Sandra Chung

Unbounded Dependencies in Chamorro Grammar

It has long been recognized that languages can exhibit unbounded dependencies, such as the one that holds between the *wh*-phrase and the gap in (1a–c):

(1) a. In which jar did he put the coffee ____?
   b. In which jar did Susie say that he put the coffee ____?
   c. In which jar do you think Susie said that he put the coffee ____?

The early generative literature (e.g. Ross (1967)) assumed that dependencies of this type were produced by unbounded transformations—transformations that could apply across a potentially unbounded distance. On the other hand, Chomsky (1973; 1977) has proposed that such dependencies are produced by successive cyclic transformations—transformations that are bounded by Subjacency but allowed to reapply successively to their own outputs.

The choice between the successive cyclic and unbounded methods of rule application has been the subject of controversy in transformational grammar (see Postal (1972), Bresnan (1976; 1977), Bresnan and Grimshaw (1978), Kayne and Pollock (1978), and others). Behind the controversy lies the assumption that it would be preferable if grammatical theory could account for all unbounded dependencies in the same way. Chomsky (1976, 316), for example, assumes that all transformations observe Subjacency, so that there are no transformations with unbounded domains of application. Although Bresnan (1977, 193, fn. 3) does not explicitly advocate a unified approach to unbounded dependencies, she does say: “An interesting alternative to eliminating unbounded transformations would be to eliminate iterative cyclic transformational applications to the same constituent.” Bresnan and Grimshaw (1978) in effect adopt this approach when

Chamorro is a Western Austronesian language. This study is the result of intensive fieldwork with the following speakers of Chamorro, whom I wish to thank: Priscilla A. Cruz (Guam dialect); Antonio Atalig (Rota dialect); Manuel F. Borja, Jose Bermudes, and Maria M. Rosario (Saipan dialect). Thirteen other speakers were kind enough to provide facts and/or answer questionnaires.

I also wish to thank the friends who commented on earlier drafts of this article: Stephen Anderson, Jeanne Gibson, Jorge Hankamer, David Perlmutter, Michael Rochemont, Alan Timberlake, and the participants in my 1980 syntax seminar at UCLA; Barbara Fox, Masao Johnson, and Mark Lehman.

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they identify both Wh Movement and Controlled Pro Deletion as unbounded in universal grammar.

This article examines facts from Chamorro that bear on the issue of how unbounded dependencies should be accounted for. I argue that wh-questions in Chamorro involve a Wh Movement rule that applies successive cyclically. At the same time, I argue that relative clauses involve a Controlled Pro Deletion rule distinct from Wh Movement that applies over an unbounded distance. Thus, the full range of facts argues that the theory of grammar must be rich enough to allow both successive cyclic and unbounded transformations.

The arguments in this article are based on certain systematic contrasts between the wh-question and relative clause constructions; it is these contrasts that I claim can be best accounted for if Wh Movement is successive cyclic but Controlled Pro Deletion is unbounded. However, the complexity of the facts makes it impractical to discuss both constructions simultaneously. Accordingly, I describe wh-questions first and turn to relative clauses later. One consequence of this order of presentation is that the first two-thirds of the article center around Wh Movement and the evidence for its successive cyclic character.

Section 1 gives a brief introduction to Chamorro syntax. Section 2 describes two rules involved in forming wh-questions: Wh Movement and the special Wh Agreement rule that accompanies it. Section 3 describes the operation of Wh Agreement in long-distance questions. Section 4 discusses several alternative accounts of the Wh Agreement facts, concluding ultimately that Wh Movement is successive cyclic but Controlled Pro Deletion is unbounded. Section 5 gives a further argument for this hypothesis, while section 6 presents conclusions.

The transformational framework adopted in this article is essentially the Extended Standard Theory; however, it differs from the versions of EST found in such works as Chomsky (1973; 1977) and Bresnan (1976; 1977) in two respects. First, it assumes that agreement rules, surface filters, and other statements of grammar can refer specifically to the traces left by movement rules (cp. Bresnan (1976)). Such an assumption seems necessary to describe the facts of sections 3–5. Second, it assumes that grammatical functions such as subject, direct object, and oblique appear at some point in the derivation as features on the NPs bearing them. While perhaps not absolutely necessary, this assumption makes it possible to state the Wh Agreement rule of section 2.2 in a maximally general way. Some arguments for representing oblique grammatical functions via NP features can be found in Bresnan and Grimshaw (1978); the reader is also referred to footnote 9 for further discussion of this matter.

1. Introduction to Chamorro Syntax

Chamorro is a verb-initial language with a system of proclitic case markers and a split ergative system of verb agreement.
1.1. Word Order

The basic surface word order is VSOX:

(2) Ha-fahan si Maria i sanhilo'-ña gi tenda.
    E3s-buy Unm the blouse-her Loc store
‘Maria bought her blouse at the store.’

For convenience I assume that VSOX is also the underlying word order.

The basic word order can be altered by several rules, including two with unclear discourse functions that I call Postposing and Topicalization. Postposing optionally moves the subject to clause-final position, creating a VOXS word order. This rule applies frequently for some speakers:

(3) Ha-fahan i sanhilo'-ña gi tenda si Maria.
    E3s-buy the blouse-her Loc store Unm
‘Maria bought her blouse at the store.’

Topicalization optionally moves the subject to the left of the verb, creating an SVOX word order. This rule is common in written and elicited Chamorro, less common in spontaneous discourse:

(4) Si Maria ha-fahan i sanhilo'-ña gi tenda.
    Unm E3s-buy the blouse-her Loc store
‘Maria bought her blouse at the store.’

1 The orthography used here retains certain features of the orthography adopted by the Marianas Orthography Committee in 1971. In particular, ch = [ts], y = [dz], ng = [ŋ], ' = [ʔ], ao = [ow], and ai = [ay]. It differs in that consonant gemination in certain possessive pronouns is indicated; also, the representation of particular vowels reflects their high-level phonetic values more closely. The six vowels are a (= [o]), a (= [a]), e, o, i, u. The two low vowels are distinguished only under primary stress; the nonlow vowels are lax in closed syllables. Except where indicated (by '), stress is penultimate.

The following abbreviations are used:

<table>
<thead>
<tr>
<th>Comp</th>
<th>complementizer</th>
<th>Obl</th>
<th>oblique case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dat</td>
<td>Dative Movement</td>
<td>p</td>
<td>plural</td>
</tr>
<tr>
<td>E</td>
<td>Ergative Agreement</td>
<td>Pass</td>
<td>Passive</td>
</tr>
<tr>
<td>Emp</td>
<td>emphatic marker</td>
<td>Pl</td>
<td>plural</td>
</tr>
<tr>
<td>excl</td>
<td>exclusive</td>
<td>Q</td>
<td>question particle</td>
</tr>
<tr>
<td>Fut</td>
<td>future</td>
<td>s</td>
<td>singular</td>
</tr>
<tr>
<td>GF</td>
<td>grammatical function</td>
<td>S</td>
<td>Subject Agreement</td>
</tr>
<tr>
<td>IN</td>
<td>infix -in-</td>
<td>UM</td>
<td>infix -um-</td>
</tr>
<tr>
<td>incl</td>
<td>inclusive</td>
<td>Unm</td>
<td>unmarked case</td>
</tr>
<tr>
<td>Ipf</td>
<td>imperfective</td>
<td>WH</td>
<td>wh-phrase</td>
</tr>
<tr>
<td>L</td>
<td>linker</td>
<td>1</td>
<td>first person</td>
</tr>
<tr>
<td>Loc</td>
<td>locative case</td>
<td>2</td>
<td>second person</td>
</tr>
<tr>
<td>Nmlz</td>
<td>nominalization</td>
<td>3</td>
<td>third person</td>
</tr>
<tr>
<td>Npl</td>
<td>nonplural</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mood is not explicitly indicated in the morpheme-by-morpheme glosses, but can be deduced from the agreement pattern and the presence or absence of pəra ‘future’.
1.2. Structure of the NP

Definite common nouns are preceded by the definite article *i*, while other types of nouns are not accompanied by an article.

Adjectives most commonly precede the head noun. They are joined to the head by some form of the "linker", a morpheme that occurs generally in modifier–head constructions. Possessors follow the head noun. A pronominal possessor surfaces as a possessive pronoun suffixed to the head:

(5)  
i kareta-mu  
the car-your  
‘your car’

Other possessors are either joined directly to the head by the linker or else are copied by a possessive pronoun:

(6) a.  
i kareta-n Maria  
the car-L  
‘Maria’s car’

b.  
i kareta-ña si Maria  
the car-her Unm  
‘Maria’s car’

Definite NPs are preceded by a case marker that indicates their lexical properties and grammatical function, while indefinite NPs are not marked for case. The case markers for definite NPs are as follows:

(7) |         | Unmarked | Oblique | Local |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Noun</td>
<td>—</td>
<td>ni</td>
<td>gi</td>
</tr>
<tr>
<td>Proper Noun</td>
<td>si</td>
<td>as</td>
<td>gias</td>
</tr>
<tr>
<td>Pronoun</td>
<td>—</td>
<td>nu</td>
<td>giya</td>
</tr>
</tbody>
</table>

The markers distinguish among common nouns, proper nouns, and pronouns, as well as three cases: local, oblique, and unmarked. The local case marks locations in time or space:

(8) Man-balálahad i lalahi siha gi gima’ Jose.  
Pl-play +cards +Ipf the men Pl Loc house +L  
‘The men are playing cards at Jose’s house.’

The oblique case marks various types of oblique, including instruments, passive agents, the complements of certain stative verbs, and “former” direct objects (i.e. NPs that

2 The oblique marker for common nouns is *ni* in the Guam dialect, *nu* in the Saipan dialect, and *nai* in the Rota dialect. The oblique marker for proper nouns is *giyas* or *as* in the Saipan dialect and for certain speakers of the Guam dialect. In all three dialects the definite article *i* merges with a preceding local case marker; it merges with a preceding oblique case marker obligatorily in the Rota dialect and optionally in the other dialects. Merged definite articles are not identified in the morpheme-by-morpheme glosses.
were direct objects at some level but have been displaced by Dative Movement or Antipassive—2-chômeurs in Perlmutter and Postal’s (1977) framework). It is also the case used for direct objects of nominalizations. (9) illustrates the oblique case for a passive agent:

(9) Ma-lipara si nana-hu ni lalahi siha.
   Passnotice Unm mother-my Obl men Pl
   ‘My mother was noticed by the men.’

The unmarked case is used for NPs with other grammatical functions, including subjects, direct objects, topicalized or clefted NPs, possessors copied by a possessive pronoun on the head (see (6b)), and obliques that surface as objects of prepositions.

(10) Si Antonio ha-lasa i patas Carmen.
   Unm E3s-rub the foot +L
   ‘Antonio rubbed Carmen’s foot.’

1.3. Structure of the Verb

Verbs are morphologically marked for aspect and mood. Imperfective aspect is indicated by partial reduplication of the verb, whereas perfective aspect is unmarked. Irrealis mood is often indicated by the marker pāra ‘future’ preceding the verb, whereas realis mood is unmarked. In addition, the difference between moods is reflected in the three types of agreement exhibited by the verb: Number Agreement, Ergative Agreement, and Subject Agreement.

Number Agreement is realized by affixes that distinguish between realis and irrealis moods. This type of agreement occurs only in (cycle-final) intransitive clauses, where it is triggered by the (cycle-final) subject:

(11) Number Agreement

<table>
<thead>
<tr>
<th>Nonplural</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realis</td>
<td>-um/-</td>
</tr>
<tr>
<td>Irrealis</td>
<td>—</td>
</tr>
</tbody>
</table>

The intransitive clauses of (12a,b) exhibit Number Agreement:

(12) a. S-um-ísígi ha’ mo’na gi chālan si Pedro.
   Npl-continue + Ipf Emp forward Loc road Unm
   ‘Pedro is continuing along the road.’

b. Man-ísígi ha’ mo’na gi chālan i turis siha.
   Pl-continue + Ipf Emp forward Loc road the tourist Pl
   ‘The tourists are continuing along the road.’

3 One of the markers of nonplural Number Agreement in the realis is the infix -um-. Chamorro has several infixes, all of which have the underlying shape -VC- and are inserted before the first vowel of the stem. In stems beginning with nasals or liquids, the consonant of the infix metathesizes with the initial nasal or liquid, with the result that the infix shows up as a prefix with the shape CV-.
Ergative Agreement and Subject Agreement are distributed complementarily according to mood, with Ergative Agreement occurring in the realis and Subject Agreement in the irrealis. Ergative Agreement is so-called because it is triggered only by the (cycle-final) subjects of transitive clauses:

(13) Ergative Agreement (realis)

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>hu-</td>
<td>ta- [incl]/in- [excl]</td>
</tr>
<tr>
<td>2nd</td>
<td>un-</td>
<td>in-</td>
</tr>
<tr>
<td>3rd</td>
<td>ha-</td>
<td>ma-</td>
</tr>
</tbody>
</table>

The realis transitive clause of (14) exhibits Ergative Agreement:

(14) Ha-bisita yu’ si Pedro.
     E3s-visit me Unm
     ‘Pedro visited me.’

Subject Agreement is so-called because it is triggered by all (cycle-final) subjects, whether the clauses in which they occur are transitive or intransitive:

(15) Subject Agreement (irrealis)

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>(bai) u-</td>
<td>(u)ta- [incl]/(bai) in- [excl]</td>
</tr>
<tr>
<td>2nd</td>
<td>un-</td>
<td>in-</td>
</tr>
<tr>
<td>3rd</td>
<td>u-</td>
<td>u- [intrans]/uma- [trans]</td>
</tr>
</tbody>
</table>

The irrealis clauses of (16) exhibit Subject Agreement:

(16) a. Pära u-bisita yu’ si Pedro.
      Fut S3s-visit me Unm
      ‘Pedro is going to visit me.’

b. Pära u-fan-maigu’ i famagu’un.
      Fut S3p-Pl-sleep the children
      ‘The children are going to sleep.’

The distribution of the three types of agreement is schematized in the following chart:

(17) 

<table>
<thead>
<tr>
<th></th>
<th>Transitive</th>
<th>Intransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realis</td>
<td>Ergative Agreement</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>Number Agreement</td>
</tr>
<tr>
<td>Irrealis</td>
<td>Subject Agreement</td>
<td>Subject Agreement</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>Number Agreement</td>
</tr>
</tbody>
</table>
1.4. Pronoun Drop

Pronouns that are subjects or direct objects are often deleted by a process referred to here as Pronoun Drop. This discourse-sensitive process exhibits the following conditions.

Pronouns that are transitive subjects are always deleted:

(18) Ha-li’i’ (*gui’/guiya) i famagu’un.
    E3s-see he the children
    ‘He saw the children.’

Pronouns that have triggered Subject Agreement are usually, but not always, deleted:

(19) Pāra u-fata’chung (?gui’) papa’ gi hālum un minutu.
    Fut S3s-sit he down Loc inside a minute
    ‘He is going to sit down in a minute.’

Other pronominal subjects and direct objects are optionally deleted.

1.5. Passive and Dative Movement

Chamorro has several rules that appear to alter the grammatical functions of the clause and which might conceivably be treated as instances of NP Movement. For expositional reasons I will refer to them, somewhat less generally, as Passive and Dative Movement.

Passive turns the direct object into the subject and the underlying subject into an oblique (= passive agent). The verb is marked with the prefix ma- or the infix -in-, depending on whether the passive agent is plural or singular. Passive relates (20b) to (20a):

(20) a. Ha-sodda’ si Juan si Maria nigap.
    E3s-find Unm Unm yesterday
    ‘Juan found Maria yesterday.’

b. S-in-edda’ si Maria as Juan nigap.
    Pass-find Unm Obl yesterday
    ‘Maria was found by Juan yesterday.’

Passive clauses are intransitive, as shown by the fact that their derived subject triggers Number Agreement. In the irrealis mood the derived subject triggers Subject Agreement as well:

(21) Pāra ta-fan-ma-lalatdi ni mañainâ-hu.
    Fut Slp-Pl-Pass-scold Obl parents-my
    ‘We are going to be scolded by my parents.’

Dative Movement turns the indirect object or benefactive of a transitive clause into the direct object, displacing the original direct object to an oblique. The verb is sometimes marked with an allomorph of the suffix -i. Dative Movement relates (22b) to (22a):
(22) a. In-na’hanao i paketi pāra i parentis-mami. 
   Elp-send the package to the relative-our
   ‘We sent the package to our relative.’

b. In-na’hanao-gui i parentis-mami ni paketi. 
   Elp-send-Dat the relative-our Obl package
   ‘We sent our relative the package.’

See Crain (1979) for arguments within a Relational Grammar framework for the existence of this rule, and Gibson (1980) for discussion of the conditions governing the appearance of -i.

1.6. Embedded Clauses

Finally, embedded clauses have basically the same morphology as matrix clauses, but are introduced by an overt complementizer. Two common complementizers are na and ni:

(23) a. Kulan in-sienti na mahalang i che’lu-nmami nu hāmi. 
   like Elp-feel Comp miss the sibling-our Obl us
   ‘We sort of feel that our sister misses us.’

b. In-istotba si Juan ni hu-yūyuti’ ha’ i tiempo-ku. 
   Pass-disturb Unm Comp Els-waste +Ipf Emp the time-my
   ‘Juan was disturbed that I was wasting my time.’

The conditions governing complementizer choice are not clear. The complementizers na and ni typically delete when followed by the future marker pāra or certain types of nominalizations. This point will be useful below.

2. Wh Movement and Wh Agreement

There appear to be two processes involved in the derivation of wh-questions in Chamorro: Wh Movement and a special agreement rule that accompanies it. Section 2.1 deals with Wh Movement and section 2.2 with Wh Agreement.

2.1. Wh Movement

At the surface, the wh-phrase of most wh-questions in Chamorro is to the left instead of in the normal NP position to the right of the verb. Consider the following examples, in which a blank indicates the expected position of the wh-phrase:

(24) a. Hayi na famalao’an man-ma’pus ____ ?
   who? L women Pl-leave
   ‘Which women left?’

b. Hafa pāra u-fahan si Maria ____ gi tenda? 
   what? Fut S3s-buy Unm Loc store
   ‘What is Maria going to buy at the store?’
c. Hayi ha-na’i si Rita ___ ni lepblu?  
who? E3s-give Unm Obl book  
‘Who did Rita give the book (to)?’

d. Hafa si Juan ha-fanu’i si nana-ña ____?  
what? Unm E3s-show Unm mother-his  
‘What did Juan show his mother?’

I assume that the $wh$-phrase in questions such as (24a–d) originates to the right of the verb and is then moved leftward, into COMP, by $Wh$ Movement:

(25)

```
S'
  └── COMP
    └── S
        └── WH
```

Another possible hypothesis is that the questions in (24) do not involve movement. Rather, the $wh$-phrase would be base-generated at the left, under COMP, and would subsequently be coindexed with a PRO to the right of the verb:

(26)

```
S'
  └── COMP
    └── S
          └── WH
              └── PRO
```

In general, it turns out to be difficult to argue that the $Wh$ Movement hypothesis is superior to the base hypothesis in (26). One source of the difficulty is that both hypotheses can be extended more or less naturally to cover the other types of $wh$-questions in Chamorro. For instance, many speakers allow questions in which an oblique $wh$-phrase surfaces to the right of the verb, in the expected position of NPs:

(27) Ma’asi’ hao pāra hayi?  
sorry you for who?  
‘Who do you feel sorry for?’

Examples like these can be described within the $Wh$ Movement hypothesis by claiming that the movement rule has simply failed to apply; but they could be described within the base hypothesis by claiming that not all $wh$-questions have the derivation sketched in (26). Assuming that $wh$-words have the freedom of occurrence of other lexical nouns, (27) could arise from the same source as ordinary declarative sentences.
Further, Chamorro does not allow preposition stranding, so questions in which the *wh*-phrase is the object of a preposition have the entire prepositional phrase, not merely its object, at the left:

(28) Ginin manu na fandanggu na man-máfattu edyu siha na taotao?
    from where? L wedding Comp Pl-come +1pf those Pl L person
    'From which wedding are those people coming?'

The *Wh* Movement hypothesis can produce sentences like (28) if the movement rule is allowed to affect NPs or PPs; but the base hypothesis could also produce them if either NPs or PPs were allowed to be base-generated under COMP. Such a move would make it necessary to ensure that a PP under COMP bore the same grammatical function as the PRO-PP with which it was coindexed; however, it seems likely that some independently necessary device would accomplish this. For instance, the universal condition proposed by Bresnan and Grimshaw (1978, 349), that "coindexed nodes must agree in grammatical features", would correctly prevent the Chamorro equivalent of questions such as *From which plate did you put the bananas?*

Perhaps the strongest evidence in Chamorro for the *Wh* Movement hypothesis as opposed to the base hypothesis is provided by the facts to be discussed below, which establish significant differences between the rule responsible for the gaps in *wh*-questions and a coindexing rule that operates over a variable. In anticipation of this, I will continue to assume that the questions in (24) are derived from structure (25) via *Wh* Movement. In stating this rule, I follow Bresnan (1970) in assuming that S' \( \rightarrow \) COMP S, that there is a + *wh* complementizer, and that *Wh* Movement involves movement of the *wh*-phrase into COMP. I further assume that movement of the *wh*-phrase leaves behind a trace coindexed with it, as proposed by Chomsky (1977). *Wh* Movement is then stated as follows:4

(29) \([\text{COMP} + \text{wh}] \times \text{WH} \ Y \rightarrow [\text{COMP} \ \text{WH}_i] \times X \ t_i \ Y\]

2.2. *Wh Agreement*

Depending on the grammatical function of the moved *wh*-phrase, the clauses affected by *Wh* Movement exhibit special agreement morphology: the verb may be nominalized and/or certain infixes may be attached to it. In this subsection I first describe the special morphology and then formulate an agreement rule to account for it.

2.2.1. *The Facts of Agreement.* Put roughly, the agreement morphology of questions is determined by whether the moved *wh*-phrase is a subject, a direct object, or an oblique when *Wh* Movement applies.

If the moved *wh*-phrase is the subject of a realis transitive clause and therefore is

\[\text{ Mov ed } \text{*wh*}-\text{phrases that are locatives or PPs are followed by an overt complementizer, as in (28). To accommodate this, I propose that *Wh* Movement adjoins the *wh*-phrase to the left of the complementizer within COMP and that the complementizer deletes following a *wh*-phrase that is neither a locative nor a PP.} \]
supposed to trigger Ergative Agreement (see section 1.3), then that agreement is exceptionally realized as the infix -um-.\(^5\)\(^6\) Compare the questions in the (a) examples below with their declarative counterparts in (b):

(30) a. Hayi f-um-a’gasi i kareta?
   who? UM-wash the car
   ‘Who washed the car?’

   b. Ha-fa’gasi si Juan i kareta.
   E3s-wash Unm the car
   ‘Juan washed the car.’

(31) a. Hayi na famagu’un p-um-atik i bola?
   who? L children UM-kick the ball
   ‘Which children kicked the ball?’

   b. I famagu’un ma-patik i bola.
   the children E3p-kick the ball
   ‘The children kicked the ball.’

If the moved wh-phrase is the subject of some other type of clause when Wh Movement applies—i.e. an intransitive or irrealis clause—then there is no special morphology:

(32) a. Hayi mámaigu’?
   who? sleep + lpf
   ‘Who is sleeping?’

   b. Mámaigu’ i neni.
   sleep + lpf the baby
   ‘The baby is sleeping.’

(33) a. Hayi pāra u-fa’gasi i kareta?
   who? Fut S3s-wash the car
   ‘Who is going to wash the car?’

   b. Pāra u-fa’gasi si Juan i kareta.
   Fut S3s-wash Unm the car
   ‘Juan is going to wash the car.’

\(^5\) Elsewhere in Chamorro grammar, the exceptional Ergative Agreement marker -um- shows up only in the complement clause of Equi constructions, as in (i):

(i) Malagú’ gui’ b-um-isita si Rita.
   want he UM-visit Unm
   ‘He wants to visit Rita.’

This occurrence of -um- could be subsumed under the Wh Agreement rule in (43) if one assumed that the interpretive rule that operates in Equi constructions reduces a complement subject PRO to a trace coindexed with the controller.

\(^6\) The reader is warned that there is some homophony among the grammatical morphemes in Chamorro. Specifically, there is a Number Agreement marker -um- and a special Ergative Agreement marker -um-; a Passive infix -in- and a nominalization infix -in-; a Number Agreement marker man- and an Antipassive marker man-. It can be shown that the members of each of these homophonous pairs are in fact different morphemes, using facts of morpholexical and morphosyntactic distribution too detailed to describe here.
If the moved *wh*-phrase is a direct object or “former” direct object at all levels of derivation before *Wh* Movement, then optionally the verb can be nominalized; if nominalized, it is marked with the infix *-in*.-  
8 Subjects of nominalized verbs are realized as possessors, while their direct objects appear in the oblique case. Nominalization has occurred in (34a), where the *wh*-phrase was a direct object at all levels of derivation before *Wh* Movement:

(34) a. Hafa f-in-ahan-ña si Maria gi tenda?
what? IN-buy + Nmlz-her Unm Loc store
‘What did Maria buy at the store?’

b. Ha-fahan si Maria i sanhilo’-ña gi tenda.
E3s-buy Unm the blouse-her Loc store
‘Maria bought her blouse at the store.’

Nominalization has also occurred in (35a), where the *wh*-phrase was first a direct object and then a “former” direct object displaced by Dative Movement (see section 1.5):

(35) a. Hafa si Maria s-in-angan-e-nña as Joaquin?
what? Unm IN-say-Dat + Nmlz-her Obl
‘What did Maria tell Joaquin?’

b. Si Maria ha-sangan-i si Joaquin ni istoria.
Unm E3s-say-Dat Unm Obl story
‘Maria told Joaquin the story.’

If the moved *wh*-phrase is a direct object at some level of structure and the nominalization strategy is not chosen, then the verb exhibits no special morphology:

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7 More accurately, nominalization is possible if the only grammatical function that the *wh*-phrase bears to the clause is direct object or former direct object. The condition is stated this way because nominalization is not possible if the *wh*-phrase is a derived direct object created by Dative Movement, or if it is a direct object that has been turned into subject by Passive. For more detailed discussion of this condition in a Relational Grammar framework, see Gibson (1980).

8 There are two reasons why I refer to the constructions in (34)–(35) and (37)–(39) as involving nominalization. First, the nominalized verb and its dependents evidently constitute an NP, since the subject is realized as a possessor and the direct object occurs in the oblique rather than the unmarked case. Second, Chomsky’s (1970) criteria for distinguishing nominalizations from derived nominals pick out these constructions as instances of the former rather than the latter. For instance, like nominalizations but unlike derived nominals, the constructions in (34)–(35) and (37)–(39) cannot appear freely in the full range of NP structures; they also give evidence of being fed by transformations such as Passive and Dative Movement.

Finally, it should be noted that these nominalizations do not occur frequently outside of the *Wh* Agreement constructions discussed here. In particular, most verbs subcategorized for a sentential complement will not allow a nominalization to fill that slot; compare (i) and (ii):

(i) Ha-sangan-i hám si Antonio na ha-punu’ i lálu’ siha.
E3s-say-Dat us Unm Comp E3s-ill the fly Pl
‘Antonio told us that he killed the flies.’

(ii) *Ha-sangan-i hám si Antonio ni puno’-ña ni lálu’ siha.
E3s-say-Dat us Unm Obl kill + Nmlz-his Obl fly Pl
(Antonio told us about his killing the flies.)

This point is relevant to the discussion of section 3.
(36) a. Hafa ha-fahan si Maria gi tenda?
what? E3s-buy Unm Loc store
‘What did Maria buy at the store?’
b. Hafa si Maria ha-sangan-i si Joaquin?
what? Unm E3s-say-Dat Unm
‘What did Maria tell Joaquin?’
c. Hayi si Juan ha-tugi’-i ni kätta?
who? Unm E3s-write-Dat Obl letter
‘Who did Juan write the letter (to)?’

Finally, if the moved wh-phrase is one of several types of obliques when Wh Movement applies—instrument, extent phrase, comitative, or the complement of a stative verb—then the verb must be nominalized but is not marked with -in-:

(37) a. Hafa puno’-mu ni lâlu’?
what? kill + Nmlz-your Obl fly
‘What did you kill the fly with?’
b. Hu-punu’ i lâlu’ ni niús.
Els-kill the fly Obl newspaper
‘I killed the fly with the newspaper.’
(38) a. Hayi pâra akuentuse-nña i haga-mu?
who? Fut speak + Nmlz-her the daughter-your
‘Who is your daughter going to speak with?’
b. Pâra u-ãkuentusi i haga-hu yan si Jose.
Fut S3s-speak the daughter-my with Unm
‘My daughter is going to speak with Jose.’
(39) a. Hafa ma’a’ñao-mu?
what? fear + Nmlz-your
‘What are you afraid of?’
b. Ma’a’ñao yu’ ni ga’lagu.
fear I Obl dog
‘I am afraid of the dog.’

2.2.2. The Agreement Rule. The fact that the special morphology just described intersects with Ergative Agreement, as in (30)–(31), suggests that it itself is best viewed as a kind of agreement process: essentially, the verb “agrees” in grammatical function with a wh-phrase that has been moved across it by Wh Movement.

This rough formulation of the conditions under which Wh Agreement occurs is supported by additional facts. To begin with, the verb does not agree with a wh-phrase that occurs to its right in surface structure. The wh-phrase in (40a) is a comitative; since it has not undergone Wh Movement, oblique Wh Agreement does not appear on the verb:
(40) a. Parehu yan hayi?
similar with who?
‘Who does (she) look like?’
b. *Parehu-ña yan hayi?
similar + Nmlz-her with who?
(Who does she look like?)

The *wh*-phrase in (41a) is the direct object of an embedded question. Since it has undergone Wh Movement in the embedded clause but not the matrix clause, direct object Wh Agreement can appear on the embedded verb, but not the matrix verb:

(41) a. Ha-sangan-i yu’ si Maria [hafa f-in-ahan-ña gi tenda].
E3s-say-Dat me Unm what? IN-buy + Nmlz-her Loc store
‘Maria told me what she bought at the store.’
b. *S-in-angan-e-nña si Maria nu guahu [hafa
IN-say-Dat + Nmlz-her Unm Obl me what?
f-in-ahan-ña gi tenda].
IN-buy + Nmlz-her Loc store
(Maria told me what she bought at the store.)

Further, the verb does not agree with a *wh*-phrase on the left that has never been moved across it. Consider the complex sentence (42a), in which the moved *wh*-phrase was originally the subject of the matrix clause. Because only the matrix verb lies on the path between the origin and the destination of the *wh*-phrase, only the matrix verb exhibits subject Wh Agreement:

(42) a. Hayi na lahi s-um-angan-i hao [na ha-konni’ yu’ pāra i gima’-who? L boy UM-say-Dat you Comp E3s-take me to the house-
mami nigap]?
our yesterday
‘Which boy told you that he took me home yesterday?’
b. *Hayi na lahi s-um-angan-i hao [na/ni k-um-onni’ yu’ pāra i gima’-who? L boy UM-say-Dat you Comp UM-take me to the house-
mami nigap]?
our yesterday
(Which boy told you that he took me home yesterday?)

One can imagine several ways of formulating the generalization that the verb exhibits Wh Agreement with a *wh*-phrase that has been moved across it. Here I propose that Wh Agreement is triggered by the trace of the moved *wh*-phrase. This proposal requires us to assume that the traces left by Wh Movement can somehow be distinguished from traces left by other rules, such as Passive, since the latter do not trigger the agreement rule. I will assume without further comment that such a distinction can be made. The proposal further requires us to develop a method of representing the grammatical func-
tions of NPs, since these are the notions with respect to which the verb is going to agree. Suppose we assume that grammatical functions such as subject, direct object, and oblique appear on the NPs bearing them as features: [+subject], [+direct object], and [+oblique]. Suppose we further assume a convention whereby wh-traces are assigned the same grammatical function as their antecedents. We can then give a first statement of Wh Agreement:

\[(43)\]  
\[
\begin{array}{cccccc}
X & V & (NP)^* & t & Y \\
1 & 2 & 3 & 4 & 5 & \rightarrow 1 & 2 & 3 & 4 & 5 \\
\end{array}
\]  
\[
[+GF \alpha]
\]

where \(t\) = the trace of Wh Movement, and \(\alpha\) ranges over the grammatical functions subject, direct object, oblique.

This rule indexes the verb for the grammatical function borne by the trace of a moved wh-phrase.

The actual surface realization of agreement will be produced by a morphological spellout rule that I give informally below:

\[(44)\]  
\[
\begin{array}{ll}
(a) & \text{If a verb is [+subject], then its Ergative Agreement (if any) is realized by -}um-. \\
(b) & \text{(Optional) If the verb is [+direct object] and the wh-trace controls no other trace, then nominalize and attach -}in-. \quad \text{10} \\
(c) & \text{If the verb is [+oblique], then nominalize.} \\
(d) & \text{Otherwise, Wh Agreement has no overt phonetic realization.}
\end{array}
\]

3. Wh Agreement in Long-Distance Questions

We now turn to the central descriptive problem of this article: how Wh Agreement applies to questions in which the wh-phrase has passed through more than one clause.

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9 There are several approaches that one might take to realize the assumption that grammatical functions are, at some point in the derivation, represented as features on the NPs bearing them.

For instance, one might assume that the feature [+oblique] is assigned in the base but that the features [+subject] and [+direct object] are assigned later, after relation-changing rules like Passive and Dative Movement have applied. If the latter type of feature assignment were ordered before stylistic movements such as Postposing (see section 1.1), it could perhaps be stated in terms of linear order. (Stating the rule in terms of immediate dominance would be a problem, given the assumption that Chamorro is underlingly VSO.)

Alternatively, one might assume that [+subject], [+direct object], and [+oblique] were all assigned in the base, perhaps via the subcategorization frames of particular verbs. One would then need to build into the grammar a feature-changing mechanism that would be sensitive to relation-changing rules like Passive. This mechanism would ensure, for instance, that an NP that was [+direct object] in the input to Passive emerged as [+subject] in the output to that rule. Adopting a mechanism of this sort would be roughly equivalent to incorporating into transformational grammar Perlmutter and Postal's (1977) theory of relation-changing rules.

I take no position on the issue of whether either of these alternatives, or some entirely different one, best executes the basic assumption.

Observe that whatever feature-assignment procedure is adopted will need to assign [+direct object] both to (cycle-final) direct objects and to "former" direct objects displaced by Dative Movement.

10 The clause and the wh-trace controls no other trace is intended to prevent nominalization from being triggered by derived direct objects created by Dative Movement. See footnote 7.
Consider, for instance, the long-distance questions in (45), which are given alongside their declarative counterparts in (46):

(45) a. Hafa um-istotba hao [ni malago'-ña i lahi-mu ___]? what? UM-disturb you Comp want + Nmlz-his the son-your ‘What does it disturb you that your son wants?’

b. Hayi si Juan ha-sangan-i hao [b-um-isita ___ si Rita]? who? Unm E3s-say-Dat you UM-visit Unm ‘Who did Juan tell you visited Rita?’

c. Hafa s-in-angan-ña si Juan [păra godde-tta ni what? IN-say + Nmlz-his Unm Fut tie + Nmlz-our Obl chiba ___ ]? goat ‘What did Juan say that we should tie up the goat with?’

d. Hayi ma’a’ŋao-ña si Manuel [păra u-lalatdi ___ ]? who? fear + Nmlz-his Unm Fut S3s-scold ‘Who is Manuel afraid to scold?’

(46) a. Ha-istotba hăm [na malāgu’i lahi-nmami ni kareta]. E3s-disturb us Comp want the son-your Obl car ‘It disturbs us that our son wants the car.’

b. Si Juan ha-sangan-i yu’ [na un-bisita si Rita]. Unm E3s-say-Dat me Comp E2s-visit Unm ‘Juan told me that you visited Rita.’

c. Ha-sangan si Juan [na păra ta-goddi i chiba ni esti na tali]. E3s-say Unm Comp Fut Slp-tie the goat Obl this L rope ‘Juan said that we should tie up the goat with this rope.’

d. Ma’a’ŋao si Manuel [păra u-lalatdi i famagu’un]. fear Unm Fut S3s-scold the children ‘Manuel is afraid to scold the children.’

The gaps in the questions in (45) represent the original trace of the wh-phrase; they indicate the position of the wh-phrase before any Wh Movement has occurred. The issue of whether intermediate traces are also left by Wh Movement—that is, whether the rule is successive cyclic or unbounded—will be taken up in sections 4 and 5.

Looking first at the embedded clauses of these questions, we see that Wh Agreement works as (43) predicts: in each case the embedded verb agrees in grammatical function with the trace of the wh-phrase. Thus, in (45a) the trace is the oblique complement of an embedded stative verb, and that verb exhibits oblique Wh Agreement (i.e. nominalization without -in-). In (45b) the trace is the subject of the embedded verb, so the verb surfaces with subject Wh Agreement (i.e. the infix -um-). In (45c) the trace is an

11 The embedded clause in (45a) is a sentential subject. Like other verb-initial languages that I am familiar with, Chamorro allows extraction out of sentential subjects. Because this type of extraction is ungrammatical in English, I have translated it with English sentences involving Extraposition.

As in English, extraction is more difficult out of factive than nonfactive complements, so (45a) is somewhat less natural than the other examples.
embedded instrument; the embedded verb shows oblique Wh Agreement, as expected. Finally, in (45d) the trace is the direct object of the embedded verb, so the verb surfaces with direct object Wh Agreement (here, no special morphology).

What is surprising is that the higher clauses of long-distance questions also have Wh Agreement; here, however, the verb agrees with something other than the grammatical function of the original trace. In (45a), for instance, the higher verb displays subject Wh Agreement; in (45b) and (45c), direct object Wh Agreement; and in (45d), oblique Wh Agreement. The reader can verify that in each case, the agreement of the higher verb is not determined by the grammatical function of the trace in the embedded clause.

The point is made clearly by the contrast between (45c,d) and the ungrammatical questions below:

(47) a. *Hafa hassóso-mmu [pāra fa`gase-mmu ni kareta ___]? 
   what? think + Ipf + Nmlz-your Fut wash + Nmlz-your Obl car 
   (What are you thinking of washing the car with?)
   b. *Hafa ma’aña o i palao’an [pāra u-fanu’i si nana-ña ___]? 
   what? fear the girl Fut S3s-show Unm mother-her 
   (What is the girl afraid to show her mother?)

In each of the examples in (47) both verbs have been made to agree with the original trace of the wh-phrase; the result is ungrammatical.

The generalization governing Wh Agreement in higher clauses is roughly this: the verb agrees in grammatical function with the entire sentential complement out of which the wh-phrase has been moved.12 This generalization can be seen at work in each of the examples above. Thus, in (45a) the sentential complement in which the wh-phrase originated is the subject of the higher verb istótoba ‘disturb’. Observe that this verb can select a lexical noun subject:

(48) Ha-istótoba yu’ si Juan. 
   E3s-disturb + Ipf me Unm 
   ‘Juan is disturbing me.’

Once the wh-phrase has been moved, the Wh Agreement of the higher verb reflects the grammatical function of the sentential complement; namely, subject. Compare the agreement that occurs when the subject of (48) is questioned:

(49) Hayi um-istótoba hao?
   who? UM-disturb + Ipf you 
   ‘Who is disturbing you?’

In (45c) the sentential complement originally containing the wh-phrase is the direct object of sangan ‘say’ at all levels of derivation before Wh Movement. Again the higher verb

12 For this generalization to hold, the sentential complements in question must be analyzed as being immediately dominated by NP, as in (52). Such an analysis does not pose a problem for the claim that elements in the embedded clause of (52) are subjacent to elements in the matrix clause, if one adopts the view that only branching nodes count for the purposes of determining subjacency (see Chomsky (1973, 252); Bresnan (1976, 362)).
is inflected for the grammatical function of the entire sentential complement; it exhibits direct object Wh Agreement. Compare (50a), in which the sentential complement has been replaced by a lexical direct object, and (50b), in which that direct object has been questioned:

(50) a. Ha-sangan si Juan ennao nigap.  
E3s-say Unm that yesterday  
'Juan said that yesterday.'

b. Hafa s-in-angan-ná si Juan nigap?  
what? IN-say + Nmlz-his Unm yesterday  
'What did Juan say yesterday?'

The situation is similar in (45b), where the sentential complement is the former direct object of sangan-i 'say to', a Dative Movement verb, and (45d), where the sentential complement is the oblique associated with the stative verb ma'a'ñao 'be afraid'.

Rephrasing these remarks in terms of wh-traces, we arrive at (51):

(51) a. In wh-questions every verb on the path between the wh-phrase and its original trace exhibits Wh Agreement.

b. The most deeply embedded verb agrees with the original wh-trace; a higher verb agrees with the sentential complement dependent on it that contains the original trace.

The operation of the agreement rule in long-distance questions is schematized in (52):
Additional facts bear out the correctness of this description of Wh Agreement. For instance, given (51), there should be just one situation in which the verbs of a long-distance question exhibit identical Wh Agreement: when the wh-trace has the same grammatical function—subject, direct object, or oblique—as the sentential complements containing it. This is so, as can be seen from a comparison of (47) with (53):

(53) Hayi malago'-ña si Carmen [pára ali’e’-ña _____ ]?
who? want + Nmlz-her Unm Fut meet + Nmlz-her
‘Who does Carmen want that she should meet with?’

In (53) the wh-trace is a comitative and the sentential complement containing it is the complement of a stative verb; since both of these are oblique grammatical functions, oblique Wh Agreement shows up on the matrix and embedded verbs. The agreement is realized obligatorily, as is consistent with (44):

(54) a. *Hayi malágu’ si Carmen [pára ali’e’-ña _____ ]?
who? want Unm Fut meet + Nmlz-her
(Who does Carmen want that she should meet with?)

b. *Hayi malago’-ña si Carmen [pára u-āli’i’ _____ ]?
who? want + Nmlz-her Unm Fut S3s-meet
(Who does Carmen want that she should meet with?)

In (55) the wh-trace and the sentential complement containing it are both direct objects, so direct object Wh Agreement appears on both verbs. Since this type of agreement is realized optionally (see (44b)), each verb may exhibit it or not, leading to four surface possibilities:

(55) a. Hafa si nana-mu ha-sangan-i hit [ha-fahan _____ ]?
what? Unm mother-your E3s-say-Dat us E3s-buy
‘What did your mother tell us that she bought?’

b. Hafa si nana-mu ha-sangan-i hit [f-in-ahan-ña _____ ]?
what? Unm mother-your E3s-say-Dat us IN-buy + Nmlz-her
‘What did your mother tell us that she bought?’

c. ?Hafa si nana-mu s-in-angan-e-nña nu hita [ha-fahan what? Unm mother-your IN-say-Dat + Nmlz-her Obl us E3s-buy _____ ]?
‘What did your mother tell us that she bought?’

d. ?Hafa si nana-mu s-in-angan-e-nña nu hita [f-in-ahan-ña _____ ]?
IN-buy + Nmlz-her
‘What did your mother tell us that she bought?’

Further, assuming (51), Wh Agreement should operate in the expected way in long-
distance questions containing more than two clauses: each higher verb should agree with the sentential complement dependent on it that contains the original wh-trace. This is the case, as (56) shows:

(56) Hayi s-in-angan-e-ñña si Antonio nu hāmi [s₂ ma’a’ñao-ña who? IN-say-Dat + Nmlz-his Obl us fear + Nmlz-his [s₁ pāra u-chiku ___ ]? Fut S3s-kiss

‘Who did Antonio tell us that he is afraid to kiss?’

In (56) the wh-trace is a direct object, so the most deeply embedded verb exhibits direct object Wh Agreement; the sentential complement S₁ is an oblique, so the intermediate verb on which it is dependent (ma’a’ñao ‘be afraid’) shows oblique Wh Agreement; finally, the sentential complement S₂ is a (former) direct object, so the matrix verb has direct object Wh Agreement.

Examples like these make clear that (51) gives an accurate description of the workings of Wh Agreement. We now face the problem of incorporating this description into Chamorro grammar—in particular, of restating the agreement rule so that it captures the unity behind the two conditions given in (51b). The following section is devoted to this enterprise.

4. Three Alternatives

The proper statement of the Wh Agreement rule is intimately connected to certain assumptions about Wh Movement: whether the rule is bounded and, if so, whether it can reapply successively to its own output. Accordingly, the three alternatives discussed below for dealing with the agreement phenomena of section 3 also differ in their conception of Wh Movement. The choice among the alternatives ultimately amounts to a conclusion about the ways in which unbounded dependencies can be produced, as I will show below.

Section 4.1 discusses an analysis in which the unbounded dependencies in long-distance questions would be produced by a bounded Wh Movement plus some other rule. Section 4.2 discusses a proposal that would allow Wh Movement to be unbounded. Finally, section 4.3 discusses a proposal that relies on the assumption that Wh Movement is bounded and successive cyclic.

4.1. A Proposal Involving Bounded Wh Movement

One possible account that might be given of the agreement phenomena in section 3 can be sketched intuitively as follows. As we have seen, in long-distance questions a higher verb apparently agrees with the sentential complement out of which the wh-phrase has just come. Suppose we were to assume that the wh-phrase not only moves out of that
complement but, in doing so, assumes its grammatical function as well. Then every verb in a long-distance question would in fact be agreeing with the moved wh-phrase. Differences in the agreement exhibited by particular verbs would follow from the fact that the wh-phrase would come to bear different grammatical functions in its journey up the tree.

Although there are several imaginable ways of giving explicit realization to this proposal, let us assume here that verbs taking a sentential complement are actually subcategorized for an empty NP plus a following S'; the empty NP will have the grammatical function that was assumed in section 3 to be assigned to the NP immediately dominating the S'. In long-distance questions a bounded, iterative Raising rule will move the wh-phrase into the empty NP of the next higher clause, thereby causing it to assume the grammatical function of the empty NP. Once successive raisings of this type have placed the wh-phrase in the highest clause, it will be moved into COMP by Wh Movement. Schematically:

(57)  

```
S'  
|   
|   COMP  
|   S  
|   NP  
|       [+GF β]  
|   COMP  
|   S  
|   NP  
|       [+w'  
|           [+GF α]  
```

Such a proposal would allow us to keep the original formulation of Wh Agreement in (43), if we assume that Raising leaves a trace. We would merely have to stipulate that the agreement triggers in (43) include not only traces left by Wh Movement but also

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13 From a Relational Grammar perspective, this amounts to saying that extraction of the wh-phrase from an embedded clause obeys the Relational Succession Law of Perlmutter and Postal (1972).

14 If such an analysis were adopted, one would have to ensure that a moved NP came to bear the feature [+ subject], [+ direct object], or [+ oblique] associated with the NP position into which it moved. There are several conceivable ways of accomplishing this: for instance, one might simply assert that in cases of feature conflict, the grammatical function assigned to an NP by a higher clause would “win” over the one assigned to it by a lower clause. I do not pursue this further, since the evidence presented below argues that the analysis in question should, in fact, not be adopted.
 traces left by Raising. Finally, in order to prevent Wh Movement from applying in (57) until the wh-phrase has reached the highest clause, we could stipulate that the rule was bounded and not successive cyclic. The proposal is summed up in (58):

(58) a. Bounded and successive cyclic Raising  
   b. Bounded but not successive cyclic Wh Movement  
   c. Wh Agreement as in (43), except that t = the trace of Wh Movement or Raising

The essential claim of this proposal is that the unbounded dependencies in long-distance questions are not produced by Wh Movement alone, but rather by the interaction of Wh Movement with another rule.

Despite its ability to deal with the agreement phenomena in section 3, a proposal such as (58) encounters certain problems. To begin with, the Raising rule sketched in (57) is not independently motivated. Wh-phrases that have been “raised” must ultimately be moved into COMP, an operation that destroys the most obvious effects of the putative Raising rule. NPs that are not wh-phrases cannot “raise” at all, regardless of whether Wh Agreement applies later:

(59) a. Malāgu’ si Carmen [pāra u-āli’i’ yan i che’lu-hu lahi].  
   want Unm Fut S3s-meet with the sibling-my male  
   ‘Carmen wants that she should meet with my brother.’  
   b. *Malāgu’ si Carmen ni che’lu-hu lahi [pāra u-āli’i’ ____ ].  
   want Unm Obl sibling-my male Fut S3s-meet  
   (Carmen wants that she should meet with my brother.)  
   c. *Malāgu’ si Carmen ni che’lu-hu lahi [pāra ali’e’-ña ____ ].  
   want Unm Obl sibling-my male Fut meet +Nmlz-her  
   (Carmen wants that she should meet with my brother.)

Further, the one substantive claim made by Raising is that the wh-phrase in long-distance questions comes to bear a new grammatical function in each higher clause. But the facts do not support this claim, as the following discussion will show.

First, recall from section 1.3 that intransitive verbs exhibit Number Agreement triggered by the subject:

(60) a. Ma’pus si Rita.  
   leave Unm  
   ‘Rita left.’  
   b. Man-ma’pus i famalao’an.  
   Pl-leave the women  
   ‘The women left.’

The Number Agreement appears even if the subject trigger is a wh-phrase that is moved into COMP by Wh Movement:
(61) Hayi na famalao’an man-ma’pus?
    who? L women Pl-leave
  ‘Which women left?’
Now instead of selecting a lexical noun subject, certain intransitive verbs such as siguru ‘be certain’ may select a sentential subject; in terms of the proposal outlined above, they would be subcategorized for a sentential complement preceded by an empty subject NP. In a long-distance question involving such a structure, we would then expect the wh-phrase to ‘raise’ out of the sentential complement into the empty NP, becoming the higher subject and thus a potential trigger for Number Agreement. This expectation is not realized, however. Wh-phrases in long-distance questions such as (62) do not trigger Number Agreement on the higher verb:

(62) a. Hayi siha na taotao siguru [pāra u-g-in-ānna i karera ____]?  
    who? Pl L person certain Fut S3s-Pass-win the race  
  ‘Which people is it certain that the race will be won by?’

b. *Hayi siha na taotao man-siguru [pāra u-g-in-ānna i karera ____]?  
    who? Pl L person Pl-certain Fut S3s-Pass-win the race  
  (Which people is it certain that the race will be won by?)

The ungrammaticality of (62b) argues that the wh-phrase does not assume the grammatical function of subject as it moves into the higher clause.

In short, no evidence besides Wh Agreement supports the claim that the wh-phrase in long-distance questions assumes a new grammatical function in each higher clause. The facts of (62) appear to contradict such a claim, whereas they support the idea that in higher clauses of long-distance questions, the wh-phrase bears no grammatical function at all. For these reasons I reject (58) and turn to the other two proposals discussed here: one involving unbounded, and the other successive cyclic, Wh Movement.

4.2. A Proposal Involving Unbounded Wh Movement

The second account that we might consider for the agreement phenomena in section 3 returns to the assumption that the sentential complements in long-distance questions are immediately dominated by NP (see footnote 12). Given this, the generalization in (51b) could be restated as follows: in wh-questions the verb agrees with the NP dependent on it that contains the original trace of the wh-phrase. Observe that this generalization will account for Wh Agreement not only in the higher clauses of long-distance questions but also in the most deeply embedded clause, as well as in simplex questions, if we make the natural assumption that NPs contain themselves.

If we were to state the Wh Agreement rule so as to reflect the generalization directly, we would arrive at (63):

(63) WH$_i$ X V (NP)* [$_{NP}$ Y t$_i$ Z] W  
    [+$GF\alpha$]  
    1 2 3 4 5 6 7 8 → 1 2 3 4 5 6 7 8  
    [+$GF\alpha$]

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This rule would index the verb with the grammatical function of an NP containing the trace of the $wh$-phrase. Note that the rule would have to mention the $wh$-phrase as well as its trace, in order to prevent agreement from affecting verbs not on the path of $Wh$ Movement (such as the matrix verb in (41)). Since the $wh$-phrase can in principle end up arbitrarily far from a verb agreeing with it, term 2 in the structural description would have to be an essential variable; that is, this version of $Wh$ Agreement would be unbounded.

To see that (63) would produce the agreement facts of section 3, consider the post-$Wh$-Movement tree that would be associated with (56) under this proposal:

The tree can be factored in three ways so as to meet the structural description of $Wh$ Agreement in (63). Choosing $V^1$ to be term 3 of the structural description will result in
its being indexed with the grammatical function of the wh-trace (here, direct object). Choosing V² to be term 3 will result in its being indexed with the grammatical function of NP² (oblique). Finally, choosing V³ to be term 3 will result in its being indexed with the grammatical function of NP³ (direct object).

Observe further that no traces besides the original trace of the wh-phrase would be necessary for agreement to be assigned correctly in (64). In other words, the proposal just developed would allow Wh Movement to be an unbounded transformation. The elements of the proposal are summed up in (65):

(65) a. Unbounded Wh Movement
    b. Unbounded Wh Agreement, as in (63)

This proposal claims that the long-distance dependencies in wh-questions are produced through the operation of an unbounded movement rule.

Although it deals with the agreement phenomena of section 3, a proposal such as (65) cannot account for their contrast with the agreement facts of relative clauses. The following subsections are devoted to this topic.

4.2.1. Relative Clauses and Wh Agreement. Relative clauses in Chamorro follow their head NPs and are introduced by the complementizer ni. The relative NP, which can bear one of several grammatical functions within the relative clause (see Gibson (1980)), is absent in surface structure:

(66) a. Guāha baba ma-susedi ni taotao [ni man-hāhanao ___
    exist bad Pass-experience Obl person Comp Pl-go +Ipf
    gi chālan pära Yo’ña].
    Loc road to
    ‘Something bad was experienced by the people who were going on the road to Yona.’

b. Kao un-kuentusi i láhi [ni pära u-taitai ___ i lepblu]?
    Q E2s-speak + to the boy Comp Fut S3s-read the book
    ‘Did you speak to the boy who is going to read the book?’

c. In-kānnu’i neŋkanu’ [ni ha-fahān si Maria ___ gi tenda].
    Elp-eat the food Comp E3s-buy Unm Loc store
    ‘We ate the food that Maria bought at the store.’

The fact that the relative NP never has the option of surfacing as a pronoun argues that it could not be deleted by Pronoun Drop (see section 1.4). Rather, some other rule must be responsible for its failure to appear: either a coindexing rule operating between a relative PRO and the head NP, or else Wh Movement followed by local deletion of the wh-phrase. I assume the former, in order to stress that the argument developed here does not depend on the assumption that relative NPs undergo Wh Movement.

Significantly, the verbs of relative clauses agree in grammatical function with the relative NP (see Lindner (1977)). This agreement has the same morphological realization as Wh Agreement in questions, as is illustrated briefly below.
If the relative NP is the subject of a realis transitive clause and is therefore supposed to trigger Ergative Agreement, then that agreement is exceptionally realized as the infix -um-:

(67) a. Um-ässudda’ häm yan i palao’an [ni f-um-a’gasi i kareta].
   Npl-meet we with the woman Comp UM-wash the car
   ‘I met with the woman who washed the car.’ (lit. ‘We with the woman . . . met.’)
      the boys Comp UM-tease + Ipf the teacher Pl-naughty
      ‘The boys who are teasing the teacher are naughty.’

If the relative NP bears no other grammatical functions to the clause besides direct object or ‘former’ direct object, then optionally the verb can be nominalized; if nominalized, it is marked with the infix -in-:

(68) a. In-kannu’ i néngkanu’ [ni f-in-ahan-ña si]
   Elp-eat the food Comp IN-buy + Nmlz-her Unm
   Maria gi tenda].
         Loc store
   ‘We ate the food that Maria bought at the store.’
   b. Estagui’ i lepblu [ni ni-na’i-ña si Juan nu hita].
      here the book Comp IN-give + Nmlz-his Unm Obl us
      ‘Here is the book that Juan gave us.’

Finally, if the relative NP is one of several types of obliques—instrument, comitative, or the complement of a stative verb—then the verb must be nominalized but is not marked with -in-:

(69) a. Na’i yu’ ni häpbun [ni pärä fa’gase-mmu ni kareta].
    give me Obl soap Comp Fut wash + Nmlz-your Obl car
    ‘Give me the soap that you are going to wash the car with.’
   b. Todu i famalao’an [ni asuddä’-hu ] ti man-interesáu nu
      all the women Comp meet + Nmlz-my not Pl-interested Obl
guahu.
      me
      ‘All the women that I met with are not interested in me.’
   c. Ti mahalang yu’ ni taotao [ni mahalang-mu ].
      not miss I Obl person Comp miss + Nmlz-your
      ‘I don’t miss the person that you miss.’

The fact that the agreement found in relative clauses exactly parallels the agreement found in wh-questions argues that both are produced by the same Wh Agreement rule. The form of that rule depends in part on one’s assumptions about how relative clauses are derived. Pursuing the choice made above, let us assume that the relative NP within
a relative clause is realized as an underlying PRO. Let us further assume that an unbounded rule of Controlled Pro Deletion replaces the PRO with a trace coindexed with the head NP (see Bresnan and Grimshaw (1978)):

\[(70)\] \[\text{NP } [s^* X \text{ PRO } Y] \rightarrow \text{NP}_i [s^* X t_i Y]\]

Then within the proposal outlined in (65), Wh Agreement would have to be restated to mention traces of head NPs of relative clauses as well as traces of moved \textit{wh}-phrases. Such a reformulation would look like (71):

\[(71)\] \[
\begin{array}{c}
\{\text{WH}_i\}, \text{X V (NP)*} \\
\text{NP}_i, \text{Y t}_i \text{ Z}\]
\end{array}
\]

\[1\text{ 2 } 3 \text{ 4 } 5 \text{ 6 } 7 \text{ 8 } 1 \text{ 2 } 3 \text{ 4 } 5 \text{ 6 } 7 \text{ 8}\]

\[\left[+\text{GF }\alpha]\right]

I will refer to a proposal that incorporates unbounded \textit{Wh} Movement, unbounded Controlled Pro Deletion, and \textit{Wh} Agreement rule (71) as the revised version of (65).

4.2.2. \textit{Wh Agreement in Long-Distance Relative Clauses}. The revised version of (65) makes a prediction about the agreement pattern of relative clauses in which the head NP is several clauses removed from its trace. To see this, consider the long-distance relative clause schematized in (72):

\[(72)\] 

```
      NP
     / \   \
NP_i S'
/          \ \
COMP S^2
/ \        /  \
V^2 NP^2
 \ [ +GF \beta ]
   |     /  \
S' COMP S^1
  / \     /  \
V^1 NP^1
   \ [ +GF \alpha ]
     e
```
Choosing $V^1$ to be term 3 in the structural description of (71) will lead to its being indexed with the grammatical function of NP$^1$, while choosing $V^2$ to be term 3 will lead to its being indexed with the grammatical function of NP$^2$. More specifically, it is predicted that agreement should show up on every verb on the path between the head NP and its trace.

This prediction turns out to be contradicted by the facts. On the one hand, Wh Agreement appears in the expected way on the most deeply embedded verb of a long-distance relative clause:

(73) a. Ti um-ä’asudda’ häm yan i palao’an [ni malägu’ si Manuel not Npl-meet + Ipf we with the woman Comp want Unm [pära asuddâ’-hu _____ ]].
  Fut meet + Nmlz-my
  ‘I haven’t yet met with the woman who Manuel wants me to meet with.’
  (lit. ‘We with the woman . . . haven’t met.’)
b. Edyu gui’ i lähi [ni h-in-asso-kku [f-um-a’gasi _____ i there the man Comp IN-think + Nmlz-my UM-wash the kareta]]].
  car
  ‘There is the man who I think washed the car.’

This agreement is obligatory:

(74) a. *Ti um-ä’asudda’ häm yan i palao’an [ni malägu’ si Manuel not Npl-meet + Ipf we with the woman Comp want Unm [na pära bai u-ässudda’ _____ ]].
  Comp Fut S1s-meet
  (I haven’t yet met with the woman who Manuel wants me to meet with.)
b. ?*Edyu gui’ i lähi [ni h-in-asso-kku [ha-fa’gasi _____ i there the man Comp IN-think + Nmlz-my E3s-wash the kareta]].
  car
  (There is the man who I think washed the car.)

On the other hand, Wh Agreement is preferably not exhibited by higher verbs within the relative clause structure. Compare the preferred (75) with the less preferred but still possible (76), in which the higher verbs do show agreement:

(75) a. Ti in-bäba i kahun [ni si Juan malägu’ nu hita [na not Elp-open the box Comp Unm want Obl us Comp ta-bäba _____ ]].
  Slp-open
  ‘We didn’t open the box that Juan wanted us to open.’
b. Um-ásudda’ hâm yan i pâtgun [ni ma’a’ña'o si Maria [pâra Npl-meet we with the child Comp fear Unm Fut u-lalatdi ____ ]].
S3s-scold
‘I met with the child who Maria is afraid to scold.’ (lit. ‘We with the child . . . met.’)

c. Na’i yu’ ni machetti [ni man-yâyas siha [ipi’-niha give me Obl machete Comp Pl-tired they split +Nmlz-their ni niyuk ____ ]].
Obl coconut
‘Give me the machete that they are tired of splitting the coconuts with.’

(76) a. Ti in-bâba i kahun [ni si Juan malago’-ña nu hita not Elp-open the box Comp Unm want +Nmlz-his Obl us [na ta-bâba ____ ]].
Comp Slp-open
‘We didn’t open the box that Juan wanted us to open.’

b. Um-ásudda’ hâm yan i pâtgun [ni ma’a’ña-o-ña si Maria Npl-meet we with the child Comp fear +Nmlz-her Unm [pâra u-lalatdi ____ ]].
Fut S3s-scold
‘I met with the child who Maria is afraid to scold.’ (lit. ‘We with the child . . . met.’)

The preference for Wh Agreement not to affect the higher verbs of long-distance relative clauses contrasts with the character of this rule in long-distance questions, where it must apply to all verbs on the path between the moved wh-phrase and its trace. Compare the relative clause in (77a) with the indirect question in (77b):

(77) a. Fanu’i yu’ ni lepblu [ni malâgu’ hao [un-taitai ____ ]].
show me Obl book Comp want you S2s-read
‘Show me the book that you want to read.’

b. Fanu’i yu’ [hafa na lepblu malago’-mu [un-taitai ____ ]].
show me what? L book want+Nmlz-your S2s-read
‘Show me which book you want to read.’

In short, the agreement pattern of long-distance relative clauses diverges somewhat from the agreement pattern of the corresponding wh-questions. This divergence argues against the revised version of proposal (65), in the following sense. In the revised version of (65), wh-questions produced by Wh Movement would have the same configuration of traces as relative clauses produced by Controlled Pro Deletion of the relative NP. Since the Wh Agreement rule (71) refers to traces, it would apply to both structures in the same way, leading to agreement patterns that were entirely identical. There would be no principled way of making the differences in agreement follow from the original
assumptions of the proposal. For this reason I tentatively reject (65) and, with it, the idea that Wh Movement might be unbounded.

4.3. A Proposal Involving Successive Cyclic Wh Movement
The third proposal that I wish to discuss differs from the previous two in assuming that Wh Movement is bounded and successive cyclic, whereas Controlled Pro Deletion is unbounded. All of the agreement facts of sections 3 and 4.2 follow naturally from these assumptions, as will be seen below.

If we assume that Wh Movement is bounded and successive cyclic, then long-distance questions such as (78) will have traces in the original position of the wh-phrase as well as in the complementizer positions along its path:

(78)
The configuration of traces in (78) suggests that we can restate the generalization governing Wh Agreement in questions as follows: each verb of a wh-question agrees with the NP dependent on it that begins with a trace of the wh-phrase. Thus, in (78) the most deeply embedded verb V\textsuperscript{1} is indexed for the grammatical function of NP\textsuperscript{1}; the next higher verb V\textsuperscript{2} is indexed for the grammatical function of NP\textsuperscript{2}; and so on.

Because Wh Agreement also occurs in relative clauses, the question of how to formulate this rule intersects with the issue of how relative clauses are analyzed. As we have just seen, relative clauses exhibit a rather complicated pattern of Wh Agreement. The verb on which the (original) trace of the head NP is dependent must have Wh Agreement; higher verbs within the relative clause structure may have agreement, but preferably do not. Evidently an analysis of relative clauses must be rich enough to allow for both of the options illustrated in (75)–(76). At the same time, the options should preferably be sanctioned in a way that does not involve simply listing them as stipulations on the Wh Agreement rule.

I propose to deal with this issue by assuming that relative NPs are realized as underlying PROs that are either +wh or −wh. +Wh relative NPs undergo Wh Movement and are then locally deleted under coreference with the head NP (Chomsky (1977)). This is illustrated for a long-distance relative clause in (79):

\begin{equation}
(79)
\begin{tikzpicture}
  \node (NP) {NP}
  child {node (NP_i) {NP\textsubscript{i}}
    child {node (COMP) {COMP}
      child {node (NP_i) {NP\textsubscript{i}}
        edge from parent node[below] {$\phi$}
      }
      child {node (V_2) {V\textsuperscript{2}}
        child {node (NP_2) {NP\textsuperscript{2}}
          edge from parent node[above] { [+GF \beta]}
        }
      }
      child {node (S_2) {S\textsuperscript{2}}
        child {node (NP_i) {NP\textsubscript{i}}
          edge from parent node[above] { +wh}
        }
      }
    }
    child {node (S) {S'}}
  }
  child {node (NP_i) {NP\textsubscript{i}}
    child {node (V_1) {V\textsuperscript{1}}
      child {node (NP_1) {NP\textsubscript{i}}
        edge from parent node[above] { [+GF \alpha]}
      }
      child {node (e) {e}}
    }
    child {node (e) {e}}
  }
  child {node (COMP) {COMP}
    child {node (NP_i) {NP\textsubscript{i}}
      child {node (e) {e}}
    }
  }
\end{tikzpicture}
\end{equation}
- *Wh* relative NPs undergo the Controlled Pro Deletion of (70), which reduces them to traces coindexed with the head NP. This is shown for a long-distance relative clause in (80):

\[ (80) \]
\[
\begin{array}{c}
\text{NP} \\
\text{NP}_i \\
\text{S'} \\
\text{COMP} \\
\text{S}^2 \\
\text{V}^2 \\
\text{NP}^2 \\
\text{[+GF } \beta \text{]} \\
\text{S'} \\
\text{COMP} \\
\text{S}^1 \\
\text{V}^1 \\
\text{NP}_i^t \\
\text{[+GF } \alpha \text{]} \\
\downarrow \\
\downarrow \\
\end{array}
\]

Since *Wh* Movement and Controlled Pro Deletion both leave traces, we can now state the *Wh* Agreement rule in a maximally general way by having it refer to an NP beginning with trace:

\[ (81) \]
\[
X \ V \ (NP)^* \ [_{NP} \ t \ Y] \ Z \\
1 \ 2 \ 3 \ 4 \ 5 \ 6 \rightarrow 1 \ 2 \ 3 \ 4 \ 5 \ 6 \\
\text{[+GF } \alpha \text{]}
\]

where \( t \) = the trace of *Wh* Movement or Controlled Pro Deletion, and \( \alpha \) ranges over the grammatical functions subject, direct object, and oblique.

The rather complicated facts of *Wh* Agreement in relative clauses follow naturally from these assumptions. In simplex relative clauses, *Wh* Movement and Controlled Pro Deletion have comparable results: both leave a trace that triggers the *Wh* Agreement
rule. In long-distance relative clauses, the outputs of the two rules diverge. Successive cyclic Wh Movement leaves traces in every complementizer position along the path of a +wh relative NP; these trigger Wh Agreement on every verb of the relative clause structure, producing the surface pattern (76). In contrast, unbounded Controlled Pro Deletion leaves a trace only in the clause originally containing the −wh relative NP, so only the verb of that clause exhibits Wh Agreement, as in the preferred (75). The overall outcome for relative clauses is that the verb on which the original trace is dependent must show Wh Agreement, but higher verbs within the relative clause structure need not, precisely as was described above.\textsuperscript{15,16}

The elements of this proposal are summed up in (82):

(82) a. Bounded and successive cyclic Wh Movement
b. Unbounded Controlled Pro Deletion
c. Wh Agreement rule (81)

It should be clear that the two notions crucial to this proposal are the notion ‘trace’ and the contrast between the successive cyclic and unbounded methods of rule application. Successive cyclicity differentiates Wh Movement from the unbounded Controlled Pro Deletion rule. Traces translate this difference in rule application into a structural difference that can be referred to by later rules. The two notions combine to predict the agreement pattern of wh-questions and relative clauses in a surprisingly elegant way.

\textsuperscript{15} Observe that the hypothesis of section 4.2 would not be improved by allowing relative clauses to be derived via either Wh Movement or Controlled Pro Deletion. This is because both rules would be unbounded under that hypothesis. Consequently, they would leave the same configuration of traces and no differences in the agreement pattern would be produced.

\textsuperscript{16} An analysis that permits relative clauses to be affected by either Wh Movement or Controlled Pro Deletion may seem unnecessarily abstract, in that the two processes lead to identical surface structures in the simplex case. However, the analysis is supported by the dialect of several Chamorro speakers, in which relative NPs are regularly realized either as moved wh-phrases or as gaps. In this dialect both (i) and (ii) occur:

(i) Hu-lalatdi esta i pātgu [hayi si Antonio ma’a’nao-ña [pāra u-lalatdi ____]].
Els-scold already the child who? Unm fear + Nmlz-his Fut S3s-scold
‘I have already scolded the child who Antonio is afraid to scold.’

(ii) Um-āsudda’ hām esta yān i palao’an [ni malāgu’i mañainā-mu [pāra Npl-meet we already with the woman Comp want the parents-your Fut ali’i-’niha ____]].
meet + Nmlz-their
‘I have already met with the woman that your parents want to meet with.’ (lit. ‘We with the woman . . . met.’)

(The wh-phrase in (i) triggers deletion of the complementizer ni, as discussed in footnote 4.) From the limited data available, there appears to be a significant interplay in this dialect between Wh Agreement and the surface appearance of a +wh relative NP. Long-distance relative clauses containing a surface wh-phrase always have Wh Agreement in their higher clauses; those containing a gap have agreement only optionally in their higher clauses.

The facts are neatly accounted for if local deletion of the wh-phrase is assumed to be optional in this dialect. Thus, (i) is derived by successive cyclic Wh Movement; (ii) is derived by unbounded Controlled Pro Deletion. The overt presence of the moved wh-phrase in (i) supports the claim that relative clauses can involve Wh Movement. At the same time, the agreement pattern in this dialect supports the overall analysis of relative clauses, which invokes both successive cyclic and unbounded rules.
Thus, the facts discussed above ultimately argue that Wh Movement is successive cyclic but that Controlled Pro Deletion is unbounded.

5. A Further Argument

Significantly, the agreement facts do not provide the only argument in Chamorro for treating Wh Movement as successive cyclic but Controlled Pro Deletion as unbounded. This section gives a further argument for that hypothesis, based on the types of NPs that are eligible for extraction.

It is a curious fact of Chamorro that certain passive agents can be targets of extraction rules but others cannot. In particular, passive agents of irrealis clauses can undergo Wh Movement ((83a)), but passive agents of realis clauses cannot ((84a)):

(83) a. Hayi pāra u-in-aligao i leplu _____?  
    who? Fut S3s-Pass-search the book  
    ‘Who is the book going to be looked for (by)?’  

    b. Hayi pāra u-aligao ____ i leplu?  
    who? Fut S3s-search the book  
    ‘Who is going to look for the book?’

(84) a. *Hayi in-aligao i leplu ____?  
    who? Pass-search the book  
    (Who was the book looked for (by)?)

    b. Hayi um-aligao ____ i leplu?  
    who? UM-search the book  
    ‘Who looked for the book?’

The (a) examples above illustrate Wh Movement of passive agents; they should be compared with the (b) examples, which show Wh Movement of the corresponding subjects of (cycle-final) transitive clauses. Throughout, mood distinctions are indicated by the type of agreement and the presence of pāra ‘future’.

The constraint that prevents Wh Movement from affecting realis passive agents evidently does not prevent the rule from moving other NPs of passive clauses, since questions like the following one are grammatical:

(85) Hafa s-in-angan-i hao ____ as tata-mu?  
    what? Pass-say-Dat you Obl father-your  
    ‘What were you told by your father?’

Nor is the constraint morphologically motivated: nothing about the agreement or other morphology of (84a) is ruled out by independently necessary statements of Chamorro grammar. Finally, the constraint appears to hold regardless of how far a realis passive agent might ultimately surface from its original clause:
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(86) a. *Hafa s-in-angan-i hao as nana-mu [ni-na’mänman si Juan what? Pass-say-Dat you Obl mother-your Pass-surprise Unm ___ ]?
(What were you told by your mother that Juan was surprised (by)?)

b. Hafa s-in-angan-i hao as nana-mu [mu-na’mänman ___ si what? Pass-say-Dat you Obl mother-your UM-surprise ___ Unm Juan]?
‘What were you told by your mother surprised Juan?’

An examination of relative clauses reveals the same constraint at work: passive agents of irrealis clauses can serve as relative NPs, but passive agents of realis clauses cannot. Compare:

(87) a. Malagu’ yu’ bai u-kuentusi i taotao [ni păra u-fan-k-in-enni’ want I S1s-speak + to the person Comp Fut S3p-Pl-Pass-take
i famagu’un ___ tatti gi gima’-niha].
the children back Loc house-their
‘I want to speak to the person that the children are going to be taken home
(by).’

b. Malagu’ yu’ bai u-kuentusi i taotao [ni păra u-konni’ ___ i want I S1s-speak + to the person Comp Fut S3s-take the
famagu’un tatti gi gima’-niha].
children back Loc house-their
‘I want to speak to the person who is going to take the children home.’

(88) a. *Kao yā-mu i taotao [ni man-k-in-enni’ i famagu’un ___
Q liking-your the person Comp Pl-Pass-take the children
tatti gi gima’-niha]? back Loc house-their
(Do you like the person that the children were taken home (by)?)

b. Kao yā-mu i taotao [ni k-um-onni’ ___ i famagu’un tatti
Q liking-your the person Comp UM-take the children back
gi gima’-niha]? Loc house-their
‘Do you like the person who took the children home?’

As before, the generalization holds regardless of the number of clauses separating the relative NP from the head NP:

(89) a. *Hu-lalatdi i taotao [ni h-um-ällum yu’ [p-in-änak i
E1s-scold the person Comp Npl-assume I Pass-spank the
pätgun ___ ]].
child
(I scolded the person who I assumed the child was spanked (by).)
b. Hu-lalatdi i taqao [ni h-um-ällum yu’ [p-um-änak ___ i E1s-scold the person Comp Npl-assume I UM-spank the pätgun]].

child

‘I scolded the person who I assumed spanked the child.’

Observe that the relative clause structure in (89) contains a higher intransitive verb that does not have Wh Agreement. In terms of the hypothesis developed in section 4.3, its relative NP must have undergone Controlled Pro Deletion rather than Wh Movement. It follows from this that the constraint preventing extraction of realis passive agents must extend to extraction via Controlled Pro Deletion as well as via Wh Movement.

Although there are several conceivable ways of dealing with these facts, one approach is suggested by the Wh Agreement rule (81). Suppose that “passive agent” is one of the grammatical functions indexed on the verb by Wh Agreement, so that after that rule has applied the relevant verbs in (83)–(84) and (86)–(89) bear the feature [+passive agent]. Then extraction of realis passive agents can be blocked by a surface filter of the form (90):

\[
(90) \begin{bmatrix}
V \\
+ \text{realis} \\
+ \text{passive agent}
\end{bmatrix}
\]

Given that Wh Agreement is triggered by traces left by Controlled Pro Deletion as well as Wh Movement, this filter will correctly exclude the relative clauses (88a) and (89a) as well as the questions (84a) and (86a).

What predictions does the hypothesis of section 4.3 make for the operation of this filter? Since Controlled Pro Deletion is unbounded, relative clauses in which that rule has applied should exhibit Wh Agreement only in the clause originally containing the relative NP. Consequently, filter (90) should have the same effect on long-distance relative clauses as on simplex ones: it should simply exclude those relative clauses whose relative NP is a realis passive agent. On the other hand, since Wh Movement is successive cyclic, questions in which that rule has applied should exhibit Wh Agreement in every clause on the path between the moved wh-phrase and its original trace. It is thus predicted that (90) should also exclude long-distance questions in which the wh-phrase has moved out of a clause that serves as the sentential passive agent of a higher realis clause. If so, the effect of (90) in long-distance questions should be strikingly different from its effect in long-distance relative clauses.

This prediction turns out to be realized. In long-distance questions and long-distance relative clauses, NPs predictably cannot be extracted if they are realis passive agents, as shown above. But in addition, Wh Movement cannot extract a wh-phrase from a clause that serves as the sentential passive agent of a higher realis clause:

\[
(91) \begin{align*}
(91) \text{a. } & *\text{Hayi ni-na’mänman si Juan [na un-paniti ___ ]?} \\
& \text{who? Pass-surprise Unm Comp E2s-slap} \\
& (\text{Who was Juan surprised (by) that you slapped?})
\end{align*}
\]
b. Hayi mu-na’mänman si Juan [na un-paniti ____]?
   who? UM-surprise Unm Comp E2s-slap
   ‘Who did it surprise Juan that you slapped?’

The moved *wh*-phrase in (91a) is a direct object, but the embedded clause out of which it proceeds is the passive agent of a higher realis clause. Compare (92), in which the higher clause is irrealis and *Wh* Movement is possible:

(92) Hayi si Juan pàra u-ni-na’mänman [na un-gòfguaiya ____]?
   who? Unm Fut S3s-Pass-surprise Comp E2s-much +love
   ‘Who is Juan going to be surprised (by) that you love?’

Relative clauses display a different character: relative NPs can undergo Controlled Pro Deletion whether the intermediate clauses containing them are realis passive agents or not:

(93) Um-ásudda’ hâm yan i pátgun [ni ni-na’mänman si Miguel
   Npl-meet we with the child Comp Pass-surprise Unm
   [na un-paniti ____]].
   Comp E2s-slap
   ‘I met with the child that Miguel was surprised (by) that you slapped.’ (lit.
   ‘We with the child . . . met.’)

The contrast between (91a) and (93) follows naturally from the ways in which these sentences are derived. (91a) is derived by two successive movements of the *wh*-phrase, the second of which leads to the higher verb’s being indexed with the feature [+ passive agent]. Since this verb is also realis, the sentence is blocked by filter (90). The derivation of (93) involves no comparable sequence of events; the relative NP is simply reduced to trace, and the properties of the sentential complement containing it are not relevant.

It is difficult to imagine a hypothesis that gives a more general account of the facts, both in treating (83)–(84) and (86)–(89) as instances of the same phenomenon and in distinguishing long-distance questions from long-distance relative clauses. Thus, the ban on extracting realis passive agents provides confirming evidence that *Wh* Movement is successive cyclic, while Controlled Pro Deletion is unbounded.

6. Conclusion

This article has examined some unbounded dependencies in Chamorro and used them to argue that *Wh* Movement is successive cyclic, whereas Controlled Pro Deletion is unbounded. The conclusion that these rules have different methods of application leads to several more general remarks.

First, the Chamorro facts add to the evidence that grammatical theory incorporates the notion ‘successive cyclic movement rule’. Since much of that evidence involves language-particular versions of *Wh* Movement, it is tempting to propose that *Wh* Movement is successive cyclic in universal grammar. Such a suggestion accords with Chom-
sky's (1977) view of Wh Movement, as opposed to Bach's (1971), Baker's (1970), and Bresnan and Grimshaw's (1978) proposals that the universal rule of Wh Movement is unbounded.

Second, the arguments for successive cyclicity rest on contrasts between wh-questions and relative clauses—contrasts that are accounted for by analyzing Wh Movement as successive cyclic but Controlled Pro Deletion as unbounded. If the analysis is correct, then it follows that Chamorro has at least one unbounded transformation. The conclusion that Controlled Pro Deletion is unbounded contradicts Chomsky's (1976) claim that all transformations observe Subjacency, and in particular his assertion that there are no rules of deletion over a variable (Chomsky (1977, 88)). At the same time, it supports Bresnan's (1976; 1977) contention that the theory of grammar includes unbounded transformations.17

The combination of these results argues that grammatical theory must be rich enough to allow both successive cyclic and unbounded transformations. That is, the Subjacency Condition appears to hold for some transformations (e.g. Wh Movement) but not others (e.g. Controlled Pro Deletion). Although this position may not seem to restrict grammatical theory as much as one might like, the full range of facts in Chamorro argues that it is correct.

Finally, the differences discussed here between wh-questions and relative clauses are significant in a wider sense, because they suggest that the two constructions cannot be derived in entirely identical ways. Either the rules involved, their methods of application, or the structures themselves must differ in order for the facts to be produced. Chamorro thus provides evidence against a range of frameworks (notably that of Chomsky (1977)) that treat wh-questions and relative clauses as essentially identical. This evidence is ultimately independent of the issue of whether Wh Movement is successive cyclic, or Controlled Pro Deletion is unbounded.

References

17 Chomsky's (1976) proposal that all transformations observe Subjacency was in part an attempt to account for the fact that complex NPs are islands. It is therefore of interest that complex NPs in Chamorro are islands with respect to both Wh Movement and Controlled Pro Deletion:

(i) Hu-sodda'[i palao'an [ni ma-na'hanao-gui ni kätta].
   Els-find the woman Comp Pass-send-Dat Obl letter
   'I found the woman who was sent the letter,'

(ii) *Hafa un-sodda'[i palao'an [ni ma-na'hanao-gui ____ ]?
    what? E2s-find the woman Comp Pass-send-Dat
    (What did you find the woman who was sent?)

(iii) *Ha-taitai si Juan i kätta [ni hu-sodda'[i palao'an [ni ma-na'hanao-gui ____ ]].
    E3s-read Unm the letter Comp Els-find the woman Comp Pass-send-Dat
    (Juan read the letter that I found the woman who was sent.)

Since Controlled Pro Deletion is unbounded, some mechanism other than Subjacency must evidently be invoked to account for (iii).


