names to these classes of principles may appear to give them some kind of reality or status; however, the reader should keep in mind that these are meant only as notational conveniences for the linguist and are not meant to represent any real categories in the mind of the speaker.

Turning back to the undetermined status of phrase markers when an element is exhibiting a behavior triggered by a W-principle, it is treated by at least some parts of the grammar as a traditional X^0 .⁴⁸ With respect to other components of the grammar, that *same* p-marker may exhibit behaviors associated with a P-principle and appear to be a traditional phrase. Complex nominal predicates in Irish exhibit the W-behavior of head movement and adjoin to functional categories just like verbs, thus they exhibiting a traditional X^0 behavior, with respect to this particular part of the grammar only. With respect to the phonological component, this same phrase marker shows P-behavior and is functioning like a traditional XP.

I propose here that the notions X^0 and XP are simply artifacts of the behavior of the p-marker with respect to other components of the computational system. For example, let us propose that the ability to bear tense and agreement features is a property only associated with elements that undergo head-to-head movement (i.e., is W-behavior), whereas the ability to bear Case features is a property associated with element that undergo traditional XP movement (i.e., is P-behavior). Notice that the relevant criterion for phrasal status here is how they behave, both with respect to bearing features and with respect to movement.

⁴⁸ The reader may, at this point, ask whether the program suggested here (i.e., deriving class W/P membership from behavior) is the most straightforward and simple solution to this kind of data. Instead, it might be claimed that what must be abandoned is the stipulation of Uniformity: the requirement that only heads may adjoin to heads, and only phrases may adjoin to (or move to the specifier of) phrases. It might be claimed that the data presented here argue not for an underdetermined theory of phrase markers but simply for the current system without a Uniformity condition. That is, rather than claim that p-markers are underdetermined in their phrality, why not simply allow phrases to adjoin to heads? Notice, however, that this characterization of the problem is simply a notational variant of the system provided here. The crucial distinction between “phrase” and “ X^0 ” lies in their distribution; phrases appear in “phrasal” positions, and X^0 s in “ X^0 ” positions. If we abandon the Uniformity stipulation, we lose the definition of what a “phrasal” or “ X^0 ” position is, thus the distributional characterization of phrases and X^0 s disappears. This in essence reduces to the underdetermined approach to phrase markers. See Brody 1996 for a contrasting view.

I suggest, partially following Chomsky, that the following are some possible criteria for the class status of a p-marker.⁴⁹ Recall that a p-marker can exhibit behaviors from either class at the same time (in other words, exhibit behaviors ambiguous between traditional XPs and X⁰s), so it is not the case that any one of the following properties are necessarily the definition of an XP or an X⁰. Rather, a p-marker can have any number of properties of both classes and thus behave as if it were both a phrase and an X⁰ at the same time.

(69) <i>Typical W-behaviors</i> θ -markers bear Tense and Agreement features (undergoes head movement) select for complements don't have reference input to/output from the morphology cannot cross a head ⁵⁰	<i>Typical P-behaviors</i> θ -marked bear Case features (undergoes XP movement) are selected for may have a real world reference not inputs/outputs of the morphology cannot cross a barrier
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The division of characteristics into these classes is accidental and may well be language specific. Again, the determination of whether a p-marker is a “phrase” or a “word” is externally determined by the other principles of the grammar, and is not a primitive.

We now have a straightforward account of why a “phraselike” element in Irish appears in a position associated with X⁰s: its phrasal status is undetermined (i.e., it is neither an X⁰ nor an XP) and it has properties imposed on it by principles of both W and P types.

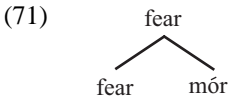
Let us consider the derivation of a simple sentence like that in (70).

- (70) Is *fear mór* Séan.
 COMP man big John
 ‘John is a big man.’

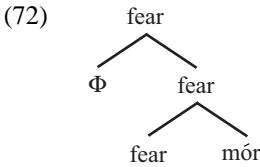
Using the operation of Merge, we take the two lexical items *fear* (‘man’) and *mór* (‘big’) and merge them into the set {*fear*, {*fear*, *mór*}}. (As noted in section 5.3, I’m adopting a Distributed Morphology approach, so the lexical items *fear* and *mór* should not be taken to include the actual morphological items. Instead, they are shorthand for bundles of lexically prespecified formal features, which are manipulated by the syntax. See Halle & Marantz 1993, 1994, for more discussion.)

⁴⁹ My account differs from Chomsky’s in the following crucial way: I allow projecting p-markers to behave ambiguously with respect to XP or X⁰ status. Chomsky seems to allow only nonprojecting elements (like clitics) this honor.

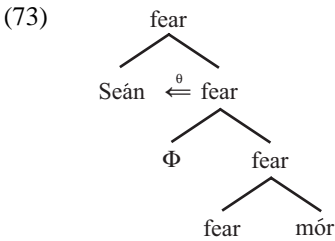
⁵⁰ By head here, I of course mean the p-marker that gives its category to its mother, not X⁰.



We now merge this with tense and agreement features (informally represented as Φ here).^{51,52} This is what distinguishes Irish from English; English does not allow its nominal predicates to merge with inflectional features. This is presumably a restriction on the English morphological component.⁵³



Because this element is acting as the predicate, it can be merged with an argument NP which it directly θ -marks:



Notice that the p-marker $\{fear, \{\Phi, fear\}\}$ is behaving in many respects like a traditional X^0 .⁵⁴ It exhibits the following W-behaviors: it bears inflectional features, and it θ -marks an argument. It can thus undergo head-to-head movement. The VP-like complex NP and its subject are merged with each of

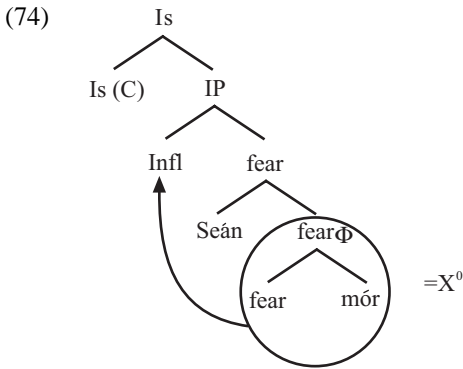
⁵¹ It is important to note that these are φ -features, not the actual T or Agr nodes themselves. The nodes are later merged with this structure.

⁵² As noted by Jelinek and Demers (1994), the Salish languages allow such features to be expressed overtly in the morphology.

⁵³ I have chosen to project *fear* as the head here rather than Φ . This was an arbitrary choice on my part and has no empirical consequences; the projection of Φ would work equally well.

⁵⁴ The structure I have presented here is not without problems. By making *fear* the head of the entire small-clause structure, I have in effect made all projections of *fear* lower than the topmost one invisible to the syntax, according to the assumptions of Chomsky (1995b). This is unfortunate in light of the fact that one of these lower projections undergoes the movement. It is more likely that the head of the element that θ -marks the subject argument is not the predicate itself, but some functional projection such as Bowers's (1990) PredP. I have abstracted away from such details in the trees in (47) and (48).

the functional categories in turn, where the inflectional features are checked. The predicate undergoes head movement, as schematized in (74).⁵⁵



This derives the correct word-order facts of Modern Irish copular constructions. This nominal predicate also exhibits P-behaviors: It has phrasal phonology (as shown by stress and a lack of compounding morphology). It has “phrasal” word order: Irish exhibits N Adj order in NPs:

- (75) an fear mór
 the man big
 ‘the big man’

but Adj N order in compound words:

- (76) an sean+mhathair
 the old+mother
 ‘the grandmother’

So the nominal predicate exhibits both W and P behaviors and is not clearly either a traditional XP nor an X^0 . It is ambiguous because of the external principle that applies to it. This is the foundation for my claim that X^0 and XP have no status in the grammar.

5.2 Explaining the “Alignment” Problem

By stripping away the basic notions of X^0 and XP, I have left open the question of why is it the case that, in the vast majority of cases, such as French, or even Irish verbal predicates, do the behaviors of p-markers seem to

⁵⁵ In many ways, this is similar to Larson’s (1988) reanalysis account of double-object constructions, but differs from it in that it is restricted by other mechanisms (to be discussed below).

consistently group into class W or class P. That is, why are ambiguous cases like Irish nominal predicates a rarity? For the most part, there seems to be a strict alignment, where a particular p-marker consistently exhibits behaviors from only one class.

Within the minimalist approach to grammar, the burden of proof on such questions (e.g., of whether or not there are theoretical constructs like X^0 and XP) lies squarely with those who claim the existence of such categories. Given the mismatch cases shown above, it is not clear to me that this burden has been met. As seen in section 4, there is an enormous range of cases from a wide variety of languages that show mismatches in traditional phrasality. This answer to the question is, of course, highly unsatisfying, so I would like to offer some speculations on why the epiphenomenon of the X^0 /XP distinction appears. I believe that the appearance of alignment within class W/P behaviors is a coincidental conspiracy of the constraints that force those behaviors. A complete theory of constraint interaction is beyond the scope of this paper, so I offer only a partial example of how this might work.

Let us assume that each component of the grammar (syntactic, phonological, and morphological) has operations that target p-markers in various configurations (where configuration is yet to be defined, but roughly corresponds to sisterhood or economy constrained c-command) and that these operations are always feature driven (Chomsky 1995a). That is, given a particular feature F, an operation O targets F in a particular configuration. Those situations where a p-marker appears to be aligning itself entirely within class W or class P are cases where all the relevant features of the p-marker are targeted in the same configuration. In this sense, the alignment within a class of behaviors is due to a conspiracy between constraints triggering the behaviors in a given class: that they all target the features in the same configuration. Note, however, that there is nothing fundamental underlying this conspiracy; it is merely coincidence that these operations pattern together.⁵⁶ Note also that the existence of this conspiracy is *not* the same thing as saying that there are X^0 and XP levels in the phrase structure. This is evidenced by the fact that mismatches do occur. That is, like the case of Irish nominal predicates discussed here, there are situations where operations from different classes apply to the same p-marker, or where operations from the same classes apply to different p-markers. These mismatches will almost always result in a structure that appears to be ambiguous in its phrasality; mitigating against the importance of the notions X^0 and XP to the grammar. As discussed in more detail below, with Irish nominal predicates, the operations of morphological insertion target the individual “words” in the complex p-marker, but the syntactic operations in this case (such as feature-driven head movement) target a less embedded node. The relative rarity of ambiguous phrasality is due to the fact that special situations *must* arise in order to cause the coincidental conspiracy to be

⁵⁶ For speculations on why coincidences like these occur, see Uriagereka 1998.

violated. One such situation is discussed below. It is important to note that, despite their rarity, these situations are important, because they open a window on the fact that the coincidental conspiracy of phrasality is just that—a coincidence. These rare cases are not merely exceptions to be waved away; instead they illustrate how our basic conception of a primitive (or even derived) notion of phrasality is flawed, and represents the interaction of other more basic constraints on the grammar.

To lend some concreteness to these speculations, let me offer one small explanation for why the conspiracy of constraints might be broken in Irish nominal predicates, but why it is met by Irish verbal predicates and English (in general). I derive this case from the feature-checking properties of the predicates involved. In particular, I claim that the difference between English and Irish is that complex predicates in Irish, but not English, are allowed to bear tense and agreement features.

N/Ds normally check their features in a specifier-head configuration with pied-piping of the whole phrase.⁵⁷ By contrast, elements bearing tense inflection (e.g., verbs) normally check their features in a head-head (or perhaps more accurately a sisterhood⁵⁸) configuration. What is unusual about Irish is that nominal predicates bear tense features. As such they are elements that normally involve pied-piping but are forced to check their features in a head-head configuration, thus giving rise to the apparent phrasality mismatch. Next we need an account of why certain features are checked in certain positions. Chomsky (1995a) presents one explanation (based on Emond's (1980) Structure Preserving Hypothesis), which crucially relies on phrasality driving the behavior of p-markers. Noonan (1997) proposes a more principled account of why certain features are checked in certain configuration. She suggests that specifier-head checking only occurs when there is a mismatch in feature type between the feature being checked and the head doing the checking. I have formulated this as the Configuration of Feature Checking Condition (CFCC; a proposal based on Noonan 1997).

- (77) *Configuration of Feature Checking Condition* (an output condition)
- i. mismatch in feature category will result in feature checking under local c-command (specifier/head⁵⁹)
 - ii. identity in feature category will result in feature checking under sisterhood (head/head)

⁵⁷ See section 4.2 for discussion of why this is not pied-piping for phonological reasons (as required by Chomsky 1995b), but is rather a purely syntactic phenomenon.

⁵⁸ My thanks to an anonymous reviewer for pointing out this possible simplification.

⁵⁹ An anonymous reviewer suggested this definition of the specifier-head configuration. This configuration involves a local (presumably economy constrained) c-command relation. See Epstein et al. 1998 for a discussion of deriving the c-command relation.

The feature category relevant here is [\pm predicate] (roughly: “a feature related primarily to the predicate rather than an argument”⁶⁰). Infl is of the category [+predicate] but Case features on the noun are [–predicate], thus Case checking will always apply via specifier-head checking (see (77a)). By contrast, both tense features on the predicate and Infl are [+predicate], there is no mismatch, and checking results in a head-head configuration (see (77b)). The reason that Irish nominal predicates show a mismatch is that they are, exceptionally, merged with tense features at the highest projection of the predicate rather than at the terminal. This is the language-specific property of Irish which gives rise to the unusual mismatch in apparent phrasality. The fact that a T feature is merged with an N at its highest projection is what causes the violation of the conspiracy (and thus provides evidence that the conspiracy is not a real part of the grammar).

This is only one possible place for a configuration mismatch to arise; the possibilities are unlimited. We might, and do, find examples of syntax-syntax mismatches, syntax-semantics mismatches, phonology-syntax mismatches, and morphology-syntax mismatches. So the ideas sketched above will have to be refined for each apparent mismatch.

5.3 *What Does the Morphology Do with these Complex P-Markers?*

So far, I have attempted to provide evidence for the fact that complex nominal predicates in Irish appear in positions traditionally associated with X^0 s. I have claimed that, under Chomsky’s bare theory of phrase structure, there is a straightforward account of these facts in that the complex nominal is, in fact, exhibiting both W and P behaviors. The problem remains, however, that internally these X^0 s have the word order, morphology,⁶¹ and phonology of phrases rather than words. This is potentially problematic. The question then is how does morphology know whether to map a particular p-marker into “word” or “phrase” morphology. I suggest that this follows straightforwardly from a modified version the theory of Distributed Morphology (Halle & Marantz 1993, 1994).⁶² In particular, I claim, contra Chomsky (1991, 1994, 1995b), Williams (1994), and Di Sciullo and Williams (1986), that morphological items are inserted after the syntax via a principle of Late Insertion. The fact that these X^0 s are surfacing with phrasal

⁶⁰ This feature is meant to capture Grimshaw’s (1991) notion of “extended projection.” That is, elements like Tense and Aspect are extended projections of the predicate, hence [+predicate]. NPs are (generally) not part of the extended projection, so are [–predicate]. The situation in Irish is a rarity, since the NP is playing an atypical [+predicate] role (although maintains its basic feature content.)

⁶¹ The evidence for this claim is very straightforward. In Irish, when an element has undergone some kind of word-formation, there is a practically invariable processes of lenition that applies to the initial consonant of the second (and subsequent) morphemes in the word. No such lenition is found in Irish complex nominal predicates.

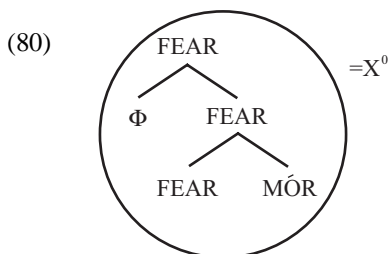
⁶² I differ from Halle and Marantz in assuming that the morphology can look at more than the terminal elements in a string and can look at such things as the node that dominates the terminals.

morphology is simply due to the fact that the vocabulary list of Irish morphemes contains no single morpheme or affixal elements equivalent to the complex X^0 s. In other words, these X^0 s surface as phrases because Irish simply lacks X^0 -level morphological equivalents to these complex p-markers. The morphology of Irish is thus forced to insert independent words under the terminal nodes dominated by this X^0 .

Simplifying greatly, the theory of morphology articulated here holds that syntax does not involve computation of the actual surface morphological items. Rather it computes nodes that consist of bundles of features (where bundles of features consist both of bundles of features inserted underlyingly, and feature bundles constructed by the syntax).⁶³ After Spell-out, principles of lexical insertion apply,⁶⁴ inserting morphological forms taken from a vocabulary list into the nodes representing the bundles of features. For example, in English, given a syntactic node that contains features associated with verbal features and agreement features, we can map a verbal root and an agreement suffix directly onto this:

(78) [[verb][3 sg]] → /wak+s/ “walks”

Now consider the case of the nominal predicates in Irish. Let us take a phrasal predicate like the *fear mór* (‘big man’) example given above. In this example, we have what would be an X^0 in traditional terminology, like the following (leaving off, for the moment, tense and agreement nodes). Bundles of features are represented informally here as the word in capital letters:



When the principles of lexical insertion try to realize this node, they find that there is no single vocabulary item matching this head. Similarly, there are no affixal forms equal to either FEAR or MÓR. The morphology is then left in a quandary; it cannot realize this node as a word-level unit because there are no affixes or roots that will realize the node as a word-level unit. Instead, the

⁶³ This proposal is also consistent with other nonlexicalist approaches to morphology, such as Anderson 1992.

⁶⁴ This is a gross oversimplification; other principles may apply (such as rules of fusion, fission, and impoverishment) before the actual lexical insertion. See Halle and Marantz 1993, 1994, and Noyer 1992 for more discussion.

morphology simply inserts two word level units (*fear* /f'ar/ and *mór* /mo:r/), just as it would if it were dealing with a traditional XP.

Given that the appearance of these X⁰-like nodes as phrases is due to what items are present in the vocabulary of Irish, we predict there may well be crosslinguistic variation in what nodes can surface as “words.” This is especially true under the view that the lexicon is the source of all idiosyncratic information and crosslinguistic variation. We might predict the existence of a language or a class of languages where, unlike Irish, some subset of complements (to nouns or otherwise) are affixal in nature, thus will surface as part of a complex predicate’s word structure. This class may very well be the set of incorporating languages (Baker 1988). Given crosslinguistic variation in what the status as roots or affixes of lexical items is, we expect crosslinguistic variation in what is treated as an X⁰ in a given language. On a first approximation, this seems to be borne out.

Note that the account given here is in direct contradiction to the morphological theory presented by Chomsky (1995a). In that work, Chomsky claims that the only elements which can undergo movement are formal features. Anything else that accompanies those features overtly, such as for example, phonetic content, does so through a process of Generalized Pied-Piping (GPP). GPP only occurs if there is some PF output condition that forces the phonetic content to move with the formal features. Although it might be tempting to propose an account of Irish complex predicate movement in these terms (i.e., there is some phonological constraint that requires nominal predicates in Irish bearing inflectional features to bring along their complements and specifiers), unfortunately, such an account is not consistent with the facts. Consider the fact that, as discussed earlier, the Irish complex predicates bear the internal syntax, morphology, and phonology of phrases, despite the fact that they are outwardly in a X⁰ position. It is hard to conceive of a phonological requirement that would force the GPP of the whole predicate phrase but leave that phrase with essentially phrasal phonology.⁶⁵

6. Conclusion

In this paper, I have shown that the notions XP and X⁰ are not primitives of the grammar, nor are they structurally derived. Rather, they are artifacts of how a p-marker behaves in the grammar. Restrictions on how a p-marker behaves should follow from other restrictions on the grammar, such as the restriction in English that nominal predicates cannot bear tense inflection. In Irish, this restriction does not hold, thus accounting for the X⁰-like behavior of an apparently phrasal constituent.

⁶⁵ Similar criticism can be leveled at Chomsky’s GPP approach with respect to movement of entire NPs via A-movement. In languages without Case concord throughout the NP, there seems to be no reason for the whole NP to move overtly to the Case-checking location.

To limit its length, I have left a wide number of details unresolved in this paper. However, I hope to have shown that the existence of X^0 and XP categories is more a notational convenience than a real part of the grammatical system. Owing to the interaction of possible feature mergers and mapping between components, the epiphenomenon of XPs and X^0 s are simply artifacts of other principles in the grammar.

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