

**Dimensions of Symmetry in Syntax:  
Agreement and Clausal Architecture**

by

**Ken Hiraiwa**

B.A., Osaka University of Foreign Studies (1997)

M.A., Osaka University of Foreign Studies (1999)

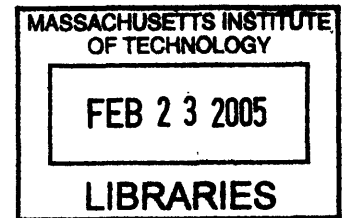
Submitted to the Department of Linguistics and Philosophy  
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

February 2005



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Author .....  
Department of Linguistics and Philosophy  
February 1, 2005

Certified by .....  
Noam Chomsky  
Institute Professor Emeritus of Linguistics  
Thesis Supervisor

Accepted by .....  
Alec Marantz  
Head, Department of Linguistics and Philosophy

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**Abstract**

This thesis is a theoretical investigation of various dimensions of symmetry exhibited in human language. I discuss two kinds of symmetry: AGREEMENT SYMMETRY and STRUCTURAL SYMMETRY. Building on these types of symmetry, the chapters develop and articulate theoretical explanations for a variety of phenomena within the framework of the Minimalist Program and provide empirical verification backed up by a cross-linguistic study.

AGREEMENT SYMMETRY manifests itself under Case and agreement phenomena in natural languages. In the literature, there have been various theoretical proposals to capture the mechanism of Case and agreement (e.g. Government, Spec-Head Agreement, Feature Checking etc.). I argue for a theory of Multiple Agree as a feature valuation theory. Under Multiple Agree, a probe P Agrees with all matching goals simultaneously. Given that valuation is in essence bi-directional, Multiple Agree reveals two natural probe-goal relations: *Mirrorsymmetry* and *Centrosymmetry*. Further, I also propose that a syntactic derivation allows Derivational Simultaneity and that syntactic operations apply simultaneously at a probe level. I call this the Probe Theory of Parallel Derivation (PTPD). It is demonstrated that Multiple Agree and the PTPD explain intricate agreement patterns in Icelandic and other languages.

STRUCTURAL SYMMETRY is exhibited in geometric parallelism between clauses and nouns. Building on observations of CP/DP parallelism sporadically made in the literature, I argue that their symmetric properties are subsumed under *the Supercategorial Theory of the CP/DP Symmetry*. The supercategorial theory views “clausal” and “nominal” structures as arising from a category-neutral supercategorial structure. The categorial differences are, then, determined at phase levels by late insertion of categorial features. One crucial aspect of the proposed theory of structural symmetry involves interweaving effects, which emerge as categorial determination of different sizes and types. The present thesis discusses three such cases: Nominative-Genitive Conversion, Head-Internal Relative Clauses, and Predicate Cleft Constructions. It is further argued that Agreement Symmetry and Structural Symmetry interact with the Case theory and bring far-reaching implications for aspects of syntactic phenomena.

Thesis Supervisor: Noam Chomsky

Title: Institute Professor Emeritus of Linguistics



To the Memory of Ken Hale (1934-2001)

“[I]magination ..... is more important than  
knowledge. Knowledge is limited.  
Imagination encircles the world.”

Albert Einstein  
*The Philadelphia Saturday Evening Post,*  
October 26th, 1929

## Acknowledgments

Time flies. Indeed. Looking back upon the fruitful and exciting four and a half years at MIT and one year in Ghana, I feel “as if everything took place simultaneously”. I wish I were able to thank all the people here *simultaneously* without any order. But, unfortunately, this physical constraint—a flat sheet of paper—does not allow me to do so. Needless to say, I owe my work here to efforts and insights of hundreds of thousands of linguists to the date, without which this thesis would never have existed.

I would like to start with my deepest gratitude to Noam Chomsky and the late Ken Hale. Working with Noam has been such a great experience. He is always very thoughtful, critical, and challenging. He also has made himself always available for email discussions. Meetings with him have never failed to give me significant input as well as new issues with a new perspective. Most importantly, I have learned from him how to think simple, different, and radical.

It was the presence of Ken that made me decide myself to come to MIT in the fall 1999. Every appointment with him started with his peaceful smile and turned out to be precious opportunities for broadening my perspective on linguistics and walking into the wonderland of linguistic typology. He also gave me a precious opportunity to spend time at the American Indian Languages Development Institute (AILDI) held in Tucson in the summer of 2001. I have learned from him how a fieldwork linguist should be.<sup>1</sup> If I had not met him, I would not have entered a world of fieldwork. It is really regrettable that Ken is not here to sign my thesis. But I would like to say that he has always been part of my “co-supervisor” and mentor, and will continue to be so forever in my mind.

I am deeply grateful, with great proud, to my dissertation committee members Noam Chomsky, Chris Collins, Alec Marantz, and David Pesetsky for their invaluable input and thoughtful guidance. Chris has always been helpful at every stage of the thesis-writing. His insightful feedback has often made me realize what I never expected and also have taught me to think simple and logical. Alec has not only given me accurate and penetrating comments but also helped my life here as the head of the department as well as an individual faculty member. His presence has always helped me concentrate on research here. David taught me not only linguistics but also how a linguistic should be and how a teacher should be. He has always read my rough manuscripts very carefully and given me useful feedback. He was also so devoted to helping make my fieldwork possible. The experiences that I had with him in writing up grant proposals were and will be invaluable in my career.

I would like to thank my colleagues Yoshi Dobashi, Shin Ishihara, and Shoichi Takahashi for being good friends and invaluable syntax companions. I have greatly benefited from discussions with Yoshi. He also read an entire draft and provided me insightful comments, which have led to

---

<sup>1</sup>Hale et al. (1992) Hinton and Hale (2001).

substantial revisions. Shin was my housemate for two years. Discussions with him about linguistics, Red Sox, LaTeX, etc. have turned out fruitful. Shoichi, as a housemate as well as a colleague, has been a great company to talk about linguistics and other things (on the way to/from MIT, at the department, and at home every day and night).

At MIT, Michel DeGraff, Suzanne Flynn, Danny Fox, Maya Honda, Morris Halle, Sabine Iatridou, Michael Kenstowicz, Howard Lasnik, Shigeru Miyagawa, Wayne O'Neil, Norvin Richards, and Ken Wexler.

I am also very proud that Ken-ichi Mihara is my teacher of linguistics. He invited me to the world of theoretical linguistics more than ten years ago and has taught me the way one should look at data and generalize from them.

Back in Japan, Hiroyuki Ura and Akira Watanabe are worth special mention here. They have always provided me thoughtful advice and invaluable feedback.

I would like to express my sincere gratitude to the following people: Jun Abe, Klause Abels, Oluseye Adesola, George Akanlig-Pare, Karlos Arregui, Mark Baker, Calixto Agüero Bautista, Jonathan Bobaljik, Adams Bodomó, Cedric Boeckx, Željko Bošković, John Bowers, Ben Bruening, Seth Cable, Mike Cahill, Vicki Carstens, Peter Cole, Aniko Csirmaz, Maria Cristina Cuervo, Rose-Mari Dechaine, Marcel den Dikken, Stefan Elders, David Etlin, Justin Fitzpatrick, John Frampton, Koji Fujita, Naoki Fukui, Isabelle Haik, Daniel Harbour, Nobuko Hasegawa, Rachel Hastings, Anders Holmberg, Tomoya Horikawa, Thorbjörg Hróarsdóttir, Feng-fan "Iwata" Hsieh, Meltem Keleşir, Satoshi Kinsui, Hideki Kishimoto, Chisato Kitagawa, Hisa Kitahara, Masatoshi Koizumi, Jaklin Kornfilt, Haruo Kubozono, Nancy Kula, Susumu Kuno, S.-Y. Kuroda, Howard Lasnik, Claire Lefebvre, Julie Ann Legate, Rose Letsholo, Vivian Lin, Jim McCloskey, Joyce McDonough, Martha McGinnis, Victor Manfredi, Diane Massam, Ora Matushansky, Yoichi Miyamoto, Pamela Munro, Lea Nash, Akio Nasu, Andrew Nevins, John Nissenbaum, Toshifusa Oka, Christer Platzack, Liina Pylkkanen, Andrea Rackowski, Eric Reuland, Willem De Reuse, Luigi Rizzi, Joey Sabbagh, Joachim Sabel, Hiromu Sakai, Mamoru Saito, Anne Schwartz, Halldor Sigurðsson, Takashi Sugimoto, Peter Svenonius, Anna Szabolcsi, Hiroaki Tada, Yuji Takano, Koichi Takezawa, Hiroyuki Tanaka, Satoshi Tomioka, John Whitman, Akira Yamamoto, and my classmates ling-99 (Franny, Lance, Linnaea, Shogo, Teal, Yongjoo). There must be oversights and I hope those who have not been mentioned would not get upset.

Many thanks for their friendship, encouragement, and joyful presence to: Noriro Aoki, Tomo Fujii, Susumu Hamamoto, Hiroshi Ikefuji, Akiko Ito, Chizuru Ito, Mayuko Iwafuchi, Makoto Kadowaki, Yukiko Kanbara, Sachiko Kato, Sachie Kotani, Yuko (Maki) Hashimoto, Nobu Miyoshi, Miwa Isobe, Kemeko Nakanishi, Masashi Nomura, Koji Sugisaki, Shogo Suzuki and many others.

The people in the headquarters of the department deserve mention here. I would like to thank Mary Grenham, Jennifer Purdy, Christine Graham, Stefanie Hanlon, Dan Giblin, Anne Cahill, Glenn P. Ketterle and Bev Stohl (Noam's secretaries), and Marilyn Goodrich (Ken's secretary) as well as Danielle Guichard-Ashbrook at ISO. They have always been there when I need help. I also wish to express thanks here to MIT and the library, which provided me with financial support and the greatest research environment.

I wish to thank my main Bùlì consultant and corroborator George Akanlig-Pare. Without his generous help, patience, insight and love for his own language, portions of this thesis would never have come into existence. Needless to say, the data collected from consultants in this thesis

should be credited to them and the speakers of the languages, not to me, while any errors are to be ascribed to me: Rajesh Bhatt and Sharbani Banerji (Hindi), Youngjoo Lee (Korean), Christer Platzack (Swedish), Halldor Sigurðsson and Thorbjörg Hróarsdóttir (Icelandic), Sarma Vaijayanthi (Tamil), Oluseye Adesola (Yòrùbá), Michel DeGraff (Haitian Creole), Gizele Bougoumpiga (Mooré), Adams Bodomo (Dàgááaré), Sam Atintono (Gurenɛ), Abbas Benmamoun and Usama Soltan (Arabic), Jim McCloskey (Irish), Marcel den Dikken (Dutch), Karlos Arregui (Basque and Spanish), Michela Ippolito (Italian), Meltem Kelepir (Turkish), Lea Nash (Georgian), Idan Landau (Hebrew), Marie Claude Boivin and Marie-Hélène Côté (French), Jackson T.-S. Sun (Apatani), Enoch Aboh (Gungbe), A.K. Dzameshie (Ewe), Feng-fan Hsieh (Taiwanese) Tania Ionin and Ora Matushansky (Russian) Albert Edmond (Twi), Patience Asare (Ga), Aniko Csirmaz (Hungarian), Sarma, Vaijayanth (Tamil) I also wish to thank the following fieldworkers for sharing data with me and/or providing me with invaluable help: Enoch Aboh, Mark Baker, Peter Cole, Chris Collins, Feng-fan Hsieh, Ken Hale, Daniel Harbour, Rachel Hastings, Claire Lefebvre, Victor Manfredi, Brian Potter, Norvin Richards, and Andrés Pablo Salanova,

I am also grateful to the linguistic community at the Department of Linguistics at University of Ghana, Legon, who has made my stay so joyful and meaningful: Paul Agbedor, Kofi Agyekum, George Akanlig-Pare, Patience Asare, Kropp M.E. Dakubu, Alan Duthie, Albert Edmond, Akaba Godwin, E.K.A Osam, Kofi Saah, and others.

Special thanks to Justin Fitzpatrick for kindly proof-reading a draft of this thesis. I also thank Thomas McFadden for his help for my questions about LaTeX.

The Boston Red Sox also made my life here extremely exciting and wonderful. Their performances in “Red October” 2004 prevented me to keep on going with my dissertation writing, without which this dissertation may have been much better written. Congratulations and thanks to “a bunch of idiots”!

Finally, I would like to thank my father Hiroyasu Hiraiwa, my mother Tamiko Hiraiwa, and my brother Ko Hiriawa, my grandfather and grandmother Ryoza and Toshika Ochiai, and our dog Haro for warm encouragement and for generous help in need. And very special thanks go to my fiancé Sachie Kotani for her presence, help, patience, smile, and love.

I would like to dedicate this dissertation to Ken Hale.



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# List of Abbreviations

1, 2, 3,	Person	Indet	Indeterminate
Abl	Ablative	Inf	Infinitive
Abs	Absolutive	Loc	Locative
Acc	Accusative	M	Masculine
Adn	Adnominal form	Neg	Negation
Af	Affirmative	Nml	Nominalizer
Agr	Agreement morpheme	Nom	Nominative
Appl	Applicative	OBJ	Object (marker)
Ant	Anterior	Obl	Oblique
Asp	Aspect	Q	Question marker/particle
C	Complementizer	Part	Participle
Cfp	Clause-final particle	Pass	Passive
Cl	Class	Perf	Perfective
Cnterf	Counterfactual	Pl.	Plural
Comit	Comitative	Poss.	Possessive
Cpl	Copula	Prep.	Preposition
D	Definite (determiner)	Prog.	Progressive
Dat	Dative	Pron	Pronoun
Dem	Demonstrative	Prs	Present
Deflt	Default agreement	Pst	Past
Emph	Emphatic	Red	Reduplicant
End	End form	Rel	Relativizer
Erg	Ergative	Rel	Relative Case (Ergative)
Evd	Evidential	Spec.D	Specific definite
EXPL	Expletive	Spec.Id	Specific indefinite
F	Focus	Sg.	Singular
Fin	Finiteness	St	Stative
Fm	Feminine	SUBJ	Subject (marker)
Fn	Formal noun	T	Tense
Fut	Future	Top	Topic
Gen	Genitive	WH	Wh-agreement
Imp	Imperfective		
Id	Indefinite (determiner)		
Ind	Indicative		





# Chapter 1

## Introduction

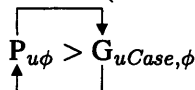
The main theme of this thesis is various patterns of SYMMETRY exhibited in natural languages. In particular, I focus on two kinds of symmetry: Agreement Symmetry and Clausal Symmetry.

### 1.1 Agreement Symmetries

#### 1.1.1 Multiple Agree

In this thesis, I adopt and elaborate a theory of Agree (Chomsky 2000, 2001, 2004a) as an operation to deal with agreement phenomena of human languages. This is represented below.

(1.1) AGREE (Chomsky 2000, 2001)

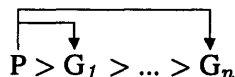


P is a probe and G is a matching goal and “>” indicates a c-command relation. The unvalued  $\phi$ -features of P and the unvalued Case of G are valued under three conditions: (i) feature matching, (ii) c-command, and (iii) locality. Namely, features of P and G must match (e.g. both have to have  $\phi$ -features), P must c-command G when Agree applies, and there cannot be a matching intervening element between P and G.

As I argue in detail in Chapter 2, I elaborate the Agree theory so that a probe P can Agree with more than one goal G *derivationally simultaneously*. This is called Multiple Agree.

(1.2) MULTIPLE AGREE (P,  $\forall$ G)

Agree is a derivationally simultaneous operation AGREE (P,  $\forall$ G).



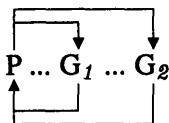
In Chapter 2, I argue that multiplicity is one of the fundamental features of human language. More specifically, I demonstrate that the syntactic operation Agree shows one-to-many relation. In Chapter 5 and Chapter 6, then, I will further propose that Selection is also one-to-many. I will show this based on Head-Internal Relative Clauses and Predicate Cleft constructions.

### 1.1.2 Mirrorsymmetry and Centrosymmetry

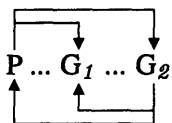
The operation Agree is bi-directional in the sense that Value (P, G) and Value (G, P) take place at the same time. One immediate consequence of Multiple Agree is that it follows that two symmetrical relations are allowed. I call these Mirrorsymmetry and Centrosymmetry. Under the Mirrorsymmetric Multiple Agree, Value (P,  $G_1$ ,  $G_2$ ) returns Value ( $G_1$ , P) and Value ( $G_2$ , P). Under the Centrosymmetric Multiple Agree, on the other hand, Value (P,  $G_1$ ,  $G_2$ ) returns Value ( $G_2$ ,  $G_1$ , P). As I demonstrate in Chapter 2, both kinds of symmetric relations are indeed attested. In other words, I show that each relation is always possible and results in different agreement patterns.

(1.3) Multiple Agree:

a. MIRRORSYMMETRY



b. CENTROSYMMETRY



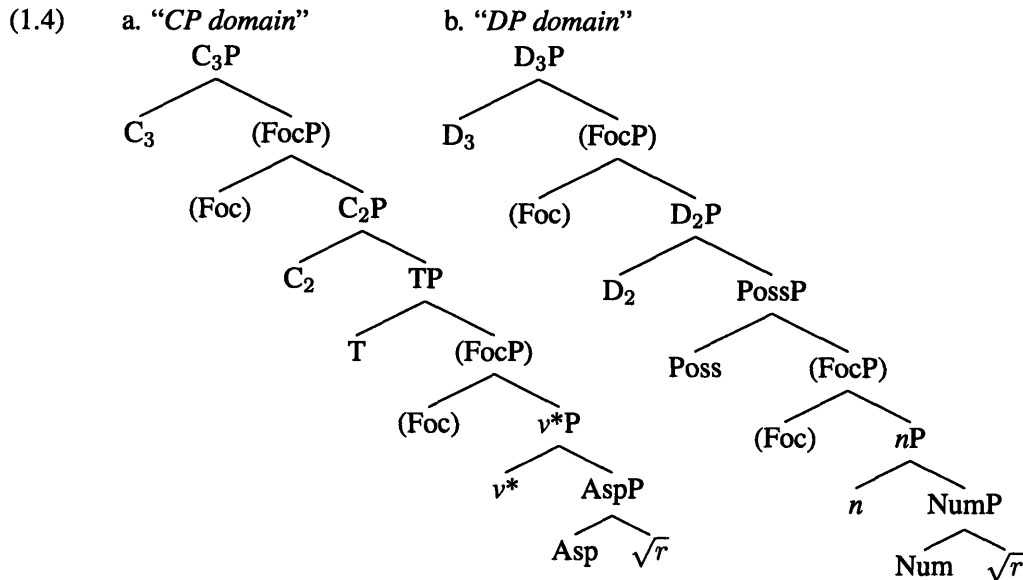
## 1.2 Structural Symmetries

### 1.2.1 The Geometry of CP and DP

Studies on the clausal architecture in generative grammar have revealed that the structure of a “sentence” and that of “noun” are more involved than once thought (for CP, see Pollock 1989, Rizzi 1997, Marantz 1997, Cinque 1999, Aboh 2004; and for DP, see Zamparalli 2000, Vangsnes 1999, Aboh 2004; also see papers in Cinque 2002; Rizzi 2004b; Belletti 2004).

Building on the insights of the precursors (but not necessarily adopting everything), this thesis proposes that CP and DP have the following articulated geometric structures.<sup>1</sup>

<sup>1</sup>The symmetric geometry of CP and DP proposed in this thesis crucially differs from what Svenonius (2004) proposes in that the Asp head is inside  $\nu^*$  for me, while it is outside  $\nu^*$  for him. See Chapter 6.



A number of important studies on the parallelism between DPs and CPs (Chomsky 1970, Abney 1987, Lefebvre and Muysken 1988, Szabolcsi 1994, Collins 2001a, Benmamoun 2003, Koopman 2004, Ogawa 2002, Svenonius 2004, Borer To appear in 2005 among many others) have revealed that the DP domain and the CP domain are parallel in various respects.

C<sub>3</sub> corresponds to the “Force” head in Rizzi’s Left Periphery Theory. C<sub>2</sub>, on the other hand, corresponds to the “Fin(niteness)” head. D<sub>3</sub> and D<sub>2</sub> are heads for demonstrative determiners and definite determiners, respectively. Going down, Poss in the DP domain is meant to be a head corresponding to T in the CP domain and is a locus of Case and agreement. ν\* and *n* are elements that determine the categorial status of the root √*r*, which is taken to be category-neutral (see Marantz 1997). As indicated, Asp(ect) and Num(ber) heads are located below ν/*n*. Thus, verbs and nouns, which have been assumed to be “atom-like”, now consist of real atoms: lexical items/heads, which are further reduced to bundles of features ultimately.<sup>2,3</sup>

Szabolcsi (1983, 1994) argues that DP and CP are parallel, arguing that the determiner is a counterpart of a complementizer. Szabolcsi (1994) claims that C and D are both “subordinators” and this uniform function is responsible for the long-observed CP/DP parallelism.

Clauses and nominals show a variety of similarities (as well as dissimilarities). In terms of Case and agreement, some languages employ the same Case-marking for agents and possessors. Hungarian and Yup’ik Eskimo use nominative and ergative (also called the relative case) markings, respectively, for agents and possessors (see Blake 1994 for more samples of languages).

(1.5) Hungarian: (Szabolcsi 1983, 1994, A. Csirmaz p.c.)

a. Te            ve-tt-el            egy kalap-ot  
 2Sg.Nom buy-Pst-2Sg.Id. Id   hat-Acc

<sup>2</sup>See Hale and Keyser (1993), Fujita (1996), Marantz (1997), Pytkänen (2002).

<sup>3</sup>Although not directly relevant in this thesis, Aissen (1996) provides good evidence for the existence of some Focus position based on DP-internal *Wh*/Focus-movement data. I leave open whether Foc heads are after all edge effects of phase heads. In that case, Aissen’s data will point to the parallel between C<sub>2</sub> and D<sub>2</sub>. See also Aboh (2004).

'You bought a hat.'

- b. a te kalap-ja-i-d  
 D 2Sg.Nom hat-Poss.Pl.-2Sg.  
 'your hats'

(1.6) Yup'ik Eskimo: (Blake 1994)

- a. angute-m nera-a neqa.  
 man-Rel eat-3Sg.3Sg. fish  
 'The man is eating the fish.'
- b. angute-m qimugta-i  
 man-Rel dog-3Pl.Abs.3Sg.Erg  
 'the man's dogs'

As it is discussed in detail in Chapter 3, a number of languages exhibit a parallel Case-marking for possessors in nominals and subjects in clauses under certain syntactic conditions.

(1.7) Japanese:

- a. John-no hon  
 John-Gen book  
 'John's book'
- b. [Kinoo John-ga/no kat-ta hon]-wa omosiro-i.  
 yesterday John-Nom/Gen buy-Pst.Adn book-Top interesting-Prs  
 'the book which John bought yesterday is interesting.'

Furthermore, there are languages like Cuzco Quechua, for example, which shows parallel Case and agreement patterns within (certain) clauses and nominals.

(1.8) Cuzco Quechua: (Lefebvre and Muysken 1988)

- a. Pidru-q ancha hatun wasi-n-man  
 Pedro-Gen very big house-3-to  
 'Pero's very big house'
- b. runa-q qulqui-∅ qu-sqa-n warmi-man  
 man-Gen money-Acc give-Nml-3 woman-to  
 'the woman to whom the man gave the money'

Another intriguing fact is subject Case-marking in Japanese. In Classical Japanese, subject Case-marking was zero in matrix clauses, while in Modern Standard Japanese, it is nominative *-ga*. The nominative Case-marking *-ga* on matrix subjects in Modern Standard Japanese has diachronically grown out of possessive Case-marking within nominals (Nomura 1993, 1996).

There is much cross-linguistic evidence for "parallel structures" of CP and DP. For example, Collins (2001a) shows that verbal projections and nominal projections in  $\neq$ Hoan share a single element *ki*, which indicates plurality for nouns and pluractionality for verbs.

(1.9) †Hoan: (Collins 2001a)

- a. Ø'u-qa kǐ 'mθun(-\*qa)  
duiker-Pl. kǐ[Pl.] head-Pl.  
'the duikers' heads'
- b. Jefo kǐ-tchi-tcu -'a Ø'u ki ||a''a-qa.  
Jeff kǐ[Pl.]-shoot-Rep Perf duiker Prep arrow-Pl.  
'Jeff shot at the duiker with arrows.'

Lecarme (1996) and Wiltschko (2003) show that Somali and Halkomelem Salish show morphological evidence for the existence of T(ense) within the nominal domain. The data are cited from Wiltschko (2003) (see also Galoway (1993) and Burton (1997)).

(1.10) Halkomelem: (Wiltschko 2003)

- a. í-lh tsel lám.  
Aux-Pst 2Sg.S go  
'I'm gone.' (Galoway 1993, 319)
- b. th'í:qw'e-th-omé-tsel-cha.  
punch-Trans-2Sg.O-2Sg.S-Fut  
'I will punch you.' (Galoway 1993, 317)
- c. te-l má:l-elh.  
D-1Sg.Poss father-Pst  
'my late father' (Burton 1997, 67)
- d. te-l swáqeth-cha.  
D-1Sg.Poss husband-Fut  
'my future husband'

The structures of CP and DP above have layered structures (for CP recursions, Iatridou and Kroch (1992), Hoekstra 1993). Bùlì, a Gur language of the Niger-Congo family spoken in the northern Ghana, provides morphological evidence. As shown below, Bùlì allows partial *Wh*-movement and a *Wh*-element appears between the two complementizers *àyīn* and *àlī/àtì*.

(1.11) Bùlì:

- Àtīm wē:nī àyīn ká bwà àlī/àtì Àmðak s<sup>w</sup>à.  
Àtīm said that F what C Àmðak owned
- 'What did Àtīm say that Àmðak owned?'
- 'Àtīm asked what Àmðak owned.'

In the nominal domains, the determiner *-mú* and the proximate demonstrative *dé*, for example, co-occur.

(1.12) Bùlì:

ná:-mú-dé  
cow-D-Dem

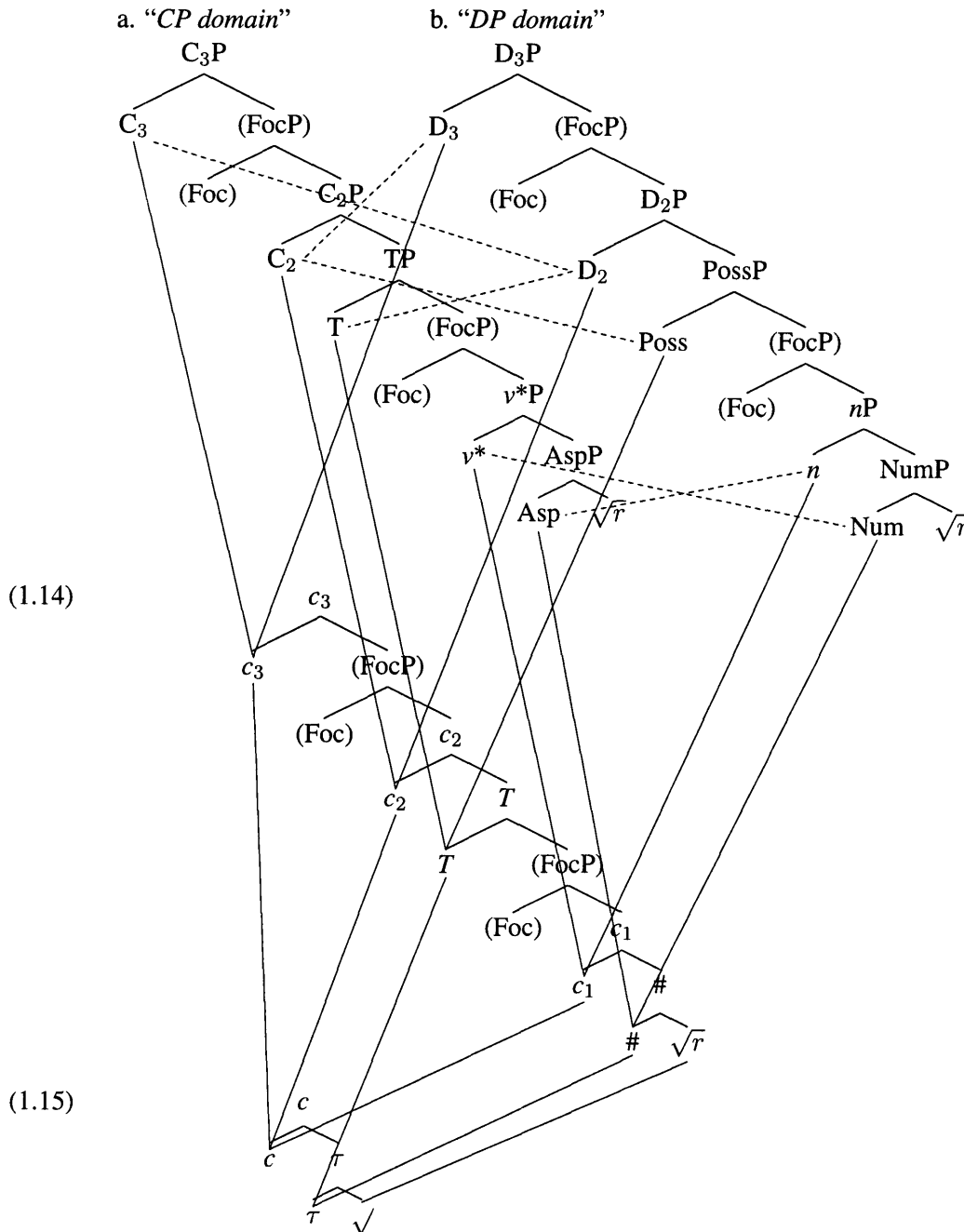
‘this cow’

The question to ask is, then, where these similarities come from. This is the other main theme of this dissertation.

### 1.2.2 Supercategorical Theory of CP/DP Symmetry

Building on the arguments for CP/DP parallelism reviewed above, I further propose that the surface symmetric structures in (1.13) are instantiations of the underlying supercategorical structure (1.14). I call this *Supercategorical Theory of CP/DP Symmetry*.

(1.13) SUPERCATEGORIAL THEORY OF CP/DP SYMMETRY



Under the Supercategorical Theory of CP/DP Symmetry, the symmetric structures in (1.13) are projections from the supercategorical structure (1.14). It is not the case that there are two different structures for DP and CP; rather, there is a single unique structure and those two apparently different syntactic objects –CP and DP– are created by each phase head ( $c_{1,2,3}$ ). This is indicated by the

solid lines in the above diagram. Let us explicate this in more detail.  $C_3$  and  $D_3$ , for example, are different manifestations of the supercategory  $c_3$ . So are  $C_2$  and  $D_2$  different realizations of  $c_2$ . What is labelled as  $c_1$  corresponds to  $v^*$  and  $n$  in familiar terms.  $\#$  in (1.14) is a head for Aspect/Number (recall Collins 2001a).  $T$  is a head for Tense. This is also assumed to be the head that plays a crucial role in Case assignment.  $T$  and  $\#$  are further assumed to reduce to a supercategory  $\tau$ .<sup>4</sup>

Furthermore, the Supercategorial Theory of CP/DP Symmetry has the following points of significance (1.16), which are discussed below.

- (1.16) a. Each head that is not a phase head  $c$  is category-neutral.  
 b. Each  $c$  head determines the categorial status of its complement.  
 c.  $c$  and  $\tau$  as a unit act as a probe for Case and agreement.

### 1.2.3 Category Determination

Under the Supercategorial Theory, CP and DP are just surface variants of a common syntactic structure. Their categorial differences come from whether  $c$  functions as a nominalizer or a verbalizer. I assume that categorial determination is done by categorial feature insertion at Transfer. If a [+N] feature is inserted at Transfer, it becomes “D”, while it becomes “C” if a [-N] feature is inserted.<sup>5,6</sup>

- (1.17) The categorial status of the complement of each phase head  $c$  is determined by the phase head  $c$  via categorial feature insertion at Transfer.

Let me explain the mechanism in more detail. If  $c_1$ , for example, gets a [-N] feature, it becomes  $v^*$  and the heads dominated by it become verbal (i.e.  $\# \rightarrow \text{Asp}$ ) and  $v^* \text{-Asp-}\sqrt{\tau}$  functions as a verb. If, on the other hand, a [+N] feature is inserted to  $c_1$ , it becomes  $n$  and the whole category functions as a noun (with  $\# \rightarrow \text{Num}$ ). This theory, as is obvious, is crucially built on the insight of Marantz (1997), who presents a compelling argument against Lexicalism and for a theory under which words are constructed in narrow syntax. On this view, the root category  $\sqrt{\tau}$  plays a crucial role; the root is category-neutral and gives rise to V/N lexical categories distinction upon merger with “small”  $v/n$  in narrow syntax.

Mithun (1999) gives an overview of some interesting data of North American Indian languages, where stems/roots are not morphologically distinguished between nouns and verbs, citing Sapir (1911, 1921) for Nootka, Frachtenberg (1922) for Coos languages, and Hoiyer (1931/33) for Tonkawa. Listed below is a pair of examples from Nootka. The article  $?i$  and the 3rd person indicative suffix  $-(m)a$  overtly make the distinction.

<sup>4</sup> $c$  in the supercategorial structure (1.14) is just an arbitrary label and nothing hinges on what it is called.

<sup>5</sup>One might think that Transfer is triggered by categorial determination. This is a plausible possibility but I leave the issue open here.

<sup>6</sup>Pesetsky and Torrego (2004) develop a different theory, where lexical categories are created by different types of what they call  $T_0$  heads.



- (1.18) Nootka: (Sapir 1921)
- a. inik<sup>w</sup>-ihl-ʔi  
'the fire in the house'
  - b. inik<sup>w</sup>-ihl-ma  
'it burns in the house.'

Elaborating on the insight of Marantz (1997), I further propose that higher phase heads ( $c_3$  and  $c_2$ ) have the same function as  $v/n$ ; they derivationally “determine” the categorial status –  $\pm N$  – of their complements at Transfer. Put differently, category “labels” are derivationally assigned at each phase level. Thus, a [+N] feature inserted into  $c_2$  or  $c_3$  nominalizes its complement categories. Let us consider the mechanism of categorial determination at  $c_2$  and  $c_3$  in further detail below.<sup>7</sup>

#### 1.2.4 Interweaving

An immediate consequence of the Supercategorial Theory of CP/DP Symmetry is that it naturally derives mixed category structures. Put another way, the CP and DP structures in (1.4) are just possible representations that are derived from a general schema in (1.14) through *interweaving*. This is indicated by the dotted lines. The theory predicts the existence of other structures with pieces of nouns and sentences “interwoven”.

- (1.19) The Supercategorial Theory of CP/DP Parallelism and Category Determination
- a. Phase One  $c_1$ :
    - i.  $v^*+\#\sqrt{r}$ : Verb
    - ii.  $n+\#\sqrt{r}$ : Noun
  - b. Phase Two  $c_2$ :
    - i.  $C_2+TP$ : Extended Verbal Projection of VP
    - ii.  $D_2+TP$ : Extended Nominal Projection of VP (=Gerunds)
  - c. Phase Three  $c_3$ :
    - i.  $C_3+C_2P$ : Extended Verbal Projection of FinP
    - ii.  $D_3+C_2P$ : Extended Nominal Projection of FinP (=Clausal Nominalization)

As we have seen,  $n/v^*$  function as category determiners for # and  $\sqrt{r}$ . The upshot of the proposed theory is that this process recurs at each phase:  $c$ . Thus nominalization can take place at three points in the derivation:  $c_1$ ,  $c_2$ , and  $c_3$ . Interesting cases arise when a [+N] feature is inserted into  $c_2$  or  $c_3$ , whose complement categories have been categorially determined as [-N] at an earlier stage of Transfer. If this happens at the second phase level  $c_2$ , it can give rise to *gerunds*. When  $c_3$  is

<sup>7</sup>The theory that I propose, however, is crucially different in one respect from Grimshaw’s theory of Extended Projections (Grimshaw 1991/2001): the category-determination process proceeds bottom-up for Grimshaw (i.e. categorial features are projected up from N/V), while it works top-down at each phase level in our theory. See Lefebvre and Muysken 1988 and Baker 2003 for different approaches.

merged with  $C_2P$  and a  $+n$  feature is inserted to  $c_3$  at Transfer,  $c_3$  becomes  $D_3$  and the whole clause ( $C_2P$ ) is nominalized.<sup>8</sup>

Languages vary as to how this clausal nominalization is realized. And this is one of the main points of discussions of this thesis. In this thesis, I focus on three such cases: Nominative Genitive Conversion (NGC), Head-Internal Relative Clauses (HIRC), Factive Constructions, and Predicate Cleft Constructions (PCC). Schematically, the structure can be represented as follows.



In these constructions, a D element, which is  $c_3$  under the CP/DP Symmetry, takes  $c_2P$  as its complement. Once a  $[+N]$  categorial feature is inserted into  $c_3$  at Transfer, nominalization takes place. This nominalization differs from nominalization at the  $c_1$  level in one significant point. Namely, at the  $c_1$  level, the complement is categorially neutral and hence a  $[+N]$  feature determines nominalization of the entire structure. However, at the  $c_2$  and  $c_3$  levels, the complements have already undergone categorial determination earlier in the derivation. That is, nominalization at the higher level causes “interweaving” of nominal and verbal properties.

As I show in this thesis, this nominalization manifests itself in various forms. In NGC, it is realized in Case-marking (nominative vs. genitive) and agreement in the internal syntax. In HIRC, the nominalization affects the external syntax. Namely, the entire clause functions as a “DP” externally, while its internal syntax shows a range of clausal properties. Yet another instance of nominalization is exemplified by PCC, where I argue that only a part of the internal syntax of  $c_2P$  –i.e. [Spec,  $c_2P$ ]– is nominalized.

- (1.21) Patterns of Nominalization by  $c_3$
- a. The internal syntax of  $c_2P$
  - b. The external syntax of  $c_3P$
  - c. The specifier of  $c_2P$

### 1.3 The $c$ - $\tau$ Relation Across Phases

I propose that structural Case assignment (valuation under Agree in our terms) is a function of a  $c$  head plus a  $\tau$  head. The CP/DP symmetrical structure expects three such relations for each of the phase units: CP, DP, and  $v^*P$  (and  $nP$ ).

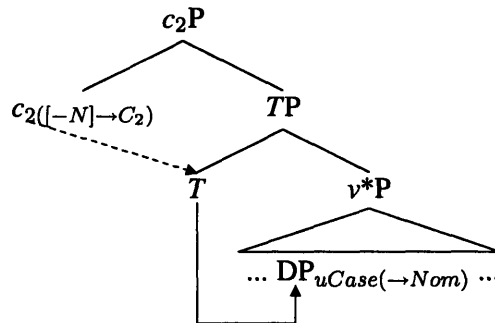
<sup>8</sup>(1.19) does not exhaust all the interweaving patterns logically derivable from  $[\pm N]$  feature combinations. In particular, it remains open whether there are any cases where PossP and  $D_2P$  are “verbalized” by the insertion of a  $[-N]$  feature on  $c_3$ .

### 1.3.1 The $c$ - $\tau$ System at the CP Phase

The hypothesis that nominative Case assignment involves C in addition to T has been suggested by a number of researchers (Watanabe 1993, Iatridou 1988/1993, Collins 1993, Hiraiwa 2001b, Pesetsky and Torrego 2001, Chomsky 2004a among others).

Building on and articulating the insights of those studies, I propose that nominative Case assignment is a result of the  $C_2$ -T relation.

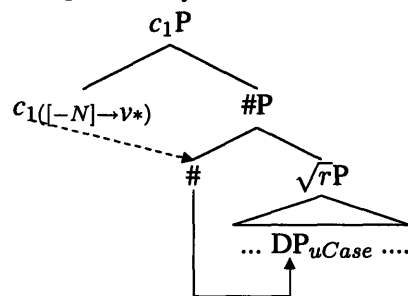
#### (1.22) The $c_2$ - $\tau$ Theory of Case: Nominative Case Assignment (Chapters 2 & 3)



### 1.3.2 The $c$ - $\tau$ System at the $v^*P$ Phase

From the parallelism between the phase heads  $C/v^*$  and  $T/Num/Asp$  –i.e.  $c$  and  $\tau$ – it follows that accusative Case assignment is also done under the  $c$ - $\tau$  relation. More specifically, I argue that the  $v^*$ - $Asp$  relation is responsible for accusative Case.

#### (1.23) The $c_1$ - $\tau$ Theory of Case: Accusative Case Assignment (Chapter 4)



Vainikka (1989) and Kiparsky (1998) observe that objective Case in Finnish is dependent on aspectual properties of the verb (See also Kratzer 2002. See also Ramchand 1997 for Scottish Gaelic). Pesetsky and Torrego (2004) further propose that Accusative Case is related to  $T_o$ , which is located below  $v^*$  and above V. In our current theory, this head corresponds to  $\tau$ .

#### (1.24) Finnish: (Kiparsky 1998)

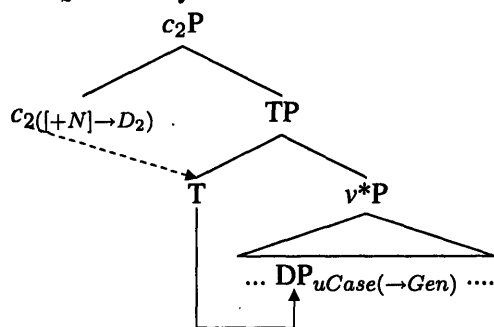
- a. Ammu-i-n      karbu-a.  
 shoot-Pst-1Sg. bear-Part.  
 'I shot at a/the bear'

- b. Ammu-i-n karbu-n.  
 shoot-Pst-1Sg. bear-Acc  
 'I shot a/the bear'

### 1.3.3 The $c$ - $\tau$ System at the DP Phase

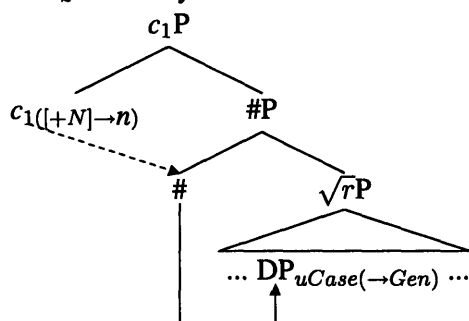
Finally, the same parallelism is also expected for genitive Case assignment. I investigate two such cases in this thesis. First, I argue that  $c_2$ -T relation, which parallels nominative Case assignment, becomes a probe that assigns genitive Case under certain syntactic conditions. This is naturally expected, if, as the Supercategorical Theory of CP/DP Symmetry indicates, "C" and "D" are surface instantiations of a single unique element  $c$ .

(1.25) The  $c_2$ - $\tau$  Theory of Case: Genitive Case Assignment (Chapter 3)



The other  $c$ - $\tau$  relation, the  $n$ -Asp relation, for genitive Case parallels the  $v^*$ -Asp relation for accusative Case. This is represented below.

(1.26) The  $c_2$ - $\tau$  Theory of Case: Genitive Case Assignment (Chapter 6)



In this thesis, I show another interesting case, where categorial determination and genitive Case assignment work together: a higher  $c_3$  nominalizes #P and assigns genitive Case to an object DP within the #P structure.

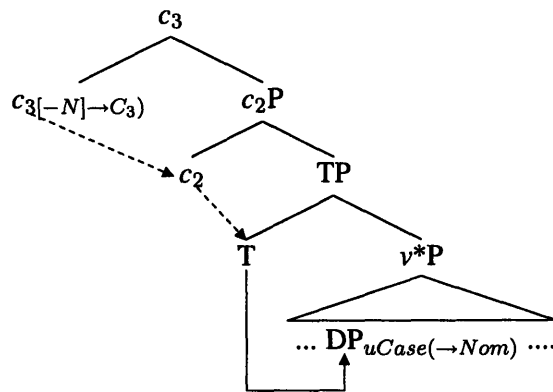
## 1.4 The Organization of the Thesis

The organization of this thesis is built on two main backbones.

Chapter 2 is the part of the thesis that extensively argues for the Multiple Agree Theory and its symmetric properties –Mirrorsymmetry and Centrosymmetry– through an extensive investigation of intricate agreement patterns in Icelandic.

Chapter 3 and Chapter 4 argue for  $c$ - $\tau$  relation under the Supercategorial theory of CP/DP Symmetry. Chapter 3 first shows the role of the “C-T” Relation (i.e.  $c_2$ -T Relation) played in Nominative Case assignment.

(1.27) The  $c_2$ - $\tau$  Theory of Case: Nominative Case Assignment (Chapter 3)



I argue, building on several pieces of empirical evidence, that genitive Case assignment becomes available under the same structural configuration when  $c_3$  acts as a nominalizer/determiner.

(1.28) a. Japanese:

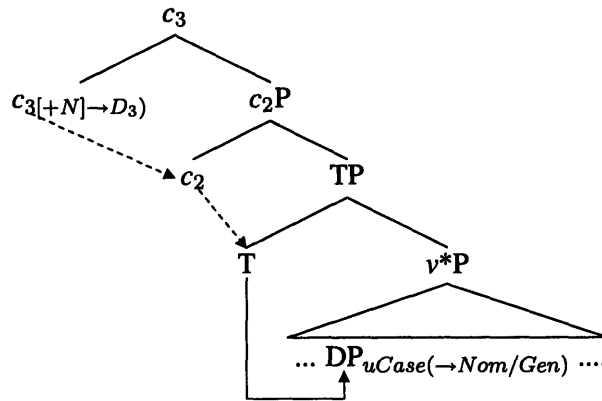
[ Kinoo John-**ga**/no kat-ta hon]-wa omosiro-i.  
 yesterday John-Nom/Gen buy-Pst.Adn book-Top interesting-Prs  
 ‘the book which John bought yesterday is interesting.’

b. Chamorro: (Chung 1998, 236)

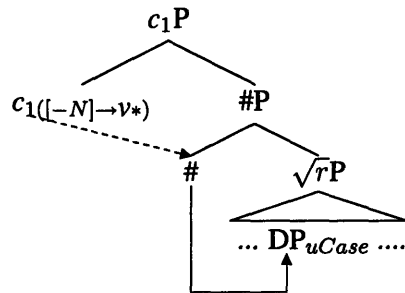
Hafa<sub>i</sub> fin’gasése-**nña** si Henry t<sub>i</sub> pära hagu?  
 What WH[Obj].wash-Prog.Agr SI Henry for you  
 ‘What is Henry washing for you?’

c. Cuzco Quechua (Lefebvre and Muysken 1988)

[ Xwancha-**q** runa-/\*ta riku-sqa-n] wasi-ta rura-n  
 Juan-Gen man-OBJ/Acc see-Nml-3 house-Acc build-3  
 ‘The man that Juan saw builds a house’

(1.29) The  $c_2$ - $\tau$  Theory of Case: Nominative/Genitive Case Assignment (Chapter 3)

If “C-T” is crucial for nominative Case, accusative Case will be also expected to be a parallel outcome given the proposed symmetric structures. Chapter 4 then pursues the same reasoning for Accusative Case assignment (Chomsky 2004b) under the CP/DP Symmetry Hypothesis.

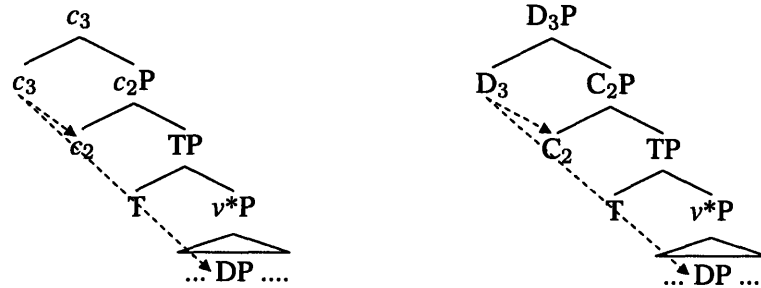
(1.30) The  $c_1$ - $\tau$  Theory of Case: Accusative Case Assignment (Chapter 4)

Chapter 5 deals with Head-Internal Relative Clauses (HIRC) and argues that HIRC is an instance of interweaving of CP and DP. In other words, HIRC has a structure in which  $c_2$ P is taken by  $c_3$ .

## (1.31) Bùlì:

- a. Àtìm dè [Àmòak àlì/\*àtì dà **mángò-kū:-y** dīem lá].  
 Àtìm ate Àmòak C bought mango-Rel yesterday Dem  
 ‘Àtìm ate the mango that Àmòak bought yesterday.’ (HIRC)
- b. Àtìm dè [**mángò-kū:-y** \*àlì/àtì Àmòak dà dīem lá].  
 Àtìm ate mango-Rel C Àmòak bought yesterday Dem  
 ‘Àtìm ate the mango that Àmòak bought yesterday.’ (HERC)

## (1.32) The Structure of HIRC: (Chapter 5)



In HIRC, the highest category functions as a noun but its internal syntax is fully sentential. I argue that the highest category determining head  $c_3$  enters into a Multiple Selection relation with  $c_2$  as well as the relativized internal head noun DP. The structure minimally differs from Factive Constructions in that in the latter, the selection relation is singular – $c_3$  selects  $c_2$  alone.

## (1.33) Bùlì:

[Àtìm àlì dè mángò-kú lá] tề Àmòak pò pìenti.  
 Àtìm C ate mango-D Dem gave Àmòak's stomach whiten

'That Àtìm ate the mango pleased Àmòak.'

'\*The mango that Àtìm ate pleased Àmòak.'

Although I do not discuss it in detail in this thesis, the same process –CP nominalization by  $c_3$ – is also observed as a form of Clausal Determiner Constructions cross-linguistically.

## (1.34) a. Bùlì:

Àtìm nàyì Àmòak lǎ.

Àtìm hit Àmòak Dem

'Àtìm hit Àmòak (as I said).'

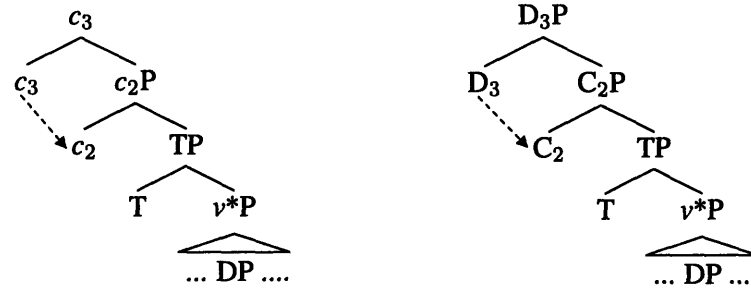
## b. Fòngbe:

c. Súnù ɔ gbà mótò ɔ ɔ.

man D destroy car D D

'The man destroyed the car.' (Larson and Lefebvre in press)

## (1.35) The Structure of Clausal Determiner Constructions/Factive Constructions: (Chapter 6)

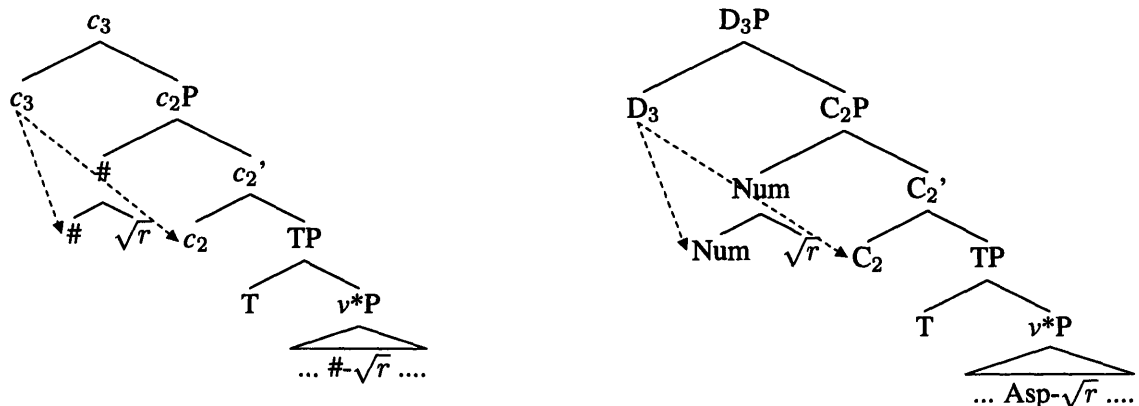


Chapter 6 reveals another instance of clausal nominalization under Predicate Cleft Constructions. In PCC, the focused fronted predicate is obligatorily nominalized.

- (1.36) a. (**ká**) **dē-kā** àlì/àtì Àtìm \*(**dè**) mángò-kǔ dīem.  
 F eat-Nml C Àtìm ate mango-D yesterday  
 'It is eating that Àtìm ate the mango yesterday.'
- b. (**ká**) **mángò-kǔ dē-kā** àlì/àtì Àtìm \*(**dè**) dīem.  
 F mango-D eat-Nml C Àtìm ate yesterday  
 'It is eating the mango that Àtìm ate yesterday.'

In PCC, the entire clause functions as a full CP clause, while a certain part of its internal structure –more specifically, an element in [Spec,  $c_2P$ – is nominalized by  $c_3$ . I argue that this manifests itself as nominalization of fronted predicates in PCC (e.g. Bùlì and Yòrùbá). In other words,  $c_3$  enters into a Multiple Select relation with the fronted category and  $c_2$  under the CP/DP Symmetry and nominalizes the fronted #P.

## (1.37) The Structure of Predicate Cleft Constructions: (Chapter 6)

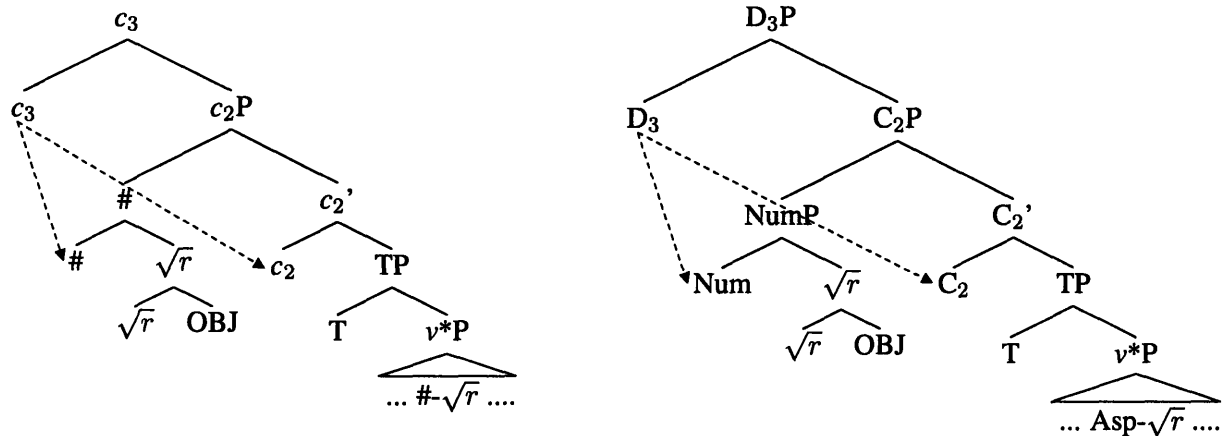


Furthermore, it is argued that it follows from the CP/DP Symmetry that  $c_3$ , which becomes  $D_3$ ,



selects the # head and this  $c_3$ - $\tau$  relation makes genitive Case assignment possible.

(1.38) The Structure of Predicate Cleft Constructions: (Chapter 6)



Finally, Chapter 7 deals with the function of the EPP in the C-domain and the evaluation of locality. It is argued that the EPP functions on C as well as T in Bùlì. I investigate varieties of  $\bar{A}$ -dependency in the language with a special focus on the complementizer alternation phenomena (*àlì/àtì*) and propose that the morphology of the complementizer is conditioned by EPP and its locality.

(1.39) Bùlì:

- a. ká wàná àlì/\*àtì tà nā:b?  
F who C have cow(Id)
- b. ká bwà àlì/àtì kpār<sup>w</sup>ā-wá tà?  
F what C farmer-D have  
'What does the farmer have?'



## Chapter 2

# Dimensions of Agreement

### 2.1 Introduction

Agreement phenomena are a manifestation of one of the two major syntactic operations: AGREE, with the other being MERGE (cf. Chomsky 2000, 2001, 2004a).<sup>1</sup> A study of Case and agreement thus illuminates fundamental aspects of the workings of the narrow syntax ( $D_{NS}$ ) and the interplay between Agree and Merge. Agreement has three major properties: (i) matching of features; (ii) a particular syntactic configuration/relation; (iii) locality. This chapter focuses on these three properties and articulates them in important ways. They are of great importance for current minimalist theorizing, since they have a direct bearing on the issue of the nature of the computational system ( $C_{HL}$ ): How much is it *derivational* or *representational*? (Epstein and Seely 2002, Brody 2002).

Once one adopts a (form of the) derivational/sequential model of the  $C_{HL}$ , the derivation  $D$  (= a set of operations) is inevitably dominated by “order/sequence” –i.e. an ordered sequence of operations in (2.1) (see Chomsky (1965) and Chomsky and Halle (1968) for early rule-based sequential derivational models). This raises an interesting theoretical question, namely, how strictly  $D$  needs to be ordered/sequential.

(2.1) Derivation  $D$  consists of a sequence of syntactic operations OP.

$$\text{Op1} \rightarrow \text{Op2} \rightarrow \text{Op3} \rightarrow \text{Op4} \rightarrow \dots$$

However, no serious attention has been hitherto paid to this question. Elsewhere (Hiraiwa 2001a, 2002a,d), I argued that the syntactic operation Agree, is a *derivationally simultaneous* operation and

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<sup>1</sup>I am most grateful to Noam Chomsky, Chris Collins, and Yoshi Dobashi for much extensive discussions, invaluable thoughts, and criticisms, which have lead to substantial revision. I also would like to thank Cedric Boeckx, Marcel den Dikens, Justin Fitzpatrick, John Frampton, Anders Holmberg, Howard Lasnik, Alec Marantz, Masashi Nomura, Christer Platzack, David Pesetsky, Norvin Richards, Halldor Sigurðsson, and Shoichi Takahashi. I would like to thank Thorbjörg Hróarsdóttir and Halldor Sigurðsson for providing me with Icelandic data and Rajesh Bhatt and Sharbani Banerji for Hindi data and helpful comments. Portions of this chapter have been presented at scattered opportunities; HUMIT 2000 at MIT (August 31, 2000), TiLT 2002 at the 25th GLOW Workshop (April 11th, 2002), the Workshop on Efficiency of Derivation at the 20th English Linguistics Society of Japan (November 15th, 2002), The CUNY Syntax Supper 2004 (September 14, 2004), and many others, during which period I have received highly insightful feedback.

therefore a one-to-many relation  $R$  is established simultaneously in a derivation. I called this the theory of MULTIPLE AGREE. The leading idea is that the sequentiality is at least relaxed enough to allow an “is simultaneous with” relation as well as a “is before/after” relation in a derivation. Let us call this notion DERIVATIONAL SIMULTANEITY. Derivational Simultaneity will change the picture of  $D$  as follows.

(2.2) Derivation  $D$  consists of a sequence of simultaneous syntactic operations OP.

$$\text{Op1} \rightarrow \begin{pmatrix} \text{Op2} \\ \text{Op3} \\ \text{Op}_n \end{pmatrix} \rightarrow \text{Op4} \rightarrow \dots$$

In this chapter, pushing further the notion of Derivational Simultaneity, I propose a PROBE THEORY OF PARALLEL DERIVATION (hereafter PTPD) under which Derivational Simultaneity plays a key role at each probe-level, and demonstrate that the proposed theory accounts for otherwise puzzling intricacies of Icelandic agreement.<sup>2</sup> In so doing, I argue that Agree exhibits two kinds of SYMMETRY: *Mirrorsymmetry* and *Centrosymmetry*.

The organization of this chapter is as follows. Section 2.2 articulates the theory of Multiple Agree and discusses its status in the context of  $D_{NS}$  and Derivational Simultaneity. Section 2.3 turns to the notion of Derivational Simultaneity in more detail and proposes that Derivational Simultaneity applies phase-by-phase, under the PROBE THEORY OF PARALLEL DERIVATION (PTPD). This, as it will be shown, is an optimal solution to the problem of cyclicity/Earliness. Another important topic of this section is the nature of a chain. I propose a refinement of the chain formation mechanism under the PTPD. Section 2.4 discusses intricacies of Icelandic agreement phenomena and demonstrates that the complexity is provided with a simple principled explanation under the PTPD. Section 2.6, building on the proposed theory, investigates the issue of optionality of agreement and the nature of the Person-Case Constraints. Section 2.7 discusses some profound implications of the PTPD and Chain Uniformity and adds further evidence for the inaccessibility of the edge of the edge of a phase discussed in Chomsky (2004, fall lectures). Section 2.8 summarizes the discussion.

## 2.2 Elements of Multiple Agree

### 2.2.1 Multiplicity

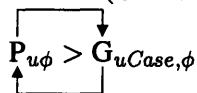
Before introducing a theory of Multiple Agree and Derivational Simultaneity, it is useful, I believe, to briefly describe the backdrop on which these conceptions rest.

In *Minimalist Inquiries* and *Derivation by Phase* (Chomsky 2000, 2001) Chomsky proposed a theory of AGREE, eliminating Spec-Head Agreement (Chomsky 1993) and feature-movement (Attract-F; see Chomsky 1995).

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<sup>2</sup>I am indebted to Noam Chomsky for insightful comments and suggestions on the earlier versions of this chapter, which have led to much improvement and refinement.

(2.3) AGREE (Chomsky 2000, 2001)



Agree (P, G), where P is a probe and G is a matching goal, “>” is a c-command relation and  $u\phi$  of P and  $uCase$  of G are valued.

Agree is an operation that values unvalued features  $-uF-$  of a probe and a goal. Unvalued features must be valued before the structures are sent to the interfaces, which cannot deal with unvalued features. Thus Agree is a crucial function of  $D_{NS}$ .

One of the important aspects implicit in the theory of Agree (2.3) is that it is a *binary* —viz. *one-to-one*— operation.

In the study of syntax in generative grammar, it has been generally assumed (with the exception of Ura 1996, 2000) that Case/Agreement must be founded on a strictly one-to-one relation (e.g. the Case Filter in LGB (Chomsky 1981) or George and Kornfilt’s observation that Case is tied with agreement (George and Kornfilt 1981), in that the latter implies that only one agreement can license only one Case and vice versa).<sup>3</sup> Set in a more general context, a belief in a one-to-one relation is abundant and not limited to Case and agreement —at least in the domain of syntax; to the best of my knowledge, it was first formalized by Koopman and Sportiche (1982) in the form of the *Bijection Principle*. Another case for a one-to-one relation is  $\theta$ -Theory and the theory of Selection (or subcategorization) (Chomsky 1981). Yet another instance is binary-branching structure-building (see Kayne 1984). In phonology, on the other hand, a one-to-many relation has received much support since Goldsmith’s insightful work (Goldsmith 1976) on Autosegmental Phonology (harmony/assimilation system).

In fact, multiple Case and agreement phenomena are more wide-spread than believed; four instances of multiple instantiations of Case and agreement are listed for illustration from Icelandic, Japanese, Hindi, and Malagasy.<sup>4</sup>

(2.4) Japanese:

Taro-**ga**/ni Hanako-**ga** me-**ga** waru-ku kanji-rare-ta (koto).  
Taro-NOM/DAT Hanako-NOM eye-NOM bad-INF think-PASS-PST (that)

‘(that) Taro thought that Hanako had a bad eyesight.’

<sup>3</sup>Fukui (1986) and Kuroda (1988) advance different theories of multiple Case phenomena in Japanese, but they are crucially different in that their approaches, in contrast with our present approach, fundamentally regard the apparent one-to-many relation as an illusion. I assume, in line with Ura (1996) that multiple nominatives are a realization of structural Case. See Chapter 3 for some evidence from ECM.

<sup>4</sup>I will examine Icelandic participle agreement and Hindi gender agreement in detail below. See Boeckx (2004) for more data and an analysis of Hindi Long-distance Agreement under Multiple Agree. For Japanese and Malagasy, see Hiraiwa (2001a) and Sabel (2004) for detailed discussions and arguments for Multiple Agree.

- (2.5) Icelandic: (H. Sigurðsson (p.c.); cf. Frampton and Gutmann 2001, Chomsky 2001, 2004a)

Ólafur hefur lílega tali einhvern hafa ver  
 Olaf(Nom) has(3Sg.) probably believed someone(Acc.M.Sg.) have been  
**drepinn.**  
 killed(Acc.M.Sg.)

‘Olaf has probably believed someone to have been killed.’

- (2.6) Hindi: (Bhatt 2003, Boeckx 2004, 3)

Vivek-ne kitaab parh-nii chaah-ii.  
 Vivek-Erg book.F read-Inf.F want-Perf.F

‘Vivek wants to read the book.’

- (2.7) Malagasy: (Sabel 2004)

N-ividy ny vary t-aiza Rabe t-amin’ ny talata?  
 Pst-buy the rice Pst-where Rabe Pst-at det Tuesday

‘Where did Rabe buy the rice on Tuesday?’

Multiple Case and agreement phenomena pose two significant challenges for the theory of Agree: the problem of multiplicity and the problem of locality. The first problem was addressed in Ura (1996, 2000), which led him to a theory of Multiple Feature-Checking. But under Agree, feature-movement being eliminated, the second problem becomes a serious challenge since it is not clear how one can see the distant target beyond the closest one. It is these two issues that I address below.

### 2.2.2 Multiple Agree: The Explanatory Framework

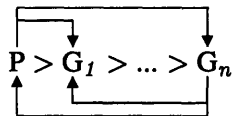
As a solution to the challenges, Hiraiwa (2001a) proposes to introduce derivational simultaneity into syntactic operations under MULTIPLE AGREE.

MULTIPLE AGREE (*multiple feature checking*) with a single probe is a single simultaneous syntactic operation; AGREE applies to all the matched goals at the same derivational point derivationally simultaneously. (Hiraiwa 2001a, 69)

Revising and elaborating the theory of Multiple Agree further, I propose (2.8).

- (2.8) MULTIPLE AGREE (P,
- $\forall$
- G)

Agree is a derivationally simultaneous operation AGREE (P,  $\forall$ G).



There are two fundamental properties to note in Multiple Agree: *Multiplicity* and *Simultaneity*. First, the operation Agree is unrestricted with respect to the number of elements (i.e. goals)

just as Merge —whether internal or external— is unrestricted with respect to the number of specifiers (Chomsky 2004a). Second, Multiple Agree articulates the notion of “sequential derivation” in Chomsky (1965) in the sense that it reveals the crucial role played by Derivational Simultaneity —more than one operation can be applied simultaneously.

I propose that the probe P searches for and locates multiple goals in parallel computation: namely, P matches  $G_1$  and P matches  $G_2$  virtually at the same time. This is made possible by the Principle of Simultaneity in (2.9).

(2.9) The Principle of Simultaneity

Apply operations simultaneously in parallel at a probe level.

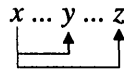
Under the principle (2.9), multiple relations are established simultaneously in parallel when more than one matching goal exists in the search domain of the probe P. Note that, under this conception, Multiple Agree should be a null hypothesis, just as Merge is unrestricted (see Chomsky 2004a). The superficial one-to-one correspondence of Case and agreement (e.g. in English) is nothing but a subcase of Multiple Agree. Therefore, irrespective of whether it is singular or multiple, I will use the term Multiple Agree.

The notion of sequential derivation necessarily presupposes ordering. The significant question is whether or not a sequence allows Derivational Simultaneity (i.e. the “is simultaneous with” relation). The notion of “simultaneity” in derivation at least traces back to Chomsky and Halle (1968). Simultaneous Rule Application was explicitly rejected in SPE, mainly for empirical reasons.

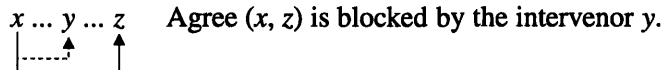
Derivational Simultaneity is closely tied with Multiplicity. Multiple Agree is a solution to the locality problem that (2.10a) and (2.10b) are representationally indistinguishable (see Hiraiwa 2001a). As long as empirical data support multiple Case/agreement phenomena, (2.10a) should be allowed. But this gives rise to a tension that (2.10b), which is a typical representation of a minimality violation, would also be allowed.

(2.10) The representational problem of locality (linear order irrelevant)

a. Multiple Agree



b. Intervention



In Hiraiwa (2001a) I proposed that locality should be relativized to Derivational Simultaneity and hence no locality consideration comes into the derivation (2.10a).

Since then, Multiple Agree has gained more empirical support (see Chomsky 2004a, Boeckx 2004, Collins 2003). Multiple Agree is a derivationally simultaneous operation. It, therefore, creates a derivational equidistance effect. As will be delineated in the next section, this does not mean, however, that an equidistance effect always holds. As I argue, valuation by multiple goals is subject

to a feature non-conflict condition under symmetric relations. Likewise, Multiple Agree does not allow  $x$  to attract  $z$  over  $y$ .<sup>5</sup>

### 2.2.3 Symmetry and Asymmetry of Multiple Agree

Agree is asymmetric in the sense that it starts only top-down. This is not an asymmetry intrinsic to the operation itself; rather it comes from the general architecture of derivation (c-command, bottom-up structure-building, the Locus Principle (Collins 2001b) etc.). On the contrary, I argue that the operation Agree itself is symmetric. I provide three kinds of symmetries of Agree here.

The first symmetry of (Multiple) Agree is simple, but is not explicitly detailed in Chomsky's version of Agree. The operation Agree is a complex bi-directional operation consisting of two symmetric relations.

(2.11) Decomposition of Multiple Agree:

- a. Value (P, G)
- b. Value (G, P)

Typically, Value (P, G) values uCase of G and Value (G, P) values  $u\phi$  of P. One might wonder how G “probes” for P “upwards”, even though G is c-commanded by, but does not c-command, P. But as stated at the outset of this section, the asymmetry between P and G only exists at the initiation of the operation Agree; once P starts probing and locates G, everything else is automatic.

The second symmetry exhibited by Agree is *Mirrorsymmetry* and *Centrosymmetry*. This is closely related to the first symmetry detailed just above. Note that in binary Agree (2.3) (which is just a subcase of Multiple Agree), the situation is simple; the two Value relations are bi-directional. But the situation changes once we consider the geometry of Multiple Agree. From (2.11) it follows that two natural symmetric relations should be allowed as in (2.12). I term them *Mirrorsymmetry* and *Centrosymmetry*, respectively.

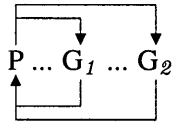
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<sup>5</sup>Whether Multiple Agree creates an equidistance effect for Move is an interesting issue. Icelandic facts argue that it does not; for example, there is no raising-over-subject in (i).

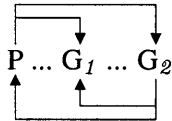
- (i) Icelandic: \*Raising-over-Experiencer (Thráinsson 1979)
  - a. \*Ólafur hefur virst þeim vera gáfaður?  
Olaf(Nom) has seemed 3Pl.(Dat) to-be intelligent  
'Olaf seemed to them to be intelligent.'
  - b. þeim hefur virst Ólafur vera gáfaður?  
3Pl.(Dat) has seemed Olaf(Nom) to-be intelligent  
'Olaf seemed to them to be intelligent.'



## (2.12) a. MIRRORSYMMETRY



## b. CENTROSYMMETRY



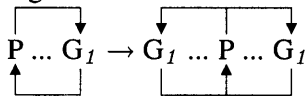
Multiple Agree establishes a one-to-many relation from probe P to goals G. This is typically an instance of Multiple Case valuation (the upper arrows in (2.12)). But  $\phi$ -valuation needs some caution. Under the mirrorsymmetry,  $G_1$  and  $G_2$  are both probes for the goal P. Under the centrosymmetry, the lowest  $G_2$  is the probe and the  $G_1$  and P are the goals. The question is empirical and in the discussions that follow, I demonstrate that both symmetric relations are attested in Icelandic.

But one word of caution is in order here. Multiple Agree appears to be incompatible with George and Kornfilt's thesis that agreement and Case are closely tied (George and Kornfilt 1981; see also Boeckx 2000 for support of the thesis). This is because of the fundamental asymmetry that while Case can be realized on multiple goals by a single probe, the probe cannot receive multiple valuation by the goals. Thus under the centrosymmetric Multiple Agree,  $G_1$  gets its uCase valued by P but it does not value P's u $\phi$ . The issue, I argue, is superficial; as long as Multiple Agree is on the right track, the essence of George and Kornfilt's thesis is to be reinterpreted as follows: Case and agreement are closely tied in the sense that u $\phi$  and uCase are essential factors for initiating the operation Agree, but there is nothing more beyond this initiation.

The third symmetric relation that Agree shows is *The Conservation Law of Agree*. When Merge applies to a goal G, giving Merge (P, G), the Agree relation between the probe and the goal is retained after Merge. The simplest case under consideration gives mirrorsymmetry between the right and the left as shown in (2.13). More concretely, in the following representation,  $G_1$  has undergone movement to the specifier of the probe P. According to the law, the relation between P and  $G_1$  before the movement is retained after the movement.

## (2.13) THE CONSERVATION LAW OF AGREE

Agree relations are unchanged and retained after Merge.



This principle will be shown to play an essential role in some instances of agreement that manifest an interplay of movement and agreement.

### 2.2.4 Efficiency of Multiple Agree

The operation Multiple Agree is essentially unrestricted in that it has to search all the goals in a given search domain (hence the universal quantification in (2.8)). The larger the search domain becomes, the more inefficient becomes the computation. Thus under Multiple Agree it is quite important to have the search computation minimized. Fortunately, phase theory (Chomsky 2000, 2001, 2004a) greatly contributes to this; it limits the search space to a phase domain due to the Phase Impenetrability Condition (PIC).<sup>6</sup> Secondly, Match also does significant work. With the Match condition, a probe P can only search for goals relevant to it. The Activity Condition (see Chomsky 2000, 2001) has a further restricting effect; P can see only matching and active goals within its search domain (i.e. phase).

Multiple Agree brings about one significant theoretical implication here. It should be noted that the notion of Derivational Simultaneity integrated in Multiple Agree means that there is no “time” (more precisely, *relative sequence*) at the point of its application. In a derivational model, the effect of simultaneity is non-trivial. Consider structure-building. Merge has an effect of building up a hierarchy among syntactic objects precisely thanks to the existence of a sequence or “timing” difference. Without any sequence, no hierarchy can ever exist. Suppose there is *x*, *y*, and *z*. We can obtain a hierarchical structure [*x* [*y*, *z*]] because *x* is Merged *after* *y* and *z* are Merged. Without sequence, no hierarchy emerges but *n*-ary branching,

Then the question is whether Multiple Merge as a single simultaneous operation exists. The existence is the null hypothesis given the universality of operation-level Derivational Simultaneity as allowed in Multiple Agree. Even a cursory look at the literature, however, shows the contrary. The operation Merge —Internal or External— is, as a matter of fact, apparently strictly binary (Kayne 1984, 1994; but see Yang 1999 for a relevant discussion against this). Why is this so? The answer seems to lie in the architecture of the language faculty. Syntactic objects created by  $D_{NS}$  are severely constrained by the interface conditions. In particular, Merge, in contrast with Agree, directly feeds linearization at the PF Interface, which, unlike the narrow syntax, requires every relation *R* to be linearly and uniquely ordered on the one-dimensional plane (see Kayne 1994 and Moro 2000 for relevant discussion. See also Collins (1994) for a proposal from an Economy principle.). Multiple Merge, as conceived above, comes into direct tension with the PF interface —one cannot utter two occurrences of a syntactic object simultaneously. Thus Multiple Merge is either prohibited or is allowed only under special circumstances, although the operation Merge is unconstrained in narrow syntax. In the last section of this chapter, I argue that in fact Multiple Internal Merge (as a single simultaneous operation) exists in the form of ATB-movement and varieties of raising out of DP.<sup>7,8</sup>

<sup>6</sup>N. Chomsky p.c. suggests an alternative theory of Phase, in which a probe can look into any lower phases and agrees with a goal within them, as long as it does not result in phonological changes. See also Nissenbaum (2001) for this version of the theory of Phase Impenetrability Condition.

<sup>7</sup>See Yang (1999) for an argument for Multiple External Merge.

<sup>8</sup>If there were a language system that had an equivalent of Merge but lacked the PF interface, Multiple Merge should be prominent in that system. It would be interesting to investigate Sign languages in this light.

### 2.2.5 Locality

Since Luigi Rizzi's important work on Relativized Minimality (Rizzi 1990, 2001, 2004b), it seems to be uncontroversial that locality is feature-based (see Minimal Link Condition in Chomsky (1995) and Defective Intervention in Chomsky (2000, 2001)). One controversial issue is at which point the locality principle is applied to a phrase marker. Under the current theorizing, there are only two possibilities; either (i) locality applies to a phrase marker at the point of application of syntactic operations (Collins 1997, Ura 1996, Hiraiwa 2002a among others) or (ii) it applies to a phrase marker at TRANSFER (see Chomsky 2001, 2004a). I assume that this is an empirical issue and hence demonstrate that in fact (ii) has to be right given empirical evidence we will see below.

- (2.14) Phase-Evaluation Theory of Locality (Chomsky 2004a)  
 Locality is evaluated on chains at TRANSFER.

## 2.3 Derivational Simultaneity and the Probe Theory of Parallel Derivation

### 2.3.1 Derivational Simultaneity and Efficiency of Computation

Now once we introduce Derivational Simultaneity into the picture, an interesting question emerges: how much simultaneity is allowed in a derivation  $D$  and how is it constrained? In other words, at which level does Derivational Simultaneity work? Consider (2.15).

- (2.15) Levels of Derivational Simultaneity
- a. All (an instantaneous model; D-Structure of GB/OT syntax)
  - b. Phase (CP/ $v^*$ P/DP; a "phase-internal" GB/OT syntax)
  - c. Probe (C, T,  $v^*$ , D)
  - d. Operation (Hiraiwa 2001a)

The lowest level of simultaneity (2.15d) is the one that I proposed in the theory of Multiple Agree; any given operation is derivationally simultaneous. The other end of the extreme (2.15a) is what might be called the totally instantaneous model, under which everything —Agree, Internal/External Merge, etc.— occurs at once. This is virtually what is assumed to happen in building D-Structure in the GB model or Optimality Theory. In between these two extremes, there are multiple possibilities, among which I consider two candidates. (2.15b) is a position that I believe Chomsky takes in BEA (Chomsky 2004a). Under this view, a derivation proceeds phase-by-phase; everything happens —including Agree and External/Internal Merge— simultaneously within a phase. (2.15c), on the other hand, restricts Derivational Simultaneity to each probe-level.

In the discussions that follow, I will advocate the probe-level Derivational Simultaneity (2.15c). Namely, I propose that syntactic operations always apply simultaneously at each probe-level and argue that this is an optimal solution of the problem of Earliness. An interesting case arises when a probe contains more than one probe feature. The Principle of Simultaneity (2.9) requires that all probe features apply syntactic operations simultaneously in parallel.

## (2.16) The Principle of Simultaneity

Apply operations simultaneously in parallel at a probe level.

I also propose, following Chomsky (2004a) (cf. also Hiraiwa 2001b), that C is the locus of Operator-features and  $\phi$ -features. At the CP probe-level, C comes with two features, Op-features and Agreement features (called  $\phi$ -features). At the CP phase-level,  $\phi$ -features percolate down to T, but C and T work as if they were a single system (independently supported by the conclusions reached by Watanabe (1993), Hiraiwa (2001b), Pesetsky and Torrego (2001) among others).<sup>9</sup>

## (2.17) Agreement features, Op-features, and EPP reside on C.

I assume that EPP can work on its own or in conjunction with the other two features or both (see Chapter 7). In the case of Icelandic, we can summarize all the three possibilities as follows (cf. Hiraiwa 2002a for a parametrization among Scandinavian languages).<sup>10</sup>

- (2.18) a. EPP<sub>Op</sub>:  $\bar{A}$ -movement to [Spec, CP]  
 b. EPP <sub>$\phi$</sub> : A-movement to [Spec, TP]  
 c. EPP: Stylistic Fronting to [Spec, TP]

It is crucial here to recall that Derivational Simultaneity applies at a probe-level. It follows, then, that Agree ( $T_\phi, DP_\phi$ ), Merge ( $T_\phi, DP_\phi$ ), and Merge ( $C_{Op}, DP_{Op}$ ) apply *simultaneously in a parallel fashion*. Let us call this model THE PROBE THEORY OF PARALLEL DERIVATION (henceforth PTPD).

It is important to add a few words. Under the assumption that C is the locus of features, the entire model gets closer to the BEA theory of “derivation-by-phase” in the sense that it looks as if everything is taking place at a phase-level. This is a result of two coincidences, however: C happens to be the locus of multiple probe features (see (2.17)) and C happens to be a phase head. It should be very important to bear in mind that nothing forces an application of a given operation to be “delayed” until the CP phase-level. Rather the PTPD is a consequence of an interplay of Derivational Simultaneity and the (incidental) fact that Op-features and  $\phi$ -features reside in C.<sup>11</sup> That is, if a functional head  $x$  that has an active probe feature  $uF$  has been introduced before the derivation reaches a phase level, Agree must apply no later than at that point. But the actual look is misleading since—at least under our theory in this thesis—there happens to be no such  $x$  within CP-phase (to the extent of our current understanding), and it happens to be the case that EPP, Op-features,  $\phi$ -features are all located in C. This gives rise to the appearance that syntactic operations

<sup>9</sup>Alternatively, the locus of  $\phi$ -features is T, but they need an activating agent, namely finite C. The choice of one of these alternatives does not affect the argument here. For convenience, I will use the expression like “T’s  $\phi$ -features” but it should be kept in mind that both  $\phi$ -features and Op-features start probing simultaneously. C. Collins (p.c.) suggests another possibility that C and T come with  $u\phi$ -features and that “feature percolation” corresponds to Agree (C, T).

<sup>10</sup>I do not know any clear case in Icelandic where pure EPP attracts an element to [Spec, CP], but one possibility is the expletive *það*, which has been argued (Sigurðsson 1989) to undergo movement to [Spec, CP]. See Sigurðsson (1989) for evidence. In Chapter 7, I argue extensively that *Búli* attests EPP on C, which attracts the closest element to [Spec, CP].

<sup>11</sup>Of course,  $u\phi$ -features are not limited to C: as we will see below, participles in Icelandic also have  $u\phi$ -features to be valued.

wait and apply only at a phase level. But this is an illusion and the PTPD is in this sense not a law or principle, but rather a mere consequence of Derivational Simultaneity.<sup>12</sup>

Another important point to note is that the PTPD is an optimal solution for the  $C_{HL}$  in the light of Cyclicity and Earliness.

(2.19) Apply syntactic operations (Merge and Agree) as soon as possible. (Pesetsky 1989, Collins 2001b)

Let us see what this means. Assume that we start with a root  $\sqrt{r}$  (“V”/“N” in traditional terms: see Chapter 6).  $\sqrt{r}$  may or may not select for an argument. Suppose it does and call the selected argument  $z$ . Then Merge ( $\sqrt{r}$ ,  $z$ ) occurs ( $z$  may have been constructed in another workspace in a parallel computation). Then  $C_{HL}$  takes  $v^*$ , leading to Merge ( $v^*$ ,  $\sqrt{r}$ ), followed by T, which is External-Merged with  $v^*PT$  and it is External-Merged with  $v^*P$ .

Notice that everything is strictly cyclic and sequential, conforming to Earliness Principle (2.19) so far. Now C is Merged with TP. This C, a phase head, happens to be the locus of EPP and  $\phi$ -features (and sometimes Op-features). To make the picture clearer, suppose that C comes with EPP,  $\phi$ -features and Op-features in this derivation. Then what is the optimal action for  $C_{HL}$  to conform to Earliness? The answer is simple, namely, Derivational Simultaneity: all the probe features start probing simultaneously, running parallel simultaneous computations and eliminating relative sequence between the operations. If, on the other hand, one of the features probed before/after another of them, there would be “waiting time”, which contradicts Earliness in a strict sense.

But if all of them probe simultaneously, it is a perfect solution for Earliness. The notion of Derivational Simultaneity is in a sense a privilege of  $D_{NS}$  and in fact a null hypothesis (Hiraiwa 2002a); it is free of the PF interface constraint of linearization; the linguistic sound system of human beings is a strict linear sequence of sounds, as stated in Section 2.2.<sup>13</sup>

### 2.3.2 Parallel Derivation

Probe-level Derivational Simultaneity in effect drives parallel computations because multiple operations can target the same phrase marker and hence the same single occurrence of an element. In other words, simultaneous access to the same single element by multiple probes is obviously a

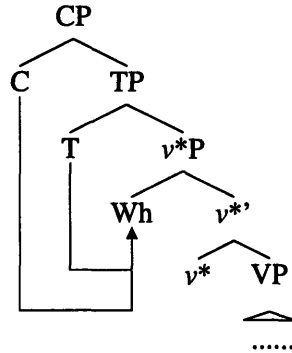
<sup>12</sup>The hard problem is how to ensure that EPP-driven  $\phi$ -features dislocate an element to [Spec, TP] not to [Spec, CP]. At a gross approximation, it is as if  $C_{HL}$  were trying to avoid congestion at the phase edge, distributing moved elements over different specifiers of different heads. This is to some extent similar to what happens in “Tucking in” in Richards (1997); the tucking-in movement apparently violates Cyclicity and the Extension Condition, but it is a perfect solution under what he calls Featural Cyclicity. The two cases differ in that the former takes place over two functional heads, but in terms of Featural Cyclicity, they are both fine.

<sup>13</sup>Strictly speaking, it is possible that basic tree-building by External Merge of functional heads (Merge (T,  $v^*P$ ), Merge (C, T) etc.) also occurs simultaneously with the other operations Agree/Merge. In this chapter, we have assumed, without argument, that  $C_{HL}$  can take one element at a time. Thus it is illicit for  $C_{HL}$  to select,  $v^*$ , root, and T at the same time and to Merge them together. Thus in reality, at a phase-level, nothing like a traditional tree exists. Rather all that exists are relations and chains (Imagine a space where functional/lexical heads are “floating” and they have various relations (Merge, Agree or Select with each other)). I leave the issue open here for future research. Thus I assume that applications of External Merge such as Merge ( $v^*$ , V), Merge (T,  $v^*P$ ) as well as Merge of arguments within  $v^*P$  are sequentially ordered. These create the familiar hierarchy, but it is not immediately clear how such a hierarchy is created if even External Merge is simultaneous.

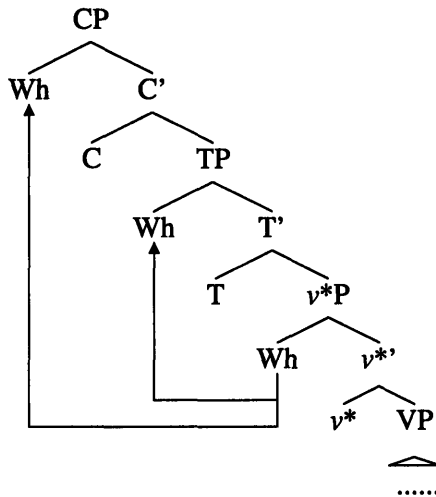
mirror image of Multiple Agree, which is simultaneous access of multiple elements by the same single element.

The effect of parallel derivation becomes apparent when the subject DP is a *Wh*-element. The probes C and T respectively access the same single *Wh*-element at the edge of  $\nu^*P$ , dislocating it to [Spec, CP] and [Spec, TP], simultaneously.

(2.20) Agree under the PTPD



(2.21) Internal Merge under the PTPD



One immediate consequence of the PTPD is that there is no  $\bar{A}$ -movement from a derived A-position (i.e. [Spec, TP]). To see why, consider again the derivation where C comes with  $\phi$ -features as well as Op-features. Both of these probe features start probing simultaneously in parallel. Suppose that the subject is a *Wh*-phrase. Internal Merge ( $T_\phi, DP_\phi$ ) and Internal Merge ( $C_{wh}, DP_{wh}$ ) apply simultaneously to the occurrence of the subject DP in [Spec,  $\nu P$ ]. This is because of the elimination of a sequence between the two operations. As it will be depicted later, this plays a crucial role in explicating the intricacies of Icelandic agreement.

It is probably helpful to clarify some suspicions raised by Epstein and Seely (2002) about the

notion of Derivational Simultaneity. Phase-level simultaneity may seem to be countercyclic and hence to violate Earliness, but that is only apparent; all the relevant probe features (Op-features,  $\phi$ , and EPP) reside in C. Or alternatively, T's  $\phi$ -features need to be activated by C. In either case, once C is merged, probes start probing simultaneously. Everything is cyclic. Derivational Simultaneity is an optimal solution to Earliness; if operations were not simultaneous, whichever probe acted first, the other would have to wait. But if they probe simultaneously, that is the most efficient and in fact the only way to satisfy Earliness Principle.<sup>14</sup> Epstein and Seely (2002) also point out that the derivational simultaneity leads to a non-derivational (or less derivational, I would say) theory. But I do not see any a priori conceptual problem with probe-level Derivational Simultaneity or with the "less derivational" character that it leads us to envision. As Brody (2002) correctly observes, any "derivational" theory would be at least weakly representational.<sup>15</sup>

### 2.3.3 On Chains

"Chain" in a traditional sense is a complex notion. To see this, consider a chain of the element *who* below.<sup>16</sup>

(2.22) Who likes the theory?

This chain consists of the following positions or occurrences.

(2.23)  $[_{CP} \textit{who} [_{C'} C [_{TP} \textit{who} [_{T'} T [_{v^*P} \textit{who} [_{v^*} v^* [_{VP} \textit{like the theory}]]]]]]]]]$

{*who*<sub>CP</sub>, *who*<sub>TP</sub>, *who*<sub>vP</sub>}

Each local movement is driven by EPP (conjunction of EPP and  $\phi$ - or Op-features). In this sense, the chain above is heterogeneous; in traditional terms, this entire chain consists of an A-movement chain and an  $\bar{A}$ -movement chain.

- (2.24) a. A-Chain: {*wh*<sub>TP</sub>, *wh*<sub>vP</sub>}  
 b.  $\bar{A}$ -Chain: {*wh*<sub>CP</sub>, *wh*<sub>TP</sub>}

There is another sense in which the  $\bar{A}$ -Chain above is heterogeneous; it involves the head of the A-Chain. Furthermore, the notion of A-/ $\bar{A}$ -movement has to be a mere notational convenience under the minimalist framework. Whereas it is empirically adequate, the distinction should be eliminated or derived from something else that already exists in the system. But where does it come from? The A-/ $\bar{A}$ -distinction cannot be reduced to phase-edge vs. non-phase edge positions (see the  $v^*P$  edge,

<sup>14</sup>See Hiraiwa (2001b) and Chapter 3 for the view that T's  $\phi$ -features probe in conjunction with C in Case and agreement phenomena in Japanese, Quechua, and Turkish. The other story is also theoretically possible, where C's  $\phi$ -features (metaphorically or physically) "percolate down" to T as pointed out by Noam Chomsky (p.c.). A study of feature distribution within DPs may provide a key to the issue. I leave the matter open here.

<sup>15</sup>Epstein and Seely (2002) cast doubt on Multiple Move, but I argue that it (more specifically, Multiple Internal Merge) does exist under certain conditions. See Section 2.7.4.

<sup>16</sup>I am deeply indebted to Noam Chomsky for extensive discussions and help with the ideas discussed in this section.

where the subject is in an A-position, but a shifted element is in an  $\bar{A}$ -position). The introduction of an A- vs.  $\bar{A}$ -feature distinction complicates the theory. A simple answer is, then, that the distinction is determined by the features involved; once a feature that is the trigger of a given movement is saturated, the chain is complete (see Hiraiwa 2003a). The notion of chain saturation brings to light an important aspect underlying the nature of a chain: chain formation is driven by “a feature”. So the chain (2.23) really consists of two feature chains with generalized pied-piping,  $CH_\phi$  or  $CH_{wh}$ . Then it seems natural to think that there are as many chains as there are features involved.

Now consider (2.23) under the PTPD. Both the probes  $\phi$ -features and Op-features start probing simultaneously and each of them access the same element, namely *who* in [Spec,  $\nu^*$ P]. Therefore, each forms a distinct chain with the target element in [Spec,  $\nu^*$ P], as shown in (2.21). The resulting chains formed are as follows.

- (2.25) a.  $Chain_{wh}: \{who_{CP}, who_{\nu P}\}$   
 b.  $Chain_\phi: \{who_{TP}, who_{\nu P}\}$

An Externally-Merged position (i.e. a thematic position) is, as it were, an intersection of multiple “dimensions”: A-movement takes place from there, while  $\bar{A}$ -movement starts from there, too. Now as a principle to deal with the uniformity of chains, I propose the following principle.

(2.26) CHAIN UNIFORMITY PRINCIPLE

Suppose a goal  $y$  has undergone External Merge with a probe  $h$  and then, another higher probe  $x$  has undergone Internal Merge with the goal  $x$ . Then:

- a. Merge ( $x, y$ ) splits a chain if features of  $x$  and  $h$  are non-uniform.  
 b. Merge ( $x, y$ ) unifies a chain if features of  $x$  and  $h$  are uniform.

The uniformity of a chain is determined by the features involved. I propose the following two classes of features.

- (2.27) a. Class A:  $\theta, \phi$   
 b. Class B: Op

Let us take the concrete case at hand. In this case,  $h$  is  $\nu^*$  the goal  $y$  is *who*, and the probe  $x$  is C’s Op-feature and T’s  $u\phi$ -features. Suppose that selectional features (e.g.  $\theta$ -features) and  $\phi$ -features form a uniform class, excluding Op-features—a natural assumption, given that the former are phase-internal features whereas the latter are edge-features. Then the end result of the chain formation is as follows. The  $\bar{A}$ -chain (i.e. movement from [Spec,  $\nu^*$ P] to [Spec, CP]) is split into two single-membered chains,  $Chain_{wh}: \{who_{CP}\}$  and  $Chain_\phi\{who_{\nu P}\}$ , and the A-chain (i.e. movement from [Spec,  $\nu^*$ P] to [Spec, TP]) is unified into  $Chain_\phi: \{who_{TP}, -who_{\nu P}\}$ , with the lower copy deleted.

- (2.28) a.  $Chain_{wh}: \{who_{CP}\}$   
 b.  $Chain_\phi\{who_{\nu P}\}$   
 c.  $Chain_\phi: \{who_{TP}, -who_{\nu P}\}$



This derives as a consequence that A-movement does not leave a trace/copy, as proposed in Lasnik (1999). At the same time, it also means that (intermediate steps of)  $\bar{A}$ -movement does not leave a trace/copy, either. This is a desirable result given the fact that successive cyclic movement of an object *Wh*-phrase via [Spec,  $v^*P$ ] to [Spec, CP] does not interfere Agree (T, SUBJ). This point is illustrated in Section 2.4.<sup>17</sup>

So far the arguments have been purely conceptual. In the next section, I will show that the mechanism provides a principled explanation for a complicated Icelandic agreement system, which is unexpected under previous frameworks.

## 2.4 Dimensions of Agreement in Icelandic

In this section, we will examine the intricacies of Icelandic agreement phenomena in detail and demonstrate how Multiple Agree and the PTPD explain these facts, disentangling the threads of intricacies one by one.

Before starting, I will make explicit some assumptions about Icelandic. The following two are of particular importance. First, I assume that objects in Dative-Nominative constructions, both dative and nominative elements are quirky: they have uCase and an inherent Case.

(2.29) In Dative-Nominative configurations:

- a. “Dative” subject DPs have uCase as well as inherent dative Case.
- b. “Nominative” object DPs have uCase as well as inherent nominative Case.

Second, I make explicit the assumptions about default number agreement (i.e. 3rd person singular) in Icelandic. The first clause is an empirical observation based on the facts that only nominative elements can control agreement in Icelandic (see Sigurðsson 1996). The second clause will be clarified in the next section.

(2.30) Default agreement obtains in either of the following structures:

- a. T’s only goal G is a quirky element.
- b. T’s goals have different feature values.

Icelandic exhibits a subject-predicate agreement (see Sigurðsson 1989, 1996 among many others). Subject-predicate agreement in Icelandic involves number and person.

(2.31) Icelandic: (Sigurðsson 1996)

- a. Stráarnir            **leiddust/\*leiddist.**  
    boys(D.Nom.Pl.) waked-hand-in-hand(3Pl./\*3Sg)  
    ‘The boys waked.’

<sup>17</sup>C. Collins (p.c.) points out that the Chain Uniformity Principle makes it harder to capture phenomena that have been attributed to chains (e.g. reconstruction). I do not have any good solution to this issue. Technically, the issue might be solved if the chain splitting/unification takes place after syntactic objects have been transferred to the C-I interface, but ultimately, a more substantial explanation will be required.

- b. Við **höfðum**/**\*hafði** lesið bókina.  
 we(1Pl.) had(1Pl./\*dflt) read book(D.Acc.Sg.)  
 ‘We had read the book.’

Participles in Icelandic also show agreement with subjects. Participle agreement involves number, gender, person, and Case.

(2.32) Icelandic: (Sigurðsson 1996)

- a. Stelpurnar voru **kosnar**.  
 girls(D.Pl.F.Nom) were elected(Pl.F.Nom)  
 ‘The girls were elected.’
- b. Strákarnir voru **kosnir**.  
 boy(D.Pl.M.Nom) were elected(Pl.M.Nom)  
 ‘The boys were elected.’

The fact that participles agree in Case is shown in ECM/Raising-to-Object constructions as we see in the discussion below.

(2.33) Icelandic: (H. Sigurðsson p.c.; Frampton and Gutmann 2001, Chomsky 2001, 2004a)

Ólafur hefur lílega tali **einhvern** hafa ver  
 Olaf(Nom) has(3Sg.) probably believed someone(Acc.M.Sg.) have been  
**drepinn**.  
 killed(Acc.M.Sg.)

‘Olaf has probably believed someone to have been killed.’

With this background in mind, let us go into intricacies of agreement in Icelandic.

### 2.4.1 Symmetry of Agree

Holmberg and Hróarsdóttir (2003) report an interesting observation about agreement in Transitive Expletive Construction (TEC). As shown in (2.34), if the intervening quirky dative is singular, plural agreement is blocked (2.34a). If, on the other hand, both the intervening quirky experiencer and the downstairs nominative subject are plural, plural agreement becomes licit or remarkably improves, while singular/default agreement is also allowed as in (2.34b). It is important to note that singular/default agreement in (2.34a) and plural agreement in (2.34b) do not come from the quirky dative elements. (2.34c) shows that the quirky dative cannot value the probe’s  $u\phi$ -features; even if the quirky dative is plural. Plural agreement is not possible unless the nominative object is also plural.<sup>18</sup>

<sup>18</sup>Halldor Sigurðsson (p.c.) pointed out to me that there are some speakers (including himself) who find the plural agreement in (2.34a) fine. In other words, these speakers do not detect any intervention effects in those constructions. This difference may be explained in terms of syntactic differences of TEC between the types of speakers; for those who find (2.34a) good with plural agreement, TEC is probably derived by multiple specifiers, where both the expletive and

## (2.34) Icelandic: TEC (Holmberg and Hróarsdóttir 2003, 2004)

- a. það **finnst**/\***finnast** einhverjum stúdent tölvurnar ljótar.  
EXPL find(Sg./Pl.) some student(Dat.Sg.) computers(D.Nom.Pl.) ugly  
'Some student finds the computers to be ugly.'
- b. það **finnst/finnast** mörgum stúdentum tölvurnar ljótar.  
EXPL find(Sg./Pl.) many student(Dat.Pl.) computers(D.Nom.Pl.) ugly  
'Many students find the computers to be ugly.'
- c. það **finnst**/\***finnast** mörgum stúdentum tölvan ljótar.  
EXPL find(Sg./Pl.) many student(Dat.Pl.) computer(D.Nom.Sg.) ugly

the associate occupy [Spec, TP] and make way for agreement between T and the downstairs subject. On the other hand, for the other type of speakers, TEC does not involve multiple specifiers; only the expletive occupies [Spec, TP], leaving behind the associate in-situ and hence the latter intervenes between T and the nominative object.

The prediction seems to be partially borne out. First, for H. Sigurðsson, the embedded quirky subject cannot remain within the embedded clause in TEC. Rather, it has to undergo raising into the matrix clause, presumably [Spec, TP] (EXPL *það* in Icelandic has been considered to be in [Spec, CP]. See Sigurðsson (1989) for detailed discussions).

## (i) Icelandic: (H. Sigurðsson p.c.)

- a. \*það hefur virst **einhverjum stúdent** líka hestarnir.  
EXPL have seemed some student(Dat.Sg) to-like horses(D.Nom.Pl.)  
'It seems that some student likes the horses.'
- b. það hefur **einhverjum stúdent** virst líka hestarnir.  
EXPL have some student(Dat.Sg) seemed to-like horses(D.Nom.Pl.)  
'It seems that some student likes the horses.'

In Icelandic, first conjunct agreement is observed, when an associate is in-situ as shown in (ia). If the associate is moved to [Spec, TP] as in (iib), number agreement is forced and hence only plural agreement is licit.

## (ii) Icelandic (H. Sigurðsson p.c.)

- a. það **?hefur/hafa** verið drepin maður og kona.  
EXPL has(Sg./have(Pl.)) been killed(Nom.Pl.Neuter) man(Nom.Sg.) and woman(Nom.Sg.)  
'There have been killed a man and a woman.'
- b. það **\*hefur/hafa** maður og kona verið drepin.  
EXPL has(Sg./have(Pl.)) man(Nom.Sg.) and woman(Nom.Sg.) been killed(NOM.PL.NEUTER.)  
'There have been killed a man and a woman.'

H. Sigurðsson (p.c.) indicates that he finds plural agreement strongly preferred in the case of TEC in (iii). Given the facts in (ii), (iii) shows that the associate external argument is moved to [Spec, TP].

## (iii) Icelandic (H. Sigurðsson p.c.)

það **??hafa/hefur** maður og kona stundum máladh bílana rauða.  
there has/have man(Nom.Sg.) and woman(Nom.Sg.) sometimes painted cars(D.Acc.Pl.) red

'A man and a woman have sometimes painted the cars red.'

A further expectation is that speakers who find intervention effects in TEC should allow partial agreement in (iii) and should also allow the word order (ia), not (ib). Whether this turns out to be true remains to be seen at this point.

‘Many students find the computer to be ugly.’

Sigurðsson (1991) convincingly demonstrates that it is impossible for the quirky dative subject to value uNumber on T. Consider (2.35). Notice that the quirky dative subject, being plural, cannot determine plural agreement on T. It should also be noted that the uGender feature cannot be valued by the quirky dative either, and hence default agreement appears.

(2.35) Icelandic: (Sigurðsson 1996, Boeckx 2000, 357)

Stelpunum var hjápað/\*hjálpaðir/\*hjálpuðum.  
girl(Dat.D.Pl.F) was(3Sg) helped(Dflt.)/helped(Nom.Pl.M.)/helped(Dat.Pl.M)

‘The girls were helped.’

The presence of a nominative object makes agreement possible.

(2.36) Icelandic: (Sigurðsson 1991, 334)

- a. Okkur hafði leiðst.  
us(1Pl.Dat) had(dflt) bored  
‘We had been bored.’
- b. Okkur höfðu leiðst strákarnir.  
us(1Pl.Dat) had(3Pl.) bored students(D.Nom.Pl.)  
‘We had been bored by the students.’

This establishes that agreement in Icelandic is nominative-controlled, as it has been observed in the literature (Sigurðsson 1991, 1996 among others).

The same phenomenon is observed with TEC with a DAT-NOM raising complement clause (2.37). Plural agreement with the lowest nominative object becomes possible when the intervening embedded quirky dative is also plural.

(2.37) Icelandic: TEC (T. Hróarsdóttir p.c.)

- a. það virðist/\*virðast einhverjum stúdent líka hestarnir.  
EXPL seem(Dflt./Pl.) some student(Dat.Sg) to-like horses(D.Nom.Pl.)  
‘It seems that some student likes the horses.’
- b. það virðist/virðast mörgum stúdentum líka hestarnir.  
EXPL seem(Dflt./Pl.) many students(Dat.Pl.) to-like horses(D.Nom.Pl.)  
‘It seems that many students like the horses.’
- c. það virðist/\*virðast mörgum stúdentum líka hestur.  
EXPL seem(Dflt./Pl.) many students(Dat.Pl.) to-like horse(Nom.Sg.)  
‘It seems that many students like a horse.’

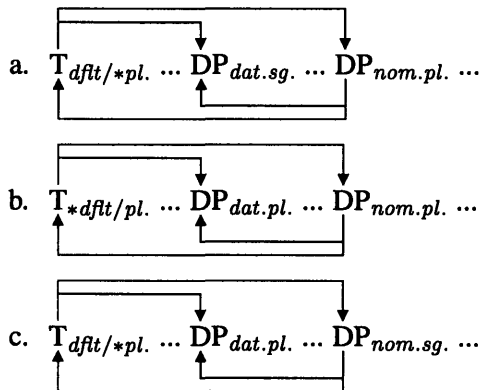
The “across-the-board” agreement pattern is not limited to TECs. The same pattern holds even if the expletive is replaced by the matrix quirky dative experiencer as in (2.38).

(2.38) Icelandic: (T. Hróarsdóttir p.c.)

- a. Mér **virðist/\*virðast** einhverjum stúdent líka hestarnir.  
 me(1Sg.Dat) seem(Dflt./Pl.) some student(Dat.Sg) to-like horses(D.Nom.Pl.)  
 ‘It seems to me that some student likes the horses.’
- b. Mér **virðist/virðast** mörgum stúdentum líka hestarnir.  
 me(1Sg.Dat) seem(Dflt./Pl.) many students(Dat.Pl.) to-like horses(D.Nom.Pl.)  
 ‘It seems to me that many students like the horses.’
- c. Mér **virðist/\*virðast** mörgum stúdentum líka hestur.  
 me(1Sg.Dat) seem(Dflt./Pl.) many students(Dat.Pl.) to-like horse(Nom.Sg.)  
 ‘It seems to me that many students like a horse.’

How can we make sense of these facts? The key is two kinds of Symmetry of Agree that I briefly described in Section 2.2.3; the mystery resolves once we admit a “reversed” symmetry – Centrosymmetry – for the probe-goal relation. This is more than a mere metaphor; a one-to-many relation from top-to-bottom is redefined as a one-to-many relation from bottom-to-up. Consider the point of locality evaluation below.

(2.39) The Centrosymmetry of Multiple Agree and Locality

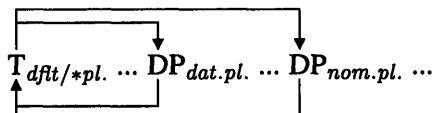


In (2.39a), the “probe” plural number feature of the  $DP_{nom}$  cannot give a plural value to the “goal”  $u\phi$ -features, because there is an intervening quirky  $DP_{dat}$  with a conflicting value (i.e. SG. vs. PL.). Hence the  $u\phi$ -features of T must be valued as default. In (2.39b), on the other hand, the intervening quirky  $DP_{dat}$  has the same value and hence does not trigger intervention. Under the centrosymmetric Multiple Agree,  $DP_{nom}$ ’s number feature [+PL.] establishes Multiple Agree with  $DP_{dat}$ . Since  $DP_{dat}$  also has [+PL.] value, no locality problem occurs and  $DP_{nom}$  successfully values  $u\phi$ -features of T as plural. Likewise in (2.39c), the probe [+SG.] number feature is blocked by the intervening [+PL.] number feature. Thus plural agreement is blocked and default agreement obtains.

Thus across-the-board agreement follows from the centrosymmetric Multiple Agree. As we have seen, however, a sentence such as (2.34b) also allows default agreement. I argue that default agreement is a product of mirrorsymmetric Multiple Agree. Recall that the two kinds of agreement symmetry are always options in our theory. Crucially,

Consider the derivation below.

(2.40) The Mirrorsymmetry of Multiple Agree and Locality



Recall that the quirky dative cannot value  $u\phi$ -features of the probe. Thus while  $DP_{dat}$  gives a default singular value,  $DP_{nom}$  gives plural value, which results in a conflict. Thus default agreement obtains.

The following example is subsumed under the same mechanism, but it is of more interest because it helps us to empirically choose between the Mirrorsymmetry and the Centrosymmetry of Agree discussed in Section 2.2.3.

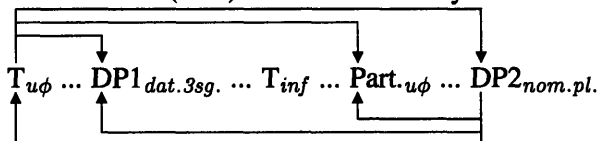
(2.41) Icelandic;

Mér        **hefur**<sup>/?</sup> **hafa** alltaf virst    honum    hafa verið **\*selt**<sup>/o.k.</sup> **seldar** þessar  
 1Sg.(Dat) has/have        often seemed 3Sg.(Dat) have been sold(Sg./Pl.)    these  
 bækur                    á alltof fár verði.  
 books(Nom.Pl.) at far-too high price

'It has often seemed to me that he has been sold these books at far too high a price.'  
 (Schütze 1997)

Consider the stage of locality evaluation at TRANSFER. Note that the sentence has no phase boundary and hence the domain on which the C-T probe operates under the PTPD is the whole sentence.

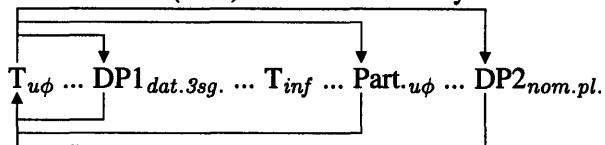
(2.42) Derivation of (2.41) under the Centrosymmetric Multiple Agree



At TRANSFER, locality of  $\phi$ -agreement is evaluated, where the probe is the  $\phi$ -features (number) of the bottom  $DP2$  and the goals are  $u\phi$ -features of Part. and T. The first goal that the probe encounters is  $u\phi$  of Part. Since the relation is local, the latter is valued as plural. The next goal that the probe finds is  $\phi$  of  $DP1$ , whose number feature is intrinsically valued as singular. Thus the plural agreement cannot extend beyond this intervenor and hence the matrix T is valued as default. The bottom-up directionality of  $\phi$ -agreement just follows from the centrosymmetric theory of Multiple Agree.

The state of affairs, in contrast, cannot be explained if Multiple Agree is restricted to a mirrorsymmetric relation. To see this, consider the relevant stage of derivation below.

(2.43) Derivation of (2.41) under the Mirrorsymmetric Multiple Agree



Now, everything being equal, there is no way for the participle to get a plural value from the  $DP2_{nom.pl.}$  since they are not in a probe-goal relation. One might say that the uNumber feature can be valued by T, but T in this sentence cannot get a plural value and hence is realized default. Therefore, there is no way for T to value the uNumber feature of the Part. as plural even in an indirect/transitive way. The mirrorsymmetric theory of Multiple Agree, thus, cannot explain the facts.

It should be clarified here once again that feature value conflict does not prevent Multiple Agree. Rather, Multiple Agree itself is automatic as long as feature matching (see Rizzi 2004b) (not feature value matching) is satisfied. What value a probe gets from multiple goals depends on the kind of symmetry that is attested and the goals' actual values.

### 2.4.2 A-Movement and Agreement

Under usual circumstances, agreement is local —local in the sense that it does not allow an intervenor between a probe and a goal. Compare (2.44). In each example, the intervening quirky element has been A-moved to [Spec, TP] and the probe T agrees with the nominative element downstairs, manifesting plural number agreement. These facts show that A-movement bleeds intervention. Putting it another way, an copy of A-movement is invisible for Agree (Inactive Trace Invisibility in Chomsky 2001) (See Sigurðsson 1996, 2000 and Boeckx 2000 for a detailed study on Icelandic agreement). Note that agreement in these examples are forced and default agreement is not possible.<sup>19</sup>

<sup>19</sup>The downstairs nominative element, if definite, must be “shifted” to the edge of vP. This can be shown by the negative adverb *ekki*. Note that this movement conforms to the general constraint of Holmberg’s Generalization (Holmberg 1986, 1999). That is, when V-to-T of the main verb is blocked, the shifting of the downstairs nominative element is also blocked, even if it is definite.

(i) Icelandic:

- a. Mér **virðist**/\*?**virðast** (\*ekki) Jóni (ekki) líka hestarnir.  
1Sg.(Dat) seem(Dflt./Pl.) (Neg) John(Dat) (Neg) to-like horses(D.Nom.Pl.)  
'It does not seem to me that John like the horses.'
- b. Mér **hefur**/\*?**hafa** (\*Jóni) ekki virðist Jóni líka hestarnir.  
1Sg.(Dat) has/have (John(Dat)) Neg seem John(Dat) to-like horses(Nom.Pl.)  
'It does not seem to me that John like the horses.'

(2.44) Icelandic:

- a. Henni <sup>??</sup>/\***leiddist/leiddust** strárnir.  
 her(D) bored(Dflt.)/bored(3Pl.) boys(Nom.D.Pl.)  
 ‘She found the boys boring.’
- b. Henni <sup>\*?</sup>**mistókst/mistóust** allar tilraunirnar.  
 her(3Sg.Dat) failed(Dflt.)/failed(3Pl.) all attempt(Nom.Pl.D)  
 ‘She failed in all the attempts.’ (Sigurðsson 1996, 26)

The same point is strengthened by the following examples in (2.45), which involve raising infinitives. Again, A-movement of the quirky dative elements makes number agreement with the downstairs nominative objects possible. But these examples differ from (2.44) in that number agreement is only optional.

(2.45) Icelandic:

- a. Honum **eru** taldir hafa verið gefnir **peningarnir**.  
 3Sg.(Dat) are(Pl.) thought to-have been given(Nom.M.Pl.) money(Nom.M.Pl.)  
 ‘The money is thought to have been given to him.’ (Boeckx 2000, 359)
- b. Jóni **virðist**<sup>(?)</sup> **virðast** t<sub>Jóni</sub> líka **hestarnir**.  
 John(Dat) seem(Dflt./Pl.) to-like horses(D.Nom.Pl.)  
 ‘John seems to like the horses.’ (Hiraiwa (2002d))
- c. Mér **finnst/finnast** tölvurnar ljótar..  
 1Sg.(Dat) find(Sg./Pl.) computers(D.Nom) ugly(Nom)  
 ‘I find the computers ugly.’ (Holmberg and Hróarsdóttir 2003)
- d. Einhverjum stúdent **finnst/finnast** tölvurnar ljótar.  
 some student(Dat.Sg) find(Sg/Pl.) computers(Nom.D.Pl.) ugly  
 ‘Some student finds the computers to be ugly.’

In (2.46), on the other hand, plural agreement is blocked as shown in the preceding section; this is because whereas the highest intervening quirky element has been dislocated to [Spec, TP], the downstairs intervening quirky element is still in the domain of the probe T (see Watanabe 1993, Sigurðsson 1996, Schütze 1997, Boeckx 2000).

(2.46) Icelandic:

- Mér **virðist**/\***virðast** Jóni líka hestarnir.  
 1Sg.(Dat) seem(Dflt./Pl.) John(Dat) to-like horses(D.Nom.Pl.)  
 ‘It seems to me that John likes the horses.’ (Boeckx 2000)

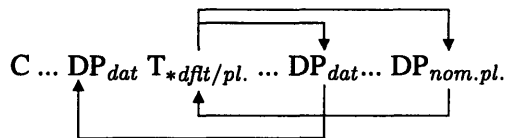
(2.47) A-movement bleeds intervention.

The derivation receives a natural explication under the PTPD. Once  $C_\phi$  is Merged, the probe  $\phi$ -features probe and Agree with the quirky dative as well as the object DP via Multiple Agree.



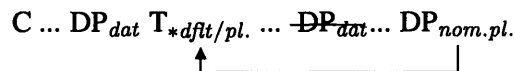
This results in valuation of nominative Case on the quirky element and the object DP, while the nominative Case is not morphologically realized on the quirky element (see Boeckx 2000, Chomsky 2001). Note that although (2.48) has been described as if there is an ordering between the two operations Agree and Merge, they are taking place derivationally simultaneously conforming to the PTPD. Merge (T, DP<sub>dat</sub>) results in a unification of the occurrences of the goal since the chain is uniform.

(2.48) The Derivation of (2.45) under the PTPD



Now at TRANSFER, locality is evaluated. The representation of chains at TRANSFER is as follows.

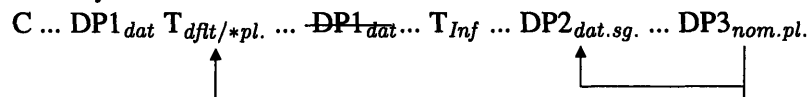
(2.49) Locality Evaluation at TRANSFER



Since the A-movement of the quirky element does not leave a copy in [Spec, v\*P], there is nothing that intervenes between T and the downstairs nominative object.

This contrasts with (2.46). T Agrees with three goals, two quirky datives and the object DP by Multiple Agree, valuing the nominative Case on the latter. Now consider the representation at TRANSFER.

(2.50) Locality Evaluation at TRANSFER



DP1 no longer intervenes, due to the Chain Uniformity Principle, but the DP2 does. The probe plural number feature of DP3 tries to Agree with the DP2 in vain (because of the feature value mismatch) and hence the plural agreement between DP3 and T is prohibited, leading to the default valuation.

### 2.4.3 $\bar{A}$ -Movement and Agreement

It is a remarkable discovery, made independently in Holmberg and Hróarsdóttir (2002, 2003, 2004) and Hiraiwa (2002d), that  $\bar{A}$ -movement interacts with agreement phenomena in a rather unexpected way —unexpected at least under standard assumptions. The facts come in two kinds, which I illustrate one by one.

Hiraiwa (2002d) observes that  $\bar{A}$ -movement does not rescue otherwise lethal intervention. Compare the minimal doublet below.

(2.51) Icelandic:

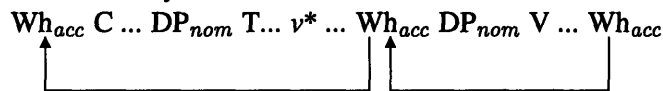
- a. Mér **virðist/\*?virðast** Jóni líka hestarnir.  
 1Sg.(Dat) seem(Dft./Pl.) John(Dat) to-like horses(D.Nom.Pl.)  
 ‘It seems to me that John like the horses.’
- b. Hvaða stúdent **virðist/\*?virðast** Ólafur líka hestarnir.  
 which student(Dat.Sg.) seem(Dft./Pl.) Olaf(Dat) to-like horses(D.Nom.Pl.)  
 ‘Which student does it seem to Olaf likes the horses?’ (Hiraiwa 2002d)

In (2.51a), the plural agreement is blocked because the quirky element *Jóni* intervenes between T and the downstairs object *hestarnir*. In (2.51b), the matrix experiencer *Ólafur* occupies [Spec, TP] and the embedded dative *Wh*-subject has been extracted to [Spec, CP]. If we adopt a BEA version of phase evaluation of locality, *Wh*-movement of this intervenor should make its way for Agree (T, DP<sub>hestarnir</sub>), which is disproved in (2.51b).

This is empirically inconsistent with the fact that motivated Chomsky (2001) to adopt the phase-evaluation theory of locality. In (2.52), for example, the *Wh*-element stops at the edge of *v*\*P on its way to [Spec, CP] and does not block agreement between T and the subject.

(2.52) Icelandic:

(2.53) Successive Cyclic *Wh*-movement and Intervention



Based on this fact that is cross-linguistically true, Chomsky (2001, 2004a) propose to evaluate locality acyclically at a phase-level. This, however, gives us the right result for (2.52) but not for (2.51b). Intervention in (2.51b) does not involve any visible intervention. Even if an intervenor is dislocated and leaves no visible copy at an intervening position, intervention effects are alive.

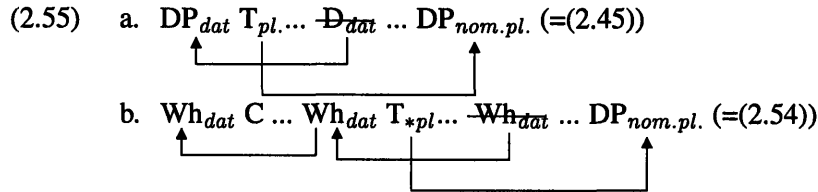
Holmberg and Hróarsdóttir (2002, 2003) make an even more interesting observation. As shown below, *Wh*-movement “revives” intervention effects that should be otherwise obviated by A-movement (2.54a). The same point is also shown by (2.54b).

(2.54) Icelandic:

- a. Hvaða stúdent **finnst/??finnast** tölvurnar ljótar.  
 which student(Dat.Sg.) find(Sg./Pl.) computers(D.Nom) ugly(Nom)  
 ‘Which student finds the computers to be ugly?’ (Holmberg and Hróarsdóttir 2002, 2003)
- b. Hvaða stúdent **virðist/\*?virðast** líka hestarnir.  
 which student(Dat.Sg.) seem(Dft./Pl.) to-like horses(D.Nom.Pl.)  
 ‘Which student seems to like the horses?’ (T. Hróarsdóttir p.c.)

As we saw in the preceding section, A-movement rescues intervention as in (2.55a). But if  $\bar{A}$ -movement follows A-movement as in (2.55b), intervention effects should not appear and number

agreement shouldn't be blocked. This is quite surprising given the standard view of syntactic derivation that proceeds cyclically. The derivations of (2.55a) and (2.55b) are locally indistinguishable at the point of the derivation where the quirky dative experiencer undergoes A-movement to [Spec, TP].



Thus Holmberg and Hróarsdóttir (2002, 2003) suggest that *Wh*-movement applies directly to the quirky *Wh*-element in [Spec, *v*\*P], leaving T's EPP unsatisfied. Whereas that could solve the agreement paradox at hand, it creates another fundamental problem that remains unanswered: Why and how could T's EPP be obviated? One might wonder if there is a general reason –whatever it may be– why *Wh*-elements are unable to undergo A-movement, as Holmberg and Hróarsdóttir (2003) propose. That this is not correct is indicated by the following examples. Although multiple *Wh*-questions are not perfectly felicitous when the *Wh*-elements are not clause-mates, the sentences below are almost grammatical. Note that the embedded *Wh*-subject does precede the verb, indicating it has undergone A-movement to [Spec, TP].<sup>20</sup>

<sup>20</sup>Norvin Richards (p.c.) has reminded me of Brandi and Cordin (1989), who argue that in Northern Italian dialects, Fiorentino and Trentino, *Wh*-extraction behaves as if it occurred directly from post-verbal positions (see also Rizzi (1982) for Italian). As shown in (i), the postverbal subjects in these dialects do not control number agreement. Interestingly, in *Wh*-movement, the extracted subjects do not control number agreement.

- (i) Brandi and Cordin (1989)
- a. Fiorentino  
Gli ha telefonato delle ragazze.  
3M.Sg. has telephoned some girls  
'Some girls have telephoned.'
- b. Trentino  
Ha telefoná qualche putela.  
has telephoned some girls  
'Some girls have telephoned.'
- (ii) a. Fiorentino  
Quante ragazze gli è venuto con te?  
how.many girls 3M.Sg. has come with you  
'How may girls (it) has come with you?'
- b. Trentino  
Quante putele è vegnú con ti?  
how.many girls has come with you  
'How may girls (it) has come with you?'

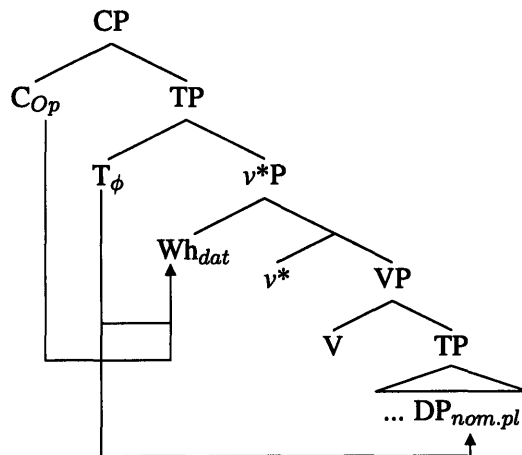
While this initially appears to support the position that *Wh*-phrases undergo *Wh*-movement directly from *v*\*P-internal positions, I would like to note that Arabic facts point in the opposite direction. In Standard Arabic, while post-verbal

(2.56) Icelandic: (H. Sigurðsson p.c.)

- a. ? Hver veit að hverjir fara á morgun?  
 who knows C who(Pl.) leave(3Pl.) in tomorrow  
 ‘Who knows that who will leave tomorrow?’
- b. ? Hver veit að hver fer á morgun?  
 who knows C who(Sg.) leaves(3Sg.) in tomorrow  
 ‘Who knows who will leave tomorrow?’

The PTPD gives a principled explanation to the paradox and the intricacies that an interplay of A-movement and  $\bar{A}$ -movement induce. Let us delineate the derivation of (2.57). Upon the External Merge of C, the  $\phi$ -features and Op-features of C start probing simultaneously. All of these operations apply to the occurrence of  $Wh_{dat}$  that is in [Spec,  $v^*P$ ] in a parallel computation. The following is the set of syntactic operations that are applied.

(2.57) Parallel Derivation of (2.54)



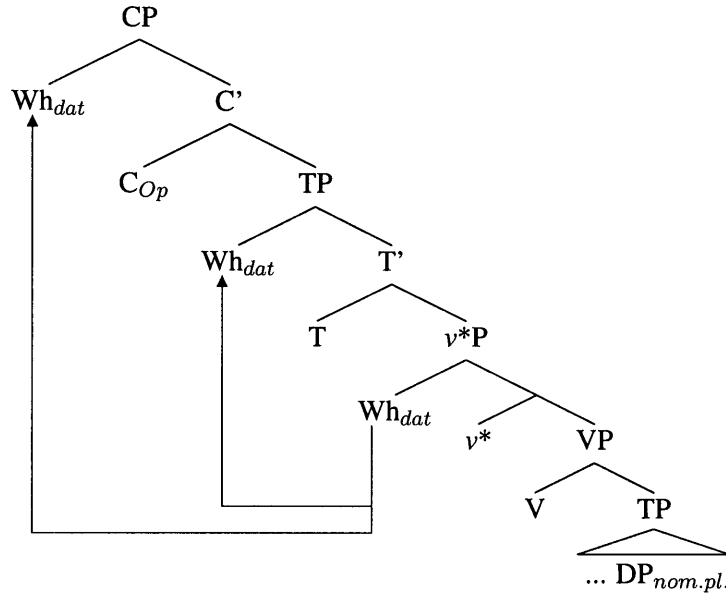
subjects trigger less rich agreement, pre-verbal subjects induce full agreement. Now if  $Wh$ -movement applies to the subject, the agreement always comes out fully.

(iii) Standard Arabic (Aoun et al. 1999, 680)

- a. ?ayyu ?awlaad-in nažaahu.  
 which.NOM children-GEN succeeded.3MP  
 ‘Which children succeeded?’
- b. \* ?ayyu ?awlaad-in nažaaha.  
 which.NOM children-GEN succeeded.3MS  
 ‘Which children succeeded?’

So these facts alone do not show us any convincing universal argument for or against Holmberg and Hróarsdóttir’s position. Rizzi (1982) attributes the availability of post-verbal extraction to the fact that Italian allows pro-drop and does not show any that-trace effects. Icelandic differs from Italian in that the former does not allow pro-drop, while it does not show any that-trace effects, either. I leave the issue for future research.

(2.58) Parallel Derivation of (2.54)



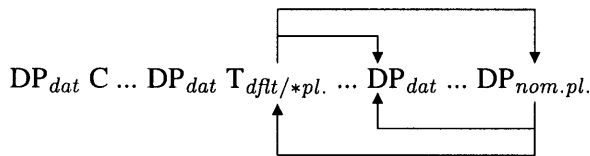
The Chain Uniformity Principle forms the following three chains.

- (2.59) a. Chain<sub>φ</sub>: {Wh<sub>dat</sub>[TP], ~~Wh<sub>dat</sub>[vP]~~}
- b. Chain<sub>wh</sub>: {Wh<sub>dat</sub>[CP]}
- c. Chain<sub>φ</sub>: {Wh<sub>dat</sub>[vP]}

While EPP<sub>φ</sub> results in a uniform chain and hence it does not leave a copy in [Spec, v\*P], EPP<sub>wh</sub>, being an operator feature, cannot form a uniform chain with the Externally Merged copy in [Spec, v\*P]. Thus the chains are split into two single membered chains, one in [Spec, CP] and the other in [Spec, v\*P].

Now at TRANSFER, locality is evaluated on the chains, as represented below.

(2.60) Locality Evaluation at TRANSFER



Crucially, *Wh*-movement leaves a copy in [Spec, v\*P] that triggers intervention effects for the relation between T and DP<sub>nom.pl.</sub><sup>21</sup> Thus under the PTPD, the derivations (2.45) and (2.54) are

<sup>21</sup>I leave open as a terminological issue whether this is an instance of intervention or defective intervention.

locally distinct and the apparent complexity of agreement follows.<sup>22,23</sup>

#### 2.4.4 Stylistic Fronting and Agreement

Icelandic agreement exhibits a further complication. As shown below, *Wh*-movement of the intervening quirky element makes it possible for the downstairs nominative subject to move to [Spec, TP] (Holmberg and Hróarsdóttir 2002, 2003). Consider (2.61). In (2.61a), the embedded subject *Ólafur* stays within the embedded clause, which is indicated by its position below the matrix predicate. In contrast, *Ólafur* in (2.61b) has been moved to the position between the auxiliary verb and the participle. It is very important to notice that this kind of movement is not possible unless the subject position –[Spec, TP]– is a gap (Holmberg 2000). Thus, (2.61c) is ungrammatical.

(2.61) Icelandic:

- a. Hverjum hefur virst **Ólafur** vera gáfaður?  
 who(Dat) has seemed Olaf(Nom) to-be intelligent  
 ‘Who has found Olaf to be intelligent?’ (Holmberg and Hróarsdóttir 2003, 1009)
- b. Hverjum hefur **Ólafur** virst vera gáfaður?  
 who(Dat) has Olaf(Nom) seemed to-be intelligent  
 ‘Who has found Olaf to be intelligent?’ (Holmberg and Hróarsdóttir 2003, 1009)
- c. \* **Ólafur** hefur virst mér vera gáfaður.  
 Olaf(Nom) has seemed 1Sg.(Dat) to-be intelligent  
 ‘I have found Olaf to be intelligent’

Holmberg and Hróarsdóttir (2002, 2003) ingeniously show that the movement in question is an instance of Stylistic Fronting (SF: see Jónsson 1991, Holmberg 2000, 2001 and Hrafnbjargarson 2004 and references cited therein) not A-movement/raising, by pointing out that a higher adverb blocks the movement (I will return to some remaining questions later).

<sup>22</sup>It seems necessary under this system to think that phonological determination takes place locally phase-by-phase. Among the multiple Merge relations, the PF-interface chooses which copy to pronounce, the highest copy singled out for obvious reasons. In this respect, Stylistic Fronting is more like a PF phenomenon in that its application is determined globally; as long as PF determination vacates [Spec, TP], it can phonologically realize another occurrence in [Spec, TP]. See the next section for detailed discussions on Stylistic Fronting.

<sup>23</sup>There is one confound, however. When the intervening quirky plural element is *Wh*-moved, plural agreement is degraded somewhat. The effect seems to be stronger when the *Wh*-movement is long-distance. I have no explanation for these facts at this point.

(i) Icelandic:

- a. Hvaða stúdentum finnst/?finnast tölvurnar ljótar.  
 which students(Dat.Pl.) find(Sg./Pl.) computers(D.Nom) ugly(Nom)  
 ‘Which students find computers ugly?’
- b. Hvaða stúdentum veist þú að finnst/?finnast tölvurnar ljótar.  
 which students(Dat.Pl.) know you C find(Sg./Pl.) computers(D.Nom) ugly(Nom)  
 ‘Which students do you know find computers ugly?’

As shown in (2.62), when the adverb *alltarf* c-commands the original position of *Ólafur*, it blocks the SF of the latter.

- (2.62) Icelandic: Blocking of SF by the adverb *alltarf*
- a. \* Hverjum hefur **Ólafur** **alltarf** virst vera gáfaður?  
 who(Dat) has Olaf(Nom) always seemed to-be intelligent  
 ‘Who has always found Olaf to be intelligent?’ (Holmberg and Hróarsdóttir 2003)
  - b. Hverjum hefur **alltarf** virst **Ólafur** vera gáfaður?  
 who(Dat) has always seemed Olaf(Nom) to-be intelligent  
 ‘Who has always found Olaf to be intelligent?’ (Holmberg and Hróarsdóttir 2003)

I would like to add another argument here. The shifting operation in (2.61b) cannot be an instance of “object shift”, either (see Sigurðsson 2000), because in (2.61b), main verb movement is blocked by the auxiliary verb and hence the shifting operation is prevented by Holmberg’s Generalization (recall footnote 19).

Now Holmberg and Hróarsdóttir (2003) (pointed out to them by Halldor Sigurðsson), make an interesting observation in a footnote that SF feeds plural agreement in the example where otherwise plural agreement is illicit. In (2.63a), the plural agreement on T is blocked due to the intervening copy of the quirky *Wh*-phrase at the edge of *v*\*P. On the other hand, in (2.63b), where the embedded subject DP has been dislocated by SF, agreement becomes possible and in fact is forced.

- (2.63) Icelandic:
- a. Hverjum **hefur**/\*?hafa virst **strákanir** vera gáfaðir?  
 who(Dat) have(Sg./Pl.) seemed boys(Nom) to-be intelligent  
 ‘Who has found the boys to be intelligent?’
  - b. Hverjum **hafa** **strákanir** virst <sup>t<sub>strakanir</sub></sup> vera gáfaðir?  
 who(Dat) have(Pl.) boys(Nom) seemed to-be intelligent  
 ‘Who has found the boys to be intelligent?’ (Holmberg and Hróarsdóttir 2003, 1010)

- (2.64) Stylistic Fronting (SF) feeds agreement.

Additional examples are illustrated below.

- (2.65) Icelandic: (H. Sigurðsson p.c.)
- a. Hverjum **mundi** hafa virst **hestarnir** vera seinir?  
 who(Dat) would(3Sg.) have seemed horses(Pl.D.Nom) be slow  
 ‘To whom do the horses seem to be slow?’
  - b. Hverjum **mundu** **hestarnir** hafa virst vera seinir?  
 Who(Dat) would(3Pl.) horses(Pl.D.Nom) have seemed be slow  
 ‘To whom do the horses seem to be slow?’

This is unexpected, given our assumption that there is no such thing as Spec-Head Agreement. Why is number agreement possible and even forced when SF fronts the nominative element over

the copy of the quirky dative *Wh*-element? I argue that the key is the third symmetry of Agree that I introduced in Section 2.2.3: the Conservation Law of Agree.

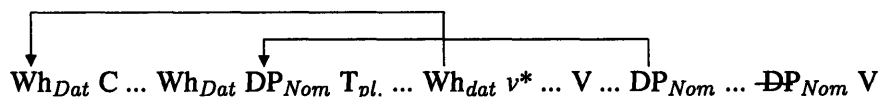
First, what is the nature of SF in Icelandic? Two properties of SF merit consideration. First, its application is restricted only to cases where [Spec, TP] is vacated. Second, it applies only to an element with phonological matrix. In other words, the output of SF must be pronounced at PF. In these respects, SF is a mildly global operation in that it presupposes a certain sequence of derivation; crucially, its application cannot be computed at the C-T probe-level since  $C_{HL}$  cannot tell whether [Spec, TP] is vacated or not at the point of simultaneous applications of syntactic operations. Rather SF must see the representation obtained *after* the applications of Internal Merge at the C-T probe-level. Thus a natural conclusion is that SF is an operation applied at TRANSFER.

Suppose that Stylistic Fronting is driven by a pure EPP, which comes free in the Icelandic system.<sup>24</sup> It searches the closest goal (of any category, by assumption, but perhaps with some matching feature, say [+lexical]) with a phonological content. In our current terms of the PTPD, this means that it attracts the closest occurrence that has not participated in a chain relation yet.<sup>25</sup>

(2.66) Stylistic Fronting (SF) is an operation at TRANSFER.

Now consider the derivation of (2.67). Recall that SF is sensitive to phonological matrix; unpronounced copies (typically a tail of chains within a phase) do not count as a goal for this operation. Thus the probe T locates the closest (lexical) category that is not the tail of a chain. In the case at hand, this is  $DP_{nom}$  in [Spec, TP] of the embedded clause. Note that the phrase marker to which SF applies is an output of the syntactic operations at C; hence SF targets a head of a chain.

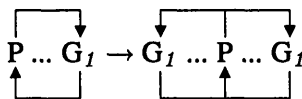
(2.67) The Derivation of SF



Now recall the Conservation Law of Agree repeated here below.

(2.68) THE CONSERVATION LAW OF AGREE

Agree relations are unchanged and retained after Merge.



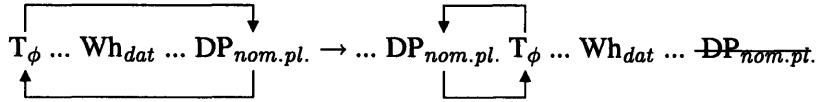
With (2.68) in mind, let us take a look at the relevant portion of the evaluation of locality at TRANSFER.

<sup>24</sup>See Holmberg (2000) and Hiraiwa (2002a). See the latter for a parametrization and consequences for the Scandinavian syntax.

<sup>25</sup>Hrafnbjargarson (2004) develops a different theory of SF, based on his observation that SF is not semantically vacuous.



## (2.69) Locality Evaluation at TRANSFER



There are two relations that are relevant for Agree (T,  $DP_{nom.pl.}$ ): one between T and the tail copy of the SF-chain and the other between T and the head copy of the SF-chain. The former relation is not local because of the copy of the quirky dative *Wh*-phrase ( $Wh_{dat}$ ) left at the edge of  $v^*P$ . But in the latter, the relation is perfectly local; there is no intervenor between T and the head copy of the SF-chain. Thus number agreement becomes licit and this is why SF feeds agreement.

It should be remembered that this is not Spec-Head Agreement; as argued in Section 2.2, the role of c-command in Agree is to initiate probing and nothing more than that. Thus once Agree relation is established under c-command, the relation is retained throughout the derivation under the Conservation Law of Agree. This in fact derives some effects that have been ascribed to Spec-Head Agreement, without invoking a special mechanism. It should be noted carefully that our theory does not imply that an element externally merged to the specifier of a probe can establish an Agree relation with the probe; agreement between an element in the specifier and its head is possible only if there is a c-command relation between the head and the goal in an earlier stage of the derivation.<sup>26</sup>

(2.70) Spec-Head Agreement is epiphenomenal arising from the Conservation Law of Agree.

## 2.4.5 Cross-Linguistic Application: Hindi Gender Agreement and Beyond

Finally, recall Hindi gender agreement, where multiple gender agreement ‘climbs up’.

(2.71) Hindi: (Boeckx 2004, 5)

- a. Shahrukh-ne tehni kaat-nii chaah-ii.  
Shahrukh-Erg branch.F cut-Inf.F want-Perf.F  
‘Shahrukh wanted to cut the branch.’
- b. \* Shahrukh-ne tehni kaat-nii chaah-aa.  
Shahrukh-Erg branch.F cut-Inf.F want-Perf.M  
‘Shahrukh wanted to cut the branch.’
- c. \* Shahrukh-ne tehni kaat-naa chaah-ii.  
Shahrukh-Erg branch.F cut-Inf.M want-Perf.F  
‘Shahrukh wanted to cut the branch.’

It should be clear that this is exactly centrosymmetry with multiple Case valuation; the lowest  $DP_{fem.}$ , being a probe, enters into a Multiple Agree relation with  $u\phi$ -features of the infinitive and

<sup>26</sup>The approach makes a strong prediction that an element cannot agree with a probe if it is externally merged in the specifier of the probe. This clearly contrasts with a proposal made by Rezac (2003), who argues that search domain of a probe extends derivationally. In particular, he proposes that the specifier of a probe is legitimate search space, restating Spec-Head Agreement in essence. Putting aside empirical differences, our approach still conforms to the thesis that Agree is subject to c-command condition and hence a probe cannot see its specifier.

the matrix T. The gender agreement, therefore, literally “climbs up” from bottom up (2.71a).<sup>27</sup>

Bhatt (2003) demonstrates that the embedded object does not have to move out of the infinitival clause. In the following example, the embedded adverb appears at the left of the embedded object.

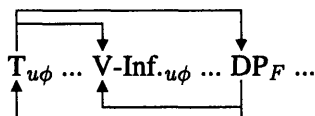
(2.72) Hindi (Bhatt 2003)

Rohan-ne aaj [**phir-se** mehnat kar-nii] chaah-ii  
 Rohan-Erg today again hardwork.F do-Inf.F want-Perf.FSg

‘Today Rohan wanted to work hard again.’

The agreement pattern is represented in the diagram below.

(2.73) Hindi Gender Agreement



It is significant to note that if the embedded infinitive has an overt subject, which is genitive Case-marked in Hindi, the gender agreement is blocked.<sup>28</sup>

(2.74) Hindi: (Bhatt 2003, R. Bhatt p.c., Boeckx 2004)

- a. ? Firoz-ne Shabnam-kaa rotii khaa-**naa** chaah-**aa**.  
 Firoz-Erg Shabnam-Gen bread.F eat-Masc. want-Perf-Masc  
 ‘Firoz wanted Shabnam to eat bread.’
- b. \* Firoz-ne Shabnam-kaa rotii khaa-**nii** chaah-**ii**.  
 Firoz-Erg Shabnam-Gen bread.F eat-F. want-Perf-F  
 ‘Firoz wanted Shabnam to eat bread.’

Significantly, the intervention effects remain even if the intervening genitive subject has been dislocated by scrambling or *Wh*-movement.

(2.75) Hindi: (R. Bhatt p.c.)

- a. \* Shabnam-kaa; Firoz-ne t<sub>i</sub>; rotii khaa-**nii** chaah-**ii**.  
 Shabnam-Gen Firoz-Erg bread.F eat-F. want-Perf-F

<sup>27</sup>Boeckx (2004) notes that there is a dialect that accepts (2.71b). This micro-variation makes a perfect sense under our theory of Multiple Agree; the two dialects in question differs in whether it allows a default valuation. If it does not the gender value of the bottom DP must enter into a Multiple Agree relation with the intermediate and the matrix predicates. If it allows default valuation, on the other hand, the probe gender feature can value the closest goal, leaving the distant goal valued by default. In either case, what is crucial is the fact that (2.71c) is never allowed, which clearly violates locality under the centrosymmetric theory of Multiple Agree.

<sup>28</sup>Rajesh Bhatt (p.c.) notes that there are various factors that affect the construction like (2.74a), giving “?” to this example. Sharbani Banerji (p.c.), on the other hand, disagrees with the judgment reported in Bhatt (2003) and Boeckx (2004) for (2.74a) and pointed out that (2.74a) can only be interpreted as “Firoz wanted to eat Shabnam’s bread.” He observes the intended meaning should be expressed by using a subjunctive clause.

'Firoz wanted Shabnam to eat bread.'

- b. \* Kis-kaa<sub>i</sub> Firoz-ne t<sub>i</sub> rotii khaa-nii chaah-ii.  
 who-Gen Firoz-Erg bread.F eat-F. want-Perf-F  
 'Who did Firoz want to eat bread?'
- c. \* Firoz-ne Kis-kaa rotii khaa-nii chaah-ii.  
 Firoz-Erg who-Gen bread.F eat-F. want-Perf-F  
 'Who did Firoz want to eat bread?'

Again, this is exactly what the PTPD and the theory of chain predict; since *Wh*-movement and the long-distance scrambling in Hindi are both  $\bar{A}$ -movement, they leave a copy of the moved element in its original position, which at TRANSFER still counts as an intervenor for the evaluation of the relevant Agree relations.<sup>29</sup>

In the same vein, interesting agreement constraints in English reported in Boeckx (2004) exhibit a striking similarity with Icelandic and Hindi agreement. Consider the quartet below (2.76d) is supplemented by K.H.), even though judgments of native speakers vary.

- (2.76) English Number Agreement and Intervention (Boeckx (1999))
- There seems<sub>afft</sub>/\*seem<sub>pl.</sub> to Mary to be a man in the room.
  - There seems<sub>afft</sub>?/\*seem<sub>pl.</sub> to Mary to be men in the room.
  - There seems<sub>afft</sub>/\*seem<sub>pl.</sub> to the women to be a man in the room.
  - There seems<sub>afft</sub>/seem<sub>pl.</sub> to the women to be men in the room.

As (2.76c) shows, the dative in English cannot value the number value of T by itself. Also, in all the cases, default agreement is possible. When the number values of the intervening dative and the

<sup>29</sup>There is one confound, however. Consider below.

- (i) Hindi: (Bhatt 2003)
- Rahul kitaab parh-**taa** **thaa**.  
 Rahul-Nom book.F read-Hab.M.Sg. be.Pst.M.Sg.  
 'Rahul used to read the book.'
  - Rahul-ne parhii-**thii** kitaab **thii**.  
 Rahul-Erg book.F read-Perf.F be.Pst.F.Sg  
 'Rahul had read the book.'
- (ii) Hindi: (R. Bhatt and S. Banerji p.c.)
- kaun kitaab parh-**taa** **thaa**?  
 who-Nom book.F read-Hab.M.Sg. be.Pst.M.Sg.  
 'Who used to read the book?'
  - kisne parhii-**thii** kitaab **thii**?  
 who-Erg book.F read-Perf.F be.Pst.F.Sg  
 'Who had read the book?'

As shown above, even if the ergative subject is *Wh*-moved, the agreement is not blocked between the nominative object and the verb. This contrasts with Icelandic and merits a further investigation in the future and could raise a possibility that gender agreement in Hindi occurs lower than we think (perhaps between  $\nu^*$  and a nominative object).

associate are different, only default agreement is allowed as in (2.76b). When their number values are same, the intervention effect disappears as grammaticality of plural agreement in (2.76d) shows. The facts are parallel to Icelandic agreements (2.34); under Multiple Agree, the  $\phi$ -features of the bottom DP probes; if it finds a goal with a different value, agreement halts and default valuation is called for. If, on the other hand, it encounters a goal with a same value, it goes on (i.e. Multiple Agree). Then it reaches the matrix T and successfully values plural agreement on it.

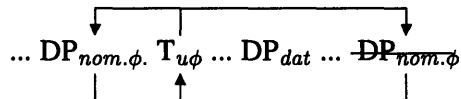
Now the Symmetry Principle of Agree has a further implication here. Once the associate DP is raised over the experiencer, intervention effects disappear.

(2.77) English Number Agreement

- a. A man seems<sub>dfit</sub>/\*seem<sub>pl</sub>. to Mary to be in the room.
- b. Men \*seems<sub>dfit</sub>/seem<sub>pl</sub>. to Mary to be men in the room.
- c. A man seems<sub>dfit</sub>/\*seem<sub>pl</sub>. to the women to be a man in the room.
- d. Men \*seems<sub>dfit</sub>/seem<sub>pl</sub>. to the women to be men in the room.

Again, Merge yields symmetric Agree relations, the only difference being that this Merge is A-movement and hence does not leave a copy, compared with SF in Icelandic discussed above.

(2.78) Locality Evaluation at TRANSFER



The Agree relation between T and the nominative DP is local after Merge, though not before Merge. Thus number agreement obtains unambiguously.<sup>30</sup>

<sup>30</sup>The same line of reasoning will probably apply to French participle agreement as well (see Kayne (1989, 2000)).

(i) French: (Boeckx 2004)

- a. Jean a vu-\*e la fille.  
Jean has seen-Fem D girl  
'Jean saw the girl.'
- b. Quelle fille Jean a(-t-il) vu-e?  
which girl Jean has-he seen-Fem  
'Which girl did Jean see?'
- c. Cette fille a été vu-e.  
this girl has been seen-Fem  
'This girl was seen.'

Suppose that the verbal root category (or alternatively, the participle head Part.) in French has a masculine specification. Without movement of the object to the edge of  $v^*P$ , the root intervenes and blocks feminine gender agreement between DP and  $v^*$ . Once dislocated, however, the Agree relation between DP and  $v^*$  becomes local and hence the participle agreement in gender is rendered licit.

## 2.5 Multiple Agreement

The preceding discussions have focused on cases where agreement is determined on a single element by multiple goals. In this section, I would like to consider cases where agreement appears on more than one element while there is only one goal. Examples are taken from Icelandic and Swahili.

### 2.5.1 Raising-to-Object/ECM in Icelandic

First, let us examine the derivation of Raising-to-Object/ECM constructions in Icelandic (Jonas 1996, Maling and Sprouse 1995, Taraldsen 1995, Thráinsson 2001 among others). A particular focus is placed on Case assignment to the participle and the DP within the embedded infinitive. A simple case of ECM in Icelandic is illustrated below. Note that the embedded subject *Harald* receives an accusative Case.

(2.79) Icelandic: (Thráinsson 2001, 176)

Ég taldi **Harald** vera latan.  
1Sg. believed Harald(Acc) to-be lazy

‘I believed Harald to be lazy.’

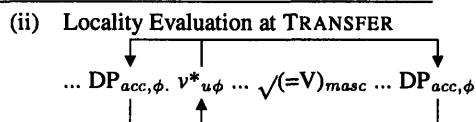
In ECM in Icelandic (2.80), the participle *drepinn* and the embedded subject *einhvern* both receive accusative Case value, as shown below.

(2.80) Icelandic: (H. Sigurðsson p.c.; Frampton and Gutmann 2001, Chomsky 2001, 2004a)

Ólafur hefur lílega tali **einvern** hafa veri  
Olaf(Nom) has(3Sg.) probably believed someone(Acc.M.Sg.) have been  
**drepinn**.  
killed(Acc.M.Sg.)

‘Olaf has probably believed someone to have been killed.’

The participle also inflects for number and gender and their values are assigned from the embedded object DP. In (2.81), the participle agrees with the derived subject DP in number and gender.



Furthermore, a copy of the moved DP is not left behind in the case of A-movement (ia), whereas a copy is left behind in the case of  $\bar{A}$ -movement (ib) and (ic). This explains why past participle agreement in French is obligatory with A-movement contexts, while it is optional in other contexts. With A-movement, the head of the A-chain is local by the Conservation Law of Agree, while with  $\bar{A}$ -movement, the chain is split into two single-membered chains, one in [Spec, CP] and the other in the original position. Depending on which copy is used for locality evaluation, optionality is expected.

The same analysis, I believe, will extend to conjunct agreement and agreement in compound tense constructions in Bantu and varieties of Arabic, but I will not discuss them here further due to the limit of space

(2.81) Icelandic: (H. Sigurðsson p.c.)

- a. Ólafur telur **einhvern** hafa veri **drepinn**.  
 Olaf believe(3Sg.) someone(Acc.M.Sg.) to-have been killed(Acc.M.Sg.)  
 ‘Olaf believes someone to have been killed.’
- b. Ólafur telur **Mari** hafa veri **drepna**.  
 Olaf believe(3Sg.) Mari(Acc.Fm.Sg.) to-have been killed(Acc.Fm.Sg.)  
 ‘Olaf believes Mary to have been killed.’

Clearly, the accusative Case comes from the  $v^*(-\#)$  probe system since otherwise, accusative Case is not available within the embedded clause in these constructions.<sup>31</sup>

The following data, however, reveals a complication. The ditransitive verb “give” in Icelandic allows two passivization patterns: either the direct object is passivized or the indirect object is passivized. Significantly, under ECM, Case valuation patterns show up in a different way. When the passivized direct object DP is embedded under ECM as in (2.82a), the passivized direct object as well as the participle get an accusative value. If the passivized indirect dative DP is embedded under ECM as in (2.82b), however, the in-situ direct object and the participle cannot get accusative Case value and rather, they appear in nominative Case (Sigurðsson 1993, 2000).

(2.82) Icelandic: (Maling and Sprouse 1995, 180)

- a. Ég taldi **hestana** hafa verið **gefna** Jóni.  
 I believed horses(D.Acc) to-have been given(Acc.Pl.Msc) John(Dat)  
 ‘I believed the horses to have been given to John.’
- b. Ég taldi **Jóni** hafa verið **gefnir hestanir/\*gefna**  
 I believed John(Dat) to-have been given(Nom) horses(D.Nom)/given(Acc)  
**hestana**.  
 horses(D.Acc)  
 ‘I believed the horses to have been given to John.’

The same pattern is observed in other Dative-Nominative constructions. In (2.83), the “nominative” object cannot get accusative Case from  $v^*(-\#)$  (see Sigurðsson (1989, 206) for the observation).

(2.83) Icelandic: (Maling and Sprouse 1995, 178)

- Ég taldi henni leiðast **Hraldur/\*Harald**.  
 1Sg. believed her(Dat) to-bore Harald(Nom)/Harald(Acc)  
 ‘I believed her to be bored by Harald.’

It is not the case that  $v^*-T$  cannot look into the complement domain of the embedded predicate. If we control specificity/definiteness of the object, it is possible to leave it in-situ. Note that Case valuation patterns do not change here.

<sup>31</sup>I will return to the  $v^*(-\#)$  relation in Chapter 4. Since it is irrelevant for the discussions here, I will not go into details here.

(2.84) Icelandic: (H. Sigurðsson p.c.)

- a. **Ég tel of marga menn hafa verið drepna.**  
 I believe too many(Acc.M.PI) men(Acc.M.PI) have been killed(Acc.M.PI)  
 ‘I believe to many men have been killed.’
- b. **Ég tel hafa verið drepna of marga menn.**  
 I believe have been killed(Acc.M.PI) too many(Acc.M.PI) men(Acc.M.PI)  
 ‘I believe to many men have been killed.’

The quirky dative element can be omitted when it is understood in the context. In such a case, the participle and the object DP surface in accusative Case. Compare below with (2.82). The participle and the in-situ object get accusative Case from  $v^*$ -#.

(2.85) Icelandic: (H. Sigurðsson p.c.)

- Ég taldi hafa verið gefna of marga hesta.**  
 I believed to-have been given(Acc.M.PI.) too many(Acc.M.PI) horses(Acc.M.PI.)  
 ‘I believed there to have been given many horses’

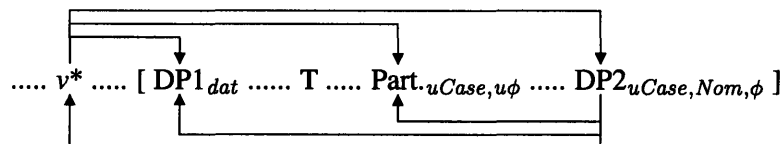
The generalization seems to be as follows: in Dative-Nominative configurations, the “nominative” object DP is quirky with uCase as well as inherent nominative case.

(2.86) In Dative-Nominative configurations:

- a. The “dative” subject DP has uCase as well as inherent dative case.  
 b. The “nominative” object DP has uCase as well as inherent nominative case.

But the generalization still leaves vague the exact mechanism of Case assignment to the participle. Consider below.

(2.87) Case Assignment to the Participle



If the participle gets its Case value from  $v^*$  directly, it is expected that it gets accusative Case while the DP2, being a quirky nominative, surfaces in nominative Case. As we have seen, this is not true. Rather, the participle always gets the same Case value as the DP2. This suggests that uCase of the participle cannot be valued by  $v^*$ . Rather it is valued by the DP2: if the DP2 only has uCase,  $v^*$  assigns accusative Case to it and the DP2 in turn assigns its Case value to the participle via Value (DP, Part.). If, on the other hand, the DP2 has uCase and inherent nominative case, Value (DP, Part) gives a nominative value to uCase of the participle.

This suggests that Case valuation is contingent on matching of  $\phi$ -features. One may assume here that  $u\phi$ -features of  $v^*$  do not match with  $u\phi$ -features of the participle since both of them are unvalued. Hence  $v^*$  cannot assign a value to uCase of the participle. Rather its value is assigned by

the DP2 under the centrosymmetry of Multiple Agree. Since inherent  $\phi$ -features of the DP2 match with  $u\phi$ -features of the participle, the former act as a probe and the latter act as a goal. Hence the Case value is assigned from the DP2 to the participle.

### 2.5.2 Compound Tense Constructions in Swahili

Carstens (2000, 2001) points out another potential problem of the probe-goal system of Chomsky (2000, 2001). She discusses cases where multiple probes c-command a goal and the former agree with the latter. I focus here on Compound Tense Constructions.<sup>32</sup> Bantu has constructions called *Compound Tense Constructions*, where tense is expressed on multiple (consecutive) heads and  $\phi$ -agreement appears on each head (see Kinyalolo 1991 and in particular Carstens 2000). The hypothesis that  $\phi$ -features are a property of C transmitted down to T and under Multiple Select may explain why agreement appears successive-cyclically in the following compound tense constructions. Some examples are cited from Swahili and Kilega.

(2.88) Swahili: (Carstens 2000)

- a. Juma a-li-kuwa a-me-pika chakula.  
Juma 3Sg.-Pst-be 3Sg.-Perf-cook 7food  
'Juma had cooked food.'
- b. (Mimi) Ni-li-kuwa ni-ngali ni-ki-fanya kazi.  
(1Sg.) 1Sg.-Pst-be 1Sg.-still 1Sg.-Perf-do 9work  
'I was still working.'

(2.89) Kilega:

- a. Juma a-li-kuwa a-me-pika chakula.  
Juma 3Sg.-PST-be 3Sg.-PERF-cook 7.food  
'Juma had cooked food.' (Carstens 2001)
- b. Masungá má-kilí m-á-yik-u-á.  
6.yam 6.Sa.-be.still 6.Sa.-A-cook-Pass-FV  
'The yams are still being cooked.' (Carstens 2004)
- c. Ku-Lúgushwá kí-kili ku-á-twag-a nzogu maswá.  
17-Lugushwa 17.Sa.-be.still 17.Sa.-A-stampede-FV 10.elephant 6.farm  
'At Lugushwa are elephants still stampeding over (the) farms.' (Carstens 2004)

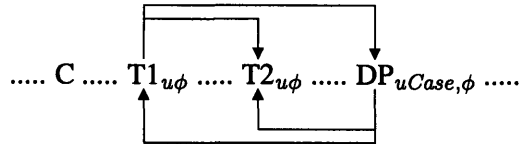
Note the multiple agreement morphemes on each head. Carstens (2000) correctly points out that if Case assignment is a function of full  $\phi$ -agreement (i.e.  $\phi$ -completeness) as argued in Chomsky (2000), the multiple occurrences of full agreement with a goal within a single sentence are mysterious, because the goal should get inactivated once its uCase is valued by Agree with the first (i.e. closer) probe.

<sup>32</sup>Carstens (2000, 2001) also discusses "concord" phenomena within noun phrases in French and Bantu languages. Since discussing those phenomena requires a careful examination of the structure of DP and more importantly, the distribution of  $\phi$ -features, I will not discuss them here. See Carstens (2001) for detailed discussions.



It is worth pointing out here that the PTPD resolves the problem naturally. Consider the derivation below.

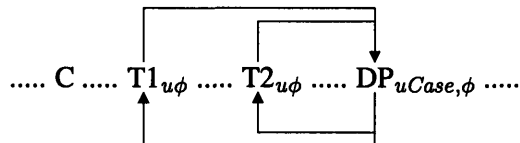
## (2.90) Multiple Agreement in CT



Under the PTPD, Multiple Agree depicted above takes place simultaneously. Thus the valuation of  $u\phi$ -features on T1 and T2 occurs at the same time as the valuation of  $uCase$  of the goal. Thus, no “ $\phi$ -completeness” paradox arises.

There is another conceivable derivation, however, in which both T1 and T2 act as probes for the goal. This is many-to-one relation, in contrast with the one-to-many relation discussed in detail above so far.

## (2.91) Multiple Agreement in CT



Again, no timing problem arises for Case valuation under the PTPD because the probes access the single goal simultaneously in a parallel computation.

In the next section, I take a closer look at other cases where in fact multiple probes are involved.

## 2.6 Multiple Probes: Optional Agreement and Person Case Constraints

In this section, I deal with two issues that I have deferred so far: optionality of agreement and the Person-Case Constraints. The core of the proposal is a one-to-many selectional relation between C and multiple Ts.

### 2.6.1 Optionality of Agreement

There is a strong tendency for number agreement to be forced in a local domain (i.e. in a non-raising context), while it becomes optional –“one-notch weaker”–in a raising context (see Sigurðsson 1996 for a detailed survey). Consider (2.92), where plural agreement is strongly preferred within a single clause.

## (2.92) Icelandic:

- a. Henni <sup>??</sup>/<sup>\*</sup>leiddist/leiddust strárnir.  
 her(D) bored(Dflt.)/bored(3Pl.) boys(Nom.D.Pl.)  
 ‘She found the boys boring.’ (Sigurðsson 1996, Boeckx 2000)

- b. Henni <sup>??</sup>mistókst/mistóust allar tilraunirnar.  
 her(3Sg.Dat) failed(Dflt.)/failed(3Pl.) all attempt(Nom.D.Pl.)  
 ‘She failed in all the attempts.’ (Sigurðsson 1996, 26)

Compare (2.92) with long-distance agreement (2.93), where agreement is only optional.

(2.93) Icelandic:

- a. Mér virðist/virðust þær vinna vel.  
 me(1Sg.Dat) seem(Dflt.)/seem(Pl.) they(3Pl.Nom) to-work well  
 ‘It seems to me that they work well.’ (Sigurðsson 1996, 30; also Sigurðsson 1989)
- b. Jóni virðist/(?)virðast t<sub>Jóni</sub> líka hestarnir.  
 John(Dat) seem(Dflt.)/seem(Pl.) to-like horses(D.Nom.Pl.)  
 ‘John seems to like the horses.’ (Hiraiwa 2002d)

In the optional agreement cases above, the matrix T enters an Agree relation with an element that starts out within the embedded clause. The question is how to deal with such optionality within the framework of the Minimalist Program.

I propose that the optionality is due to two potential derivations available for the long-distance agreement sentences. More specifically, I argue, extending the “one-to-many relation” thesis to Selection, that C can enter into a multiple selection relation with the matrix T<sub>1</sub> and the embedded T<sub>2</sub>.

(2.94) Multiple Select by C

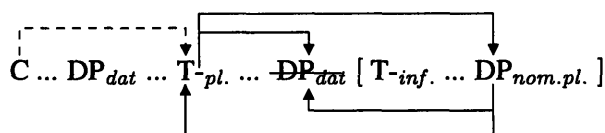
C enters into a Multiple “Agree” –Select– relation with T<sub>1</sub> and T<sub>2</sub>.

Given our theory that T functions as a probe in conjunction with C, it follows from (2.94) that the derivation of raising examples contain more than one probe.<sup>33</sup>

- (2.95) a. Probe 1: C-T<sub>1</sub>  
 b. Probe 2: C-T<sub>2</sub>

We have two derivations for raising constructions and hence agreement becomes “weaker” – optional– (Sigurðsson 1996. Boeckx 2000). Consider the derivation of (2.92) in which only a single selection by C takes place.

(2.96) Agreement under Single Select (C, T<sub>1</sub>) and Multiple Agree (C-T<sub>1</sub>, DP<sub>dat</sub>, DP<sub>nom</sub>)



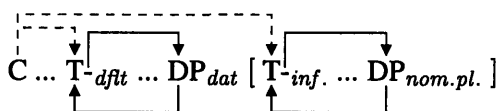
The dotted line indicates a selectional relation between C and T<sub>1</sub>. Since C does not select T<sub>2</sub> in this derivation, C-T<sub>2</sub> cannot act as a probe. Hence, C-T<sub>1</sub> Agrees with multiple goals: Agree (C-T<sub>1</sub>,

<sup>33</sup>This explains why we get EPP on each intermediate infinitival T in raising constructions.

$DP_{dat}$ ,  $DP_{nom}$ ). In this derivation,  $DP_{nom}$  necessarily values  $u\phi$ -features of the probe C- $T_1$  and hence plural agreement is realized.

Compare this derivation with the derivation containing multiple selection. Here, there are two probes at the phase level (CP) and both of them probe simultaneously. Thus, C- $T_1$  Agrees with the closest  $DP_{dat}$  and C- $T_2$  Agrees with the embedded  $DP_{nom}$ . The former Agree relation necessarily results in default agreement, since  $DP_{dat}$  cannot value  $u\phi$ -features. The latter Agree relation can value neither  $u\phi$ -features nor  $uCase$  of  $DP_{nom}$ , since C- $T_2$  is defective. Thus  $uCase$  is valued by default as Nominative.

- (2.97) Agreement under Multiple Select (C,  $T_1$ ,  $T_2$ ) and Agree (C- $T_1$ ,  $DP_{dat}$ ) and Agree (C- $T_2$ ,  $DP_{nom}$ )



This explains why long-distance agreement in Icelandic shows optionality. An important consequence of this approach is that  $uCase$  can be valued in two ways in Icelandic.

- (2.98) Nominative Case of nominative subjects/objects in Icelandic comes in two varieties:  
 $uCase$  valued via Agree with C- $T$   
 $uCase$  valued by default via Agree with C- $T$

The conclusion is empirically supported by the fact that nominative objects can also be licensed within control infinitives, as shown in (2.99).

- (2.99) Icelandic:

- a. Hún vonast til [að PRO leiðast ekki bókin].  
 she(Nom) hope(Sg.) for to PRO(Dat) bore not book(D.Nom)  
 ‘She hopes not to find the book boring.’ (Sigurðsson 1992)
- b. [að PRO batna veikin] er venjulegt.  
 to PRO recover.from disease(D.Nom) is usual  
 ‘To recover from the disease is usual.’ (Freidin and Sprouse 1991, 409)

Sigurðsson (1991) extensively argues that Icelandic PRO has a case and licenses agreement on the predicate of the control infinitives.

- (2.100) Icelandic: (Sigurðsson 1991, 336)

- a. Stelpurnar vonast til að PRO verða aðstoðaðar.  
 girls(D.Nom) hope for C PRO(Nom) be aided(Pl.F.Nom)  
 ‘The girls hope to be aided.’
- b. Stelpurnar vonast til að PRO verða hjálpað.  
 girls(D.Nom) hope for C PRO(Dat) be helped(Dft)

‘The girls hope to be helped.’

Here, the C-T relation within the embedded clause assigns a nominative Case value to the object (as well as a null Case to PRO).<sup>34</sup>

## 2.6.2 Person-Case Constraint (PCC) Effects

I would like to suggest a possible extension of our theory to the so-called Person-Case Constraints first observed by Sigurðsson (1991, 1996, 2000). As a descriptive generalization, the Person-Case Constraint is summarized as follows.

(2.101) “Person-Case Constraints (PCC)”

With quirky subjects, nominative objects cannot be 1st or 2nd person.  
(Sigurðsson 1991, 1996, 2000, Boeckx 2000, Schütze 2003)

The constraint is illustrated in (2.102) and (2.103). Example (2.102) shows that when the subject is quirky, the nominative object cannot be 1st person. Thus, the sentence is simply ungrammatical.

(2.102) Icelandic:

Henni \*leiddumst/?\*leiddust/?\*leiddist við.  
her(3Sg.D) bored(1Pl.)bored(3Pl.)/bored(Dflt) we(Nom.Pl.)

‘She is bored with us.’ (Sigurðsson 1996, 28)

The same is true of the following passive examples. The verb “show” in Icelandic allows either the indirect object or the direct object to be passivized. It should be noted, however, that the Person-Case Constraint is lifted if the direct object is passivized to be a nominative subject.

(2.103) Icelandic:

a. \* Henni voruð sýndir/sýndar þið.  
her(D) were(2Pl.) shown(M)/shown(F) you(Nom.Pl.)

<sup>34</sup>It should be noted here, however, that the control infinitives in Icelandic cannot license nominative or quirky subjects as controllers.

(i) Icelandic: (Freidin and Sprouse 1991)

- a. Barninu var hjálpað.  
child(D.Dat) was helped  
‘The child was helped.’
- b. að PRO vera hjálpað er erfitt.  
C PRO(Dat) to-be helped is difficult  
‘To be helped is difficult’
- c. \* að Jóni vera hjálpað er erfitt.  
C John(Dat) to-be helped is difficult  
‘For John to be helped is difficult’

This fact may indicate a possibility that the control infinitive in Icelandic must license PRO first.

‘She was shown you.’ (Sigurðsson 1996, 32)

- b. þið voruð sýndir/sýndar henni.  
 you(Nom.Pl.) were(2Pl.) shown(M)/shown(F) her(D)

‘She was shown you.’ (Sigurðsson 1996, 32)

I argue that the same theory of Multiple Agree explains the Person-Case Constraints puzzle in Icelandic, with one further elaboration of the C-T theory. So far, I have assumed that all  $u\phi$ -features reside in the same head as a bundle.

(2.104) All  $u\phi$ -features reside in the same head.

Suppose, however, that features are distributed over C and T.

(2.105) Split- $\phi$  Hypothesis

$u\phi$ -features are syntactically distributed:  $u$ Person on C and  $u$ Number on T.<sup>3536</sup>

I would like to propose that the Person-Case Constraint is a constraint on value matching.

(2.106) The Person Case Constraint

Person feature values must not be in conflict under Multiple Agree.

In other words, person features crucially differ from number features in that conflicting person values lead to crash, while conflicting number values lead to default agreement.

(2.107) PCC is induced by a Person value conflict under Multiple Agree

(2.108) Person and Values

	DAT	NOM	Value of $u\phi$
Person	1/2	3	default
Person	3	3	default
Person	3	1/2	*
Person	1/2	1/2	*

Note that again by assumption, quirky elements cannot provide actual values to  $u\phi$ -features of a probe. Thus suppose that they provide 3rd person value. Then, if the “nominative” object is 3rd person, there should be no person value conflict either, under the mirrorsymmetric Multiple Agree. Thus, the sentence (2.109) is fine with default agreement. No problem arises either for the combination of a 3rd person quirky dative and a 3rd person nominative object.

<sup>35</sup>See Ritter (1991) among others for the “ $\phi$ -Split” in the DP domain. See Sigurðsson (1996, 2000) and Taraldsen (1995) for a proposal that person and number features are distinct projections and a different approach.

<sup>36</sup>The hypothesis of scattered distribution of  $u\phi$ -features might give some basis for understanding the facts: (i) that C and T must combine to probe and (ii) that T is the locus of realization of  $\phi$ -features. (ii) is considered to be a consequence of “Agreement Attraction” by T.

(2.109) Icelandic:

Mér leiddust strárnir.  
me(1Sg.D) bored(3Pl.) boys(Nom.D.Pl.)

'I found the boys boring.'

(2.110) Evaluation of Person Agreement under Mirrorsymmetric Agree at TRANSFER

$C_3 \dots DP_{1sg,dat} \dots T^{-pl} \dots \overline{DP}_{1sg,dat} DP_{3pl,nom}$  (default+3=default)

The sentence cannot converge under centrosymmetric Multiple Agree, since the 1st/2nd person value of the nominative object cannot agree with the 3rd person value of the quirky dative subject.

(2.111) Evaluation of Person Agreement under Centrosymmetric Agree at TRANSFER

$C^* \dots DP_{1sg,dat} \dots T^{-pl} \dots \overline{DP}_{1sg,dat} DP_{3pl,nom}$  (1/2↔3)

On the other hand, consider the combination of a 3rd person quirky dative and a 1st/2nd person nominative object. Under centrosymmetric Agree,  $DP_{Nom}$  enters into one-to-many relation with  $DP_{Dat}$  and T. The nominative object gives 1st/2nd person value to the probe uPerson feature, whereas the quirky dative gives a default 3rd person value irrespective of its own person feature. Hence the uPerson of C gets conflicting values from the goals and hence valuation of uPerson on C fails, resulting in ungrammaticality.

(2.112) Evaluation of Person Agreement under Mirrorsymmetric Agree at TRANSFER

$C^* \dots DP_{3sg,dat} \dots T^{-pl} \dots \overline{DP}_{3sg,dat} DP_{1/2pl,nom}$  (default+1/2=\*)

(2.113)  $DP_{2sg,dat} + DP_{1sg,nom} = *$  (conflict)

(2.114) Evaluation of Person Agreement under Centrosymmetric Agree at TRANSFER

$C^* \dots DP_{3sg,dat} \dots T^{-pl} \dots \overline{DP}_{3sg,dat} DP_{1/2pl,nom}$  (1/2↔3)

Now, it is interesting to note that the Person-Case Constraint is also weaker under a raising construction. The sentence is grammatical under a default 3rd person singular agreement, when the nominative DP is an argument of the embedded clause.

(2.115) Icelandic:

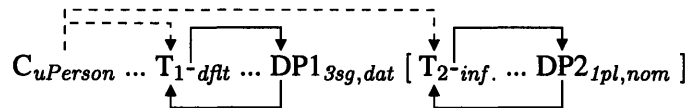
a. Henni þótti/\*þóttir þú vera dugleg.  
her(3Sg.Dat) thought(3Sg.)/thought(2Sg.) you(2Sg.) to-be industrious  
'She thought that you were industrious.' (Sigurðsson 1996, 36)

- b. þeim            hefur/\*höfum/\*hafa            alltaf fundist við            vinna  
 them(3Pl.D) has(3Sg.)/have(1Pl.)/have(3Pl.) always found we(1Pl.Nom) to-work  
 vel.  
 well  
 ‘They have always thought that we work well.’ (Sigurðsson 1996, 30, H. Sigurðsson p.c.)

Under the assumption that C-T<sub>1</sub> is the only probe in the derivation, there are two possible derivations depending on the type of the symmetry for Multiple Agree. In either type of Multiple Agree, however, a person value conflict results in ungrammaticality. So, the absence of the Person-Case Constraint effects is a mystery.

This suggests that the matrix C-T does not multiple-agree with DP<sub>Dat</sub> and DP<sub>Nom</sub>. But how? Again, the key is Multiple Select (C, T<sub>1</sub>, T<sub>2</sub>).

(2.116) Agreement under Multiple Select (C, T<sub>1</sub>, T<sub>2</sub>)



- (2.117) a. DP1<sub>3sg,dst</sub> → default  
 b. DP2<sub>1pl,nom</sub> → 1person

In the derivation above, the multiple selection by C creates two probes: C-T<sub>1</sub> and C-T<sub>2</sub>. Thus, two subderivations –Agree (C-T<sub>1</sub>, DP<sub>3sg,dst</sub>) and Agree (C-T<sub>2</sub>, DP<sub>1pl,nom</sub>)– take place simultaneously. Assuming that uPerson of C is valued by the closer relation Agree (C-T<sub>1</sub>, DP<sub>3sg,dst</sub>), the derivation converges with default agreement. The upshot is that multiple probes split up Multiple Agree and hence the lower DP<sub>nom</sub> does not enter into a direct agree relation with C’s uPerson, avoiding person value conflict.

(2.115b) is revealing in yet another important respect. Notice that the sentence is ungrammatical with 3rd person plural agreement. This indicates that it is impossible for uPerson and uNumber to be valued by different goals. That is, if default is required for uPerson, it is also required for uNumber. This again supports the view that C and T act as a unit.

Our theory further predicts that PCC effects appear whenever C-T enters into a Multiple Agree relation with a quirky dative and a nominative object, even if T is defective (i.e. infinitival). The prediction is borne out, as observed in Boeckx (2003).

(2.118) Icelandic:

- \* Jóni virtist Bjarna hafa líkað ég/við/þið.  
 John(D) seemed Bjarni(D) to-have liked I(1Sg.Nom)/we(1Pl.Nom)/you(Nom)

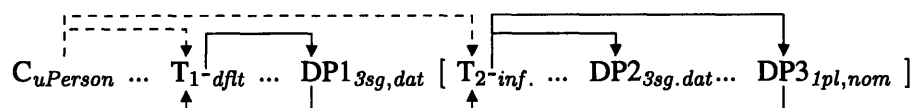
‘It seemed to John that Bjarni liked me/us/you.’ (Boeckx 2003)

(2.115) differs from (2.118) in that in the former, unlike the latter, T<sub>2</sub> enters into a Multiple Agree relation with the embedded quirky dative as well as the nominative object, resulting in a

person value conflict.<sup>37</sup>

To see this more clearly, look at (2.119). As (2.119) indicates, Agree (C-T<sub>2</sub>, DP2, DP1), even though it does not actually value the uPerson of C, results in value conflict.

(2.119) Agreement under Multiple Select (C, T<sub>1</sub>, T<sub>2</sub>)



The value conflict is summarized below.

- (2.120) a. For C-T<sub>2</sub>: DP2<sub>3sg.dat</sub>+DP1<sub>1pl.nom</sub> = \* (conflict)  
 b. For C-T<sub>1</sub>: DP1<sub>3sg.dat</sub> = default

To summarize, I have argued that the Person-Case Constraint results from a person value conflict under symmetric Multiple Agree. I argued that the locus of the uPerson feature must be higher than TP, because, unlike number agreement, quirky datives that have undergone A-movement to [Spec, TP] still intervene. Recall that for number agreement, quirky datives behave as if they were not there once they are dislocated out of the domain of T.<sup>38,39,40</sup>

<sup>37</sup>Of course, there is another derivation where T<sub>1</sub> enters into Multiple Agree with all the goals. This results in PCC effects and hence in ungrammaticality as well.

<sup>38</sup>Sigurðsson (1991, 1996) and Schütze (2003) observe that there are speakers who accept 1st/2nd nominative objects with the default form of predicates. It is not clear, however, how Schütze's (2003) approach can explain the fact that (2.118) is ungrammatical, even though there is no possibility for inflection for person and number.

<sup>39</sup>The following pair is of further interest. In (ib), the matrix quirky dative has been *Wh*-extracted and the embedded nominative subject DP has undergone SF. Interestingly, this feeds not only number agreement but also person agreement. Note, however, that in this example, the apparent SF crosses the matrix adverb *þá*, which should be disallowed if it is really an instance of SF. Furthermore, H. Sigurðsson (p.c.) pointed out to me that he feels some kind of focus effect on the dislocated embedded subject here (cf. Hrafnbjargarson 2004 for arguments that SF involves focus effects). I leave these issues for future investigation.

(i) Icelandic:

- a. Hverjum \*myndum/myndi þá hafa virst við vera gáfuð?  
 who(D) would(1Pl.)/would(3Sg) then have seemed we(1Pl.Nom) to-be intelligent  
 'To whom would we then have seemed to be intelligent?' (H. Sigurðsson's letter)
- b. Hverjum myndum/\*myndi við þá hafa virst vera gáfuð?  
 who(D) would(1Pl)/would(3Sg) we(1Pl.Nom) then have seemed to-be intelligent  
 'To whom would we then have seemed to be intelligent?' (H. Sigurðsson, letter)

<sup>40</sup>It is important to note that no speaker, to the best of my knowledge, accepts (i) with plural agreement. This confirms our approach proposed in this chapter. In the derivation (i), irrespective of the "timing" effects, a copy of the quirky dative *Wh*-element intervenes between the matrix T and the "nominative" object.



(2.121) Icelandic:

Hvaða stúdent **finnst/finnast** tölvurnar ljótar.  
 which student(Dat.Sg) find(Sg/Pl.) computers(D.Nom) ugly(Nom)

‘Which student finds the computers to be ugly?’ (contra Holmberg and Hróarsdóttir 2002, 2003)

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(i) Icelandic: (=2.51b)

Hvaða stúdent virðist/\*?virðast Ólafur líka hestarnir.  
 which student(Dat.Sg.) seem(Dflt./Pl.) Olaf(Dat) to-like horses(D.Nom.Pl.)

‘Which student does it seem to Olaf likes the horses?’ (Hiraiwa 2002d)

## 2.7 Consequences of Parallel Derivation

One striking consequence of the proposed theory of Agreement is that there is *no*  $\bar{A}$ -movement from a derived A-position, namely, [Spec, TP]. This is because, as delineated in Section 2.3, both Agree and Op-movement apply to a single occurrence of each element simultaneously. We have already seen one significant and surprising consequence in Icelandic agreement, where *Wh*-movement (more precisely, an  $\bar{A}$ -Chain) blocks agreement, even though it is dislocated by A-movement to [Spec, TP].

Then it is interesting to see if empirical facts, beyond the complex agreement system in Icelandic that we have seen above support this (surprising) prediction.

### 2.7.1 Quantifier Float in West Ulster English

McCloskey (2000) points out some puzzling data from West Ulster English.

(2.122) West Ulster English: McCloskey's Puzzle (McCloskey 2000)

- a. \*They were arrested **all** last night.
- b. **Who** was arrested **all** last night?
- c. \* They were throwing stones **all** around Butchers' Gate.
- d. **Who** was throwing stones **all** around Butchers' Gate?

The puzzle here is that while A-movement in (2.122a) and (2.122c) cannot strand the quantifier in the original position, a subsequent  $\bar{A}$ -movement looks as if it licensed the otherwise illicit quantifier float in (2.122b) and (2.122d). McCloskey (2000) speculates — quite correctly, I think — that it is as if *Wh*-movement took place from the  $v^*P$ -internal position. Crucially, in the derivation (2.122d), it must be the *Wh*-movement, not the A-movement that strands the quantifier. But if *Wh*-movement applies to the occurrence of the phrase [ $DP$  *who all*] in [Spec, TP], as the standard cyclicity requires, (2.122d) can never be derived since it is locally indistinguishable from the derivation (2.122c). But this solution gives rise to a serious challenge that the EPP cannot be satisfied, at least in a standard fashion. McCloskey (2000) thus contrives a mechanism by which the EPP can be suppressed in favor of avoiding an illicit movement (improper movement) in some cases.<sup>41</sup>

Under the PTPD, this seemingly paradoxical situation receives a natural explanation. For the purpose of discussion, let us adopt the following descriptive generalization as an account for the contrast between (2.122a)/(2.122c) and (2.122b)/(2.122d).

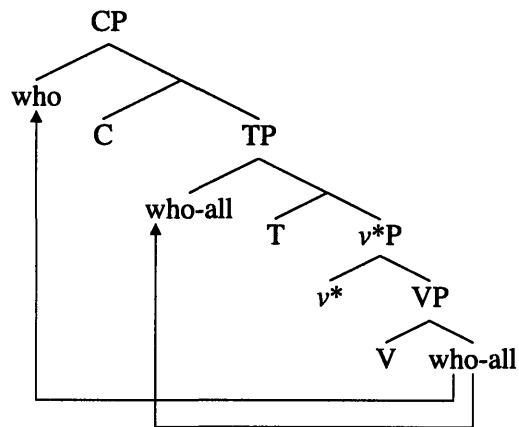
(2.123) Quantifier Float in West Ulster English

A-movement can strand a quantifier iff the host DP is at the phonological edge of the phase.

Now with (2.123) the mysterious data fall into place. By the PTPD, C and T probe simultaneously and hence T's  $EPP_{\phi}$  attracts the entire DP [ $DP$  *who all*] at the complement of V and C's  $EPP_{Op}$  attracts *who* of [ $DP$  *who*]. The derivation is illustrated below.

<sup>41</sup>McCloskey (2000) assumes that in West Ulster English, object shift and short verb-raising are possible, which I adopt here following him. See McCloskey (2000) for discussions.

## (2.124) Parallel Derivation and Quantifier Float



- (2.125) a. Chain<sub>Op</sub>: {who<sub>CP</sub>}  
 b. Chain<sub>φ</sub>: {who<sub>v\*P</sub>}  
 c. Chain<sub>φ</sub>: {who-all<sub>TP</sub>, ~~who-all~~<sub>v\*P</sub>}

The PTPD obtains the result that T's EPP is satisfied in the familiar way and, at the same time, *Wh*-movement applies to the copy in the original position, not the derived position. Thus the interplay of A-movement and  $\bar{A}$ -movement gives rise to the apparently paradoxical intricacy in quantifier float phenomena in West Ulster English.

## 2.7.2 ATB-Movement

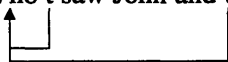
One central thesis founding the PTPD is that chains must be uniform. From this a prediction is available that a kind of Multiple Merge —attraction movement of multiple elements by a single position— should exhibit uniformity effects. I argue that ATB (Across-the-Board) Movement is an instance of Multiple Merge that applies to multiple goals, attracting them simultaneously. This conclusion is also supported in the light of Ross's Coordinate Structure Constraint (CSC) that prohibits attracting only one of the elements contained in conjuncts. If they are extracted simultaneously, no CSC violation is incurred.

Recall that one-to-many or many-to-one relations are severely constrained by interface conditions, in particular by PF consideration, since syntactic outcomes of Multiple Merge are, if literally transferred, illicit PF objects that are unlinearizable. As Williams (1978, 42) clearly stated "[O]bviously sentences are not spoken in "ATB format"".

ATB-Movement is a phenomenon in which multiple elements are redefined into a single occurrence. As such, it provides us an interesting case in which Multiple Merge does not result in an illicit PF object (i.e. ternary-branching). If multiple elements are moved simultaneously by a single probe head, then, both elements are merged with the probe simultaneously, which gives rise to a ternary structure. The only way to avoid the outcome is to unify the multiple occurrences to one. This is possible since both occurrences are phonologically the same.<sup>42</sup>

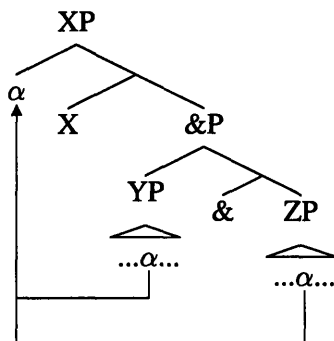
<sup>42</sup>Presumably, ATB-constructions may be thought of an instance of merging of a single element into multiple positions

(2.126) (I wonder) Who *t* saw John and *t* hit Bill?



Now by the Chain Uniformity Principle (repeated here as (2.128)), it is expected that this movement “chain” must be uniform.

(2.127) ATB-Movement



(2.128) CHAIN UNIFORMITY PRINCIPLE

Suppose  $y$  has been Merged with a head  $h$ . Then:

- a. Merge ( $x, y$ ) splits a chain if features of  $x$  and  $h$  are non-uniform.
- b. Merge ( $x, y$ ) unifies a chain if features of  $x$  and  $h$  are uniform.

In a nutshell, ATB-movement must form a uniform chain: either it leaves copies at both positions or it does not leave copies in either position. Crucially, it cannot leave a copy in one position and not in the other.

Williams (1978) observes that ATB-Movement obeys an interesting constraint; each of the ATB-moved *Wh*-element must be the same with respect to factorization. Interestingly, under our theory, factorization is subsumed under Chain Uniformity. Consider (2.129).

- (2.129)
- a. (I wonder) Who saw John and hit Bill?
  - b. (I wonder) Who John saw and Bill hit?
  - c. (I wonder) Who hit Bill and was taken to the hospital?
  - d. \*(I wonder) Who John saw and hit Bill?
  - e. \*(I wonder) Who saw John and Bill hit?
  - f. \*(I wonder) Who Bill hit and was taken to the hospital?

ATB movement from the local subject positions (see (2.129a)) and ATB movement from the local object positions (2.129b) are both well-formed. In the former, the ATB Chain is uniform because the operation applies to the Externally Merged occurrences (i.e. external arguments) and

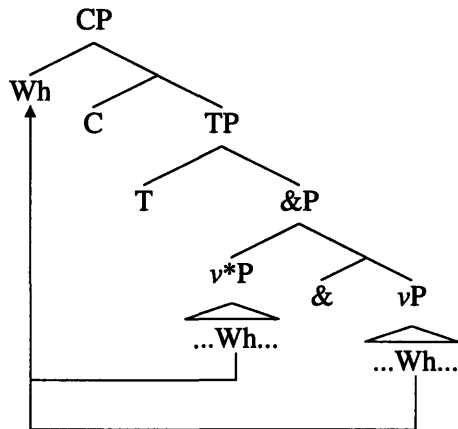
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(i.e. in each conjunct). If that is tenable, the multiple occurrences are not just the same phonologically but also the same in every respect. See Hiraiwa (2002a) for relevant discussion.

hence leaves a copy in each position. In the latter, the operation applies to the occurrences at the  $v^*P$  edges and hence does not have a copy in either position.

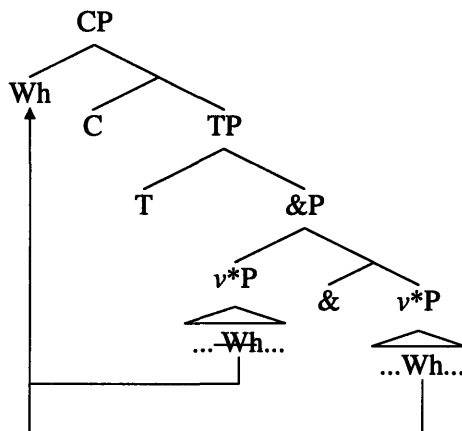
In the case of (2.129c), the chain is still homogeneous; both positions that ATB-movement applies to are External-Merged positions (subject and object positions) and hence a copy is left in each position.

(2.130) Licit ATB-Movement



On the other hand, (2.129d), (2.129e), and (2.129f) are ill-formed because the chains are heterogeneous; in (2.129d), for instance, the movement dependency between C and the first conjunct is a unified chain but the one between C and the second conjunct forms a split chain. (2.129e) is the reverse of (2.129d).

(2.131) Illicit ATB-Movement



The same account extends to the contrast (2.132). In both (2.132a) and (2.132d), at the highest CP phase-level, the ATB-movement applies to the same syntactic positions, namely, [Spec,  $v^*P$ ] of the matrix clause. However, in (2.132a) and (2.132b) the chains are heterogeneous but in (2.132c) and (2.132d) the chains are homogeneous. because in the former, *who* in [Spec,  $v^*P$ ] in the second

conjunct has been derived by *Wh*-movement, whereas in the latter both copies of *who* in [Spec,  $\nu^*$ P] have been equally derived by *Wh*-movement.<sup>43</sup>

- (2.132) a. \*(I wonder) Who saw John and Mary thinks that Bill hit?  
 b. \*(I wonder) Who saw John and Mary thinks that hit Bill?  
 c. (I wonder) Who John saw and Mary thinks Bill hit?  
 d. (I wonder) Who John saw and Mary thinks hit Bill?

### 2.7.3 Bulgarian *Russian-doll Questions*

Richards (2004) observes an interesting case of multiple *Wh*-fronting in Bulgarian. Bulgarian, as it is well known, is a multiple *Wh*-fronting language and hence all *Wh*-phrases must undergo fronting in this language. *Wh*-phrases embedded within another *Wh*-phrases are no exception. Consider below (2.133). As (2.133a) shows, the *Wh*-phrase *po kakvo* cannot remain within the dominating *Wh*-phrase. Rather, it also must undergo fronting to [Spec, CP], evacuating the DP. Of much significance is the fact that both word orders in (2.133b) and (2.133c) are licit in Bulgarian.

- (2.133) Bulgarian: (Richards 2004)
- a. \* Kolko studenti [**po kakvo**] [ot Bulgaria] vidja?  
 how-many students of what from Bulgaria you-saw  
 ‘How many students of what from Bulgaria did you see?’
- b. [**po kakvo**] kolko studenti [ot Bulgaria] vidja?  
 of what how-many students from Bulgaria you-saw  
 ‘How many students of what from Bulgaria did you see?’
- c. kolko studenti [ot Bulgaria] [**po kakvo**] vidja?  
 how-many students from Bulgaria of what you-saw  
 ‘How many students of what from Bulgaria did you see?’

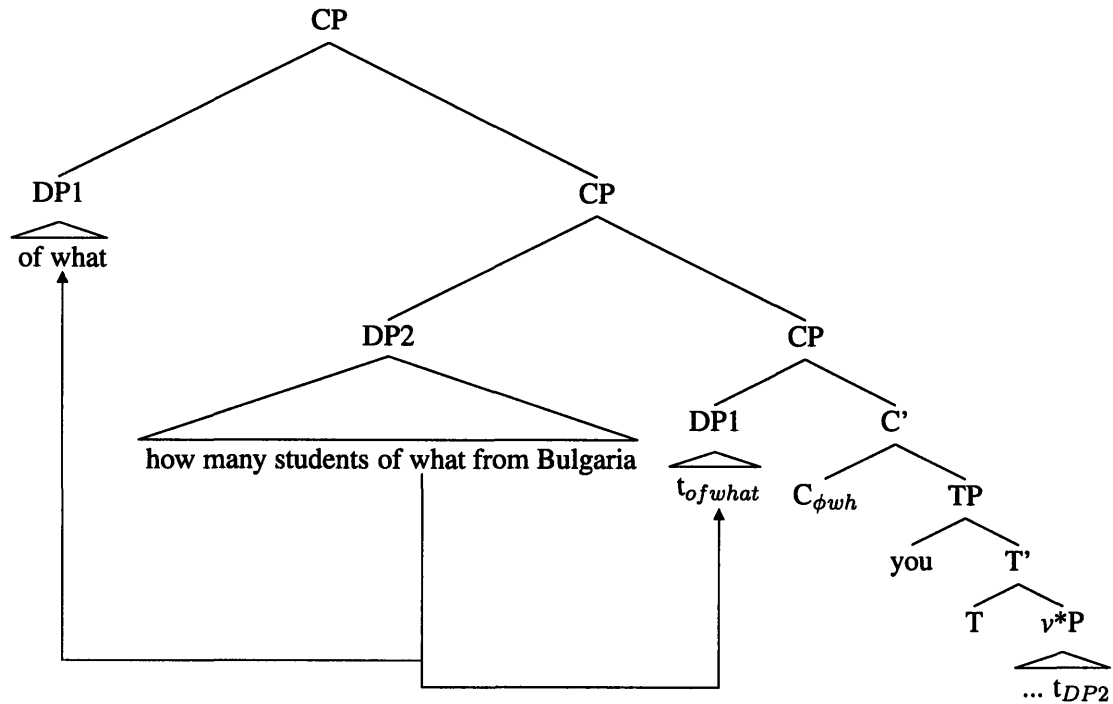
Based on these facts, Richards (2004) argues that lowering operations should be relativized to cyclicity and that one case of lowering that is not excluded by cyclicity is the derivation (2.134) of the Russian-doll Questions.

<sup>43</sup>Franks (1995) notes that the following example is ungrammatical

- (i) \* the man who John saw and it was thought kissed Mary

Given that the passive  $\nu$  is not a phase head, ATB *Wh*-movement applies to *who* at the edge of  $\nu$ P in the first conjunct and *who* at the edge of CP in the second conjunct. The chains formed are uniform and hence the ungrammaticality of (i) is unexpected. I assume that an ATB operation is also subject to a structural condition that the goals must be in the same positions of the same head (i.e. the complement of  $\sqrt{\tau}$ , the edge of  $\nu^*$ P, or the edge of CP). See Kasai (2003) for a different theory of ATB-movement.

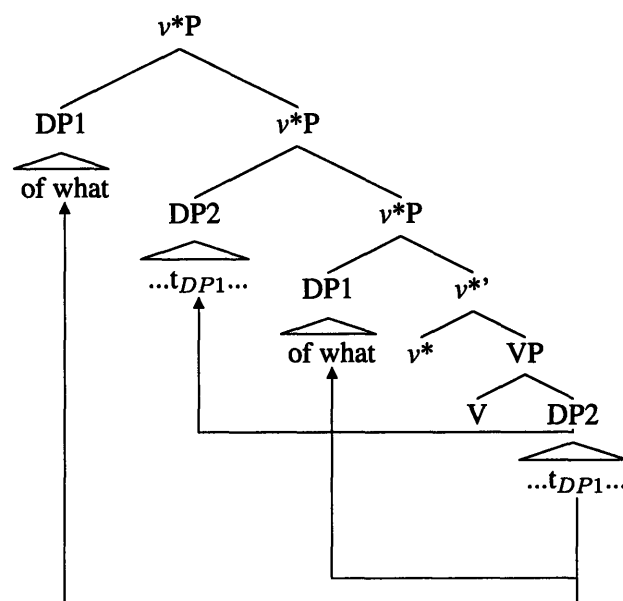
## (2.134) Lowering Derivation (Richards 2004)



Given our Conservation Law of Agree, DP1 in (2.134) can Agree with the probe C, since C at an earlier point of the derivation c-commanded DP2 and DP1 and hence enters into an Multiple Agree relation with them. But the question is whether such lowering should really be allowed.

The PTPD resolves the problem, reducing the Russian-doll Questions to a case of Multiple Merge. As shown in (2.135), the extraction of the whole *Wh*-phrase first occurs and then the extraction of the inner *Wh*-phrase applies to the original copy of the extracted entire *Wh*-phrase. Thus *Wh*-movements of DP1 and DP2 take place simultaneously. Given no condition to specify the relative order between DP1 and DP2 in this derivation, DP1 can either move to the specifier above DP2 or “tuck in” under DP2.

## (2.135) Lowering Derivation (Richards 2004)



## 2.7.4 The Edge of the Edge

Chomsky (p.c.) present more evidence for the inaccessibility of the edge of the edge of a phase. In the following examples, the *Wh*-element *of which* can be extracted out of the derived subject while it cannot be extracted out of the external argument.<sup>44</sup>

## (2.136) English: (Chomsky 2004b)

- a. my friend Mary, of whom a picture was taken/arrived in the mail,...
- b. \*my friend Mary, of whom a picture hit John on the head when it fell,...

If *of whom* is extracted after the DP *a picture of whom* is raised to [Spec, TP], as is forced under the standard cyclicity, there should be a Subject Condition effect. This prediction is refuted here, surprisingly. The fact makes sense, however, under the PTPD;

<sup>44</sup>Chomsky (Fall 2004, class lectures) observes that this kind of island effect in English almost disappears when a raising structure is involved. This indicates that something that we have not explicated is going on with the raising derivation. In other words, there seems to be a derivational ordering effect for the intermediate infinitival T. This kind of effects is missing for long-distance extraction out of CP. If such a derivational ordering were allowed, (i) would be grammatical with plural agreement.

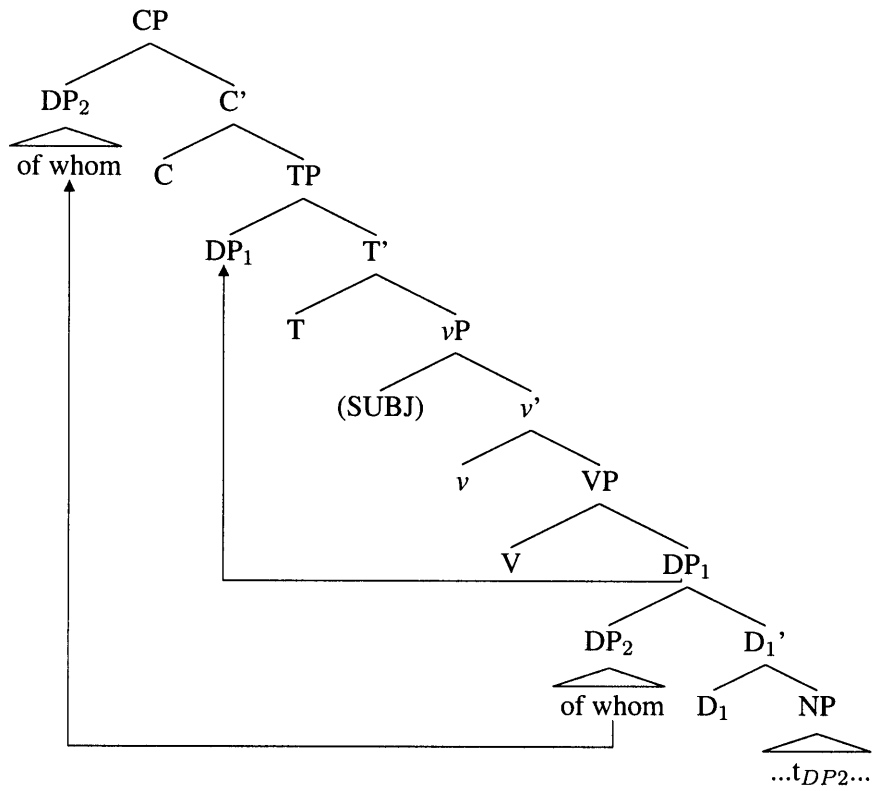
## (i) Icelandic:

Hvaða stúdent veist þú að finnst/\*finnast tölvurnar ljótar?  
 which student(Dat.Sg.) know you C find(Sg.)/find(Pl.) computers(D.Nom.Pl.) ugly

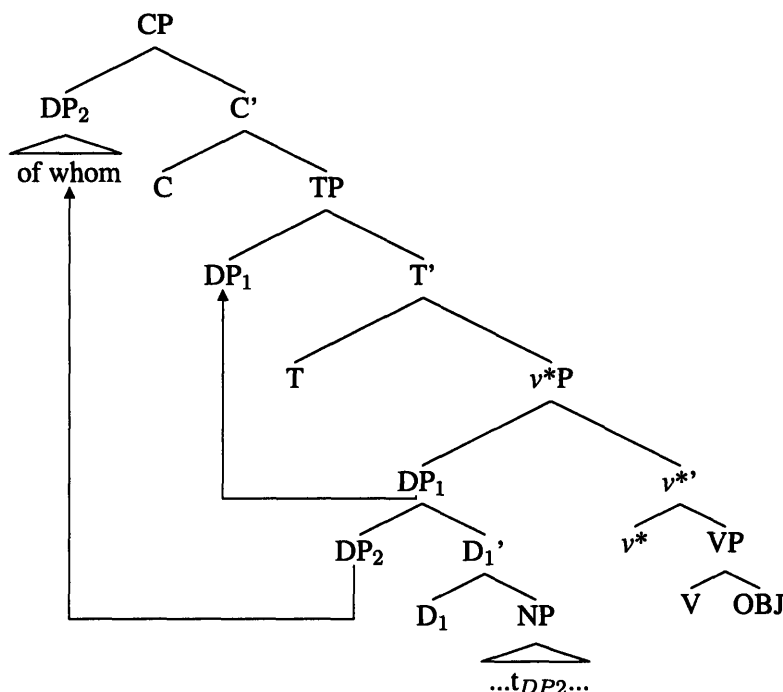
'Which student do you know considers the computers ugly?'



(2.137) Extraction out of Objects



## (2.138) Extraction out of Subjects



C and T have  $OCC_{wh}$  and  $u\phi$  (percolated from C by assumption), respectively. C attracts *of whom* from [Spec, DP] and T attracts *a picture of whom* to [Spec, TP]. Crucially, C cannot attract *of whom* from *a picture of whom* in [Spec, TP], simply because the latter occurrence does not yet exist and hence the absence of the Subject Condition effect.

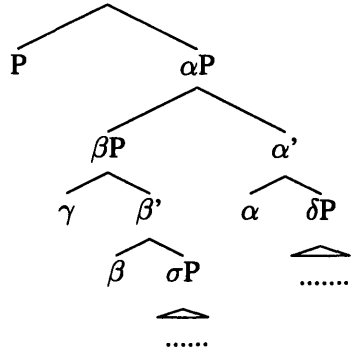
- (2.139) a.  $\bar{A}$ -Chain (*of-whom*<sub>CP</sub>, *of-whom*<sub>VP</sub>)  
 b. A-Chain (*of-whom-a-picture*<sub>TP</sub>, *of-whom-a-picture*<sub>VP</sub>)

Chomsky further attributes the ungrammaticality to the subject island condition. Generalizing further, I propose Inaccessibility of the Edge of the Edge.

- (2.140) An element  $\gamma$ , which is at the edge of a phase head  $\beta$ , which is also at the edge of  $\alpha$  cannot be accessed by a higher probe P.

In other words, only elements at the edge of a phase can be extracted. Now, consider the structure below.

## (2.141) The Edge of the Edge



Suppose P is a probe and  $\alpha$  and  $\beta$  are phase heads. In this configuration,  $\gamma$ , which is at the edge of the phase  $\beta$  which is also at the edge of the phase head  $\alpha$ , is inaccessible to the probe P.

Baker (1988) shows that in the Bantu language Chichewa, possessor-raising out of objects is grammatical (2.142).

## (2.142) Chichewa: Possessor-Raising out of Objects (Baker 1988, 271)

- a. Fisi a-na-dy-a nsomba z-a kalulu.  
hyena Sp-Pst-eat-Asp fish Agr-of hare  
'The hyena ate the hare's fish.'
- b. Fisi a-na-dy-er-a kalulu nsomba.  
hyena Sp-Pst-eat-Appl-Asp hare fish  
'The hyena ate the hare's fish.'

However, possessor-raising out of the subject external argument results in ungrammaticality as shown in (2.143).

## (2.143) Chichewa: Possessor-Raising out of Subjects (Baker 1988, 275)

- a. Mbuzi z-a kalulu zi-na-dy-a udzu.  
goats of hare Sp-Pst-eat-Asp grass  
'The hare's goats ate the grass.'
- b. \*mbuzi zi-na-dy(-er)-a kalulu udzu.  
goats Sp-Pst-eat-Appl-Asp hare grass  
'The hare's goats ate the grass.'
- c. \*kalulu zi-na-dy(-er)-a udzu mbuzi.  
hare Sp-Pst-eat-Appl-Asp grass goats  
'The hare's goats ate the grass.'

Baker (1988) states that the same asymmetry is widely observed cross-linguistically (see also Massam 1985, Ura 1996), including Chamorro (Gibson 1992), Acehnese (Duire 1987), Swahili (Keach and Rochemont 1992), and Hebrew (Landau 1999).<sup>45</sup>

<sup>45</sup>Broadwell (1990) observes, however, that Chikasaw does allow possessor-raising out of subjects.

The same restriction is observed in Kinyarwanda as discussed in Kimenyi (1980), but in a more interesting way.<sup>46</sup> Kimenyi discusses examples of double possessor-raising (see also Davies 1997). The lower possessor *umugore* cannot undergo possessor raising out of the the possessor *uumwaana*. Double Possessor Raising is also illicit.

First, consider normal possessor-raising out of objects. As shown in (2.144), the possessor of the object can raise to become a direct object of the verb.

(2.144) Kinyarwanda: Possessor Raising (Kimenyi 1980, 98)

- a. Umuhuŋgu a-ra-som-a        igitabo **cy'umukoobwa**.  
 boy            he-Pres-read-Asp book    of-girl  
 'The boy is reading the book of the girl.'
- b. Umuhuŋgu a-ra-som-er-a        **umukoobwa** igitabo.  
 boy            he-Pres-read-Appl-Asp girl            book  
 'The boy is reading the book of the girl.'

Quite significantly, it is illicit to raise the possessor out of another possessor of the direct object. As shown in (2.145b), the complex possessor can raise out of its host object DP. Crucially, however, (2.145c) establishes that the possessor cannot be raised out of another possessor.

(2.145) Kinyarwanda (Kimenyi 1980, 99, Baker 1988)

- a. umukoobwa a-ra-som-a        [igitabo [**cy'uumwaana w'umugore**]].  
 girl            Sp-Pres-read-Asp book    of-child            of-woman  
 'The girl is reading the book of the child of the woman.'
- b. umukoobwa a-ra-som-er-a        [**uumwaana w'umugore**] [igitabo ].  
 girl            Sp-Pres-read-Appl-Asp child            of-woman    book  
 'The girl is reading the book of the child of the woman.'
- c. \* umukoobwa a-ra-som-er-a        **umugore** [igitabo [cy'uumwaana ]].  
 girl            Sp-Pres-read-Asp woman    book    of-child  
 'The girl is reading the book of the child of the woman.'
- d. \* umukoobwa a-ra-som-er-er-a        **umugore uumwaana** [igitabo ].  
 girl            Sp-Pres-read-Asp woman    child            book  
 'The girl is reading the book of the child of the woman.'

The asymmetry presents evidence for another instance of the ban on extracting an element from the edge of the edge of a phase –i.e. extraction of an element within a DP that is in the specifier of

(i) Chikasaw: (Broadwell 1990)

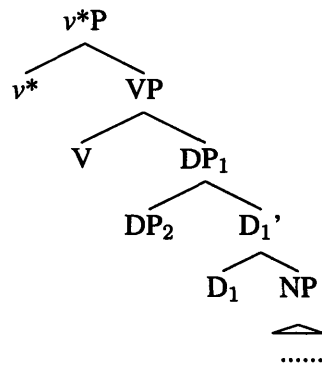
Jan-at fosh'-at in-taloowa.  
 Jan-Nom bird-Nom 3-sing

'Jan's bird sings.'

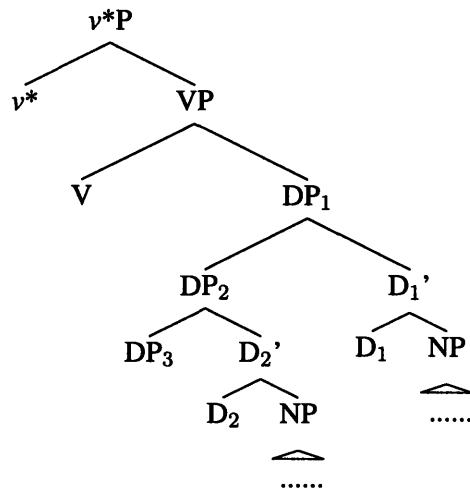
<sup>46</sup>Kimenyi (1980) reports objectivization out of internal arguments (e.g. possessor raising), but does not have any example of possessor raising out of external arguments.

another DP.

(2.146) Agree ( $v^*$ , DP<sub>2</sub>)



(2.147) \*Agree ( $v^*$ , DP<sub>3</sub>)



This is revealing in two respects. It adds another piece of evidence for the inaccessibility of the edge of the edge of a phase, and, more strikingly, it shows that a DP is a phase like a CP and a  $v^*P$ .<sup>47</sup>

<sup>47</sup>There is one confound, however. Inalienable possessor raising allows double-raising.

(i) Kinyarwanda (Kimenyi 1980)

- a. Umugabo y-a-vun-nye ukuguru k'úmwana w'úmwana.  
man he-Pst-break-Asp leg of-child of-woman  
'The man broke the leg of the woman's child.'
- b. Umugabo y-a-vun-nye úmwana w'úmwana ukuguru.  
man he-Pst-break-Asp child of-woman leg  
'The man broke the leg of the woman's child.'
- c. Umugabo y-a-vun-i-nye umugóre úmwana ukuguru.  
man he-Pst-break-Appl-Asp woman child leg

## 2.8 Concluding Remarks

In this chapter, I have defended the thesis of *Derivational Simultaneity* and proposed a PROBE THEORY OF PARALLEL DERIVATION (PTPD), while elaborating on the theory of *Multiple Agree*. The proposed theory neatly accounts for a wide range of the intricate Icelandic agreement phenomena with an articulation of a chain formation mechanism. In particular, it has been demonstrated that the PTPD makes correct predictions about the interactions between agreement, intervention, and varieties of movement types.

The two symmetric considerations —MIRRORSYMMETRY and CENTROSYMMETRY— play crucial roles in explicating the intricacies of Icelandic agreement phenomena. The proposed theory of agreement has also been shown to extend beyond Icelandic to Hindi gender agreement, English number agreement, and to a limited extent, French past participle agreement.

Finally, it has also been demonstrated that the PTPD has a far-reaching consequence for phenomena other than agreement, including the quantifier float in West Ulster English (McCloskey 2000) and *Russian-Doll* Questions (Richards 2004) are provided with a principled explanation under the PTPD. Another consequence of the present chapter is the availability for ATB-movement of a principled explicit mechanism. And finally, further support has been added for the inaccessibility of the edge of the edge of a phase.

If the enterprise undertaken in this chapter is successful, two significant theoretical implications come into a picture: the thesis of *Derivational Simultaneity* and *Multiplicity*. Both of these notions have often been explicitly or implicitly rejected or ignored in the previous literature. The success of these theses may bring to light a radically different new picture of  $C_{HL}$ .

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‘The man broke the leg of the woman’s child.’

As Baker (1988, 483n.6) notes, syntactic restrictions seem to be looser for inalienable possessors. More investigation is necessary and I will not go into details here. See also Massam (1985).

## Chapter 3

# *c*-T: Nominative-Genitive Conversion

### 3.1 Introduction

NOMINATIVE-GENITIVE CONVERSION (hereafter NGC) in Japanese, which is also often called *Ga/No Conversion*, is one of the most intriguing syntactic phenomena in the generative grammatical study of Japanese (see Harada 1971, 1976, Bedel 1972, Inoue 1976, Shibatani 1976, 1978, Nakai 1980, Saito 1982, Fukui 1986, Fukui and Nishigauchi 1992, Terada 1990, Murasugi 1991, Miyagawa 1989, 1993, Ura 1993, Sakai 1994, Hasegawa 1995, Watanabe 1994, 1996a,b, and Ochi 2001, and Tada 2002, among many others).<sup>1</sup> Nevertheless, as we will see below, the phenomenon has not yet been provided with a theoretically and empirically adequate account.

NGC is a phenomenon in which Case-marking on the subject DP alternates between nominative and genitive Cases under certain syntactic conditions. The purpose of this chapter is to elucidate the architecture of Case and agreement and reveal that Case is a property of the C-T system within the framework of the Minimalist Program (Chomsky 1995, 2000, 2001, 2004a, in press). The CP/DP Supercategorical Symmetry brings about an important implication of the  $c_2$ -T theory of Case. Namely, the C-T relation is one of the two manifestations of the general  $c_2$ -T relation. The other manifestation is  $D_2$ -T. I argue that this is the core mechanism of NGC cross-linguistically. The theory provides a principled account for the mystery in Watanabe's theory of NGC: Why is it that “*Wh*-Agreement” takes a form of nominalization and/or Genitive Case-marking in various languages?

Another aim is to place NGC in a cross-linguistic perspective, bringing new insight into the phenomenon. The previous study of NGC has paid little attention to languages other than Japanese. As we will see in Section 3.6, however, NGC (or genitive Case-marking on the subject) can be observed in fact in many other languages, such as Cuzco Quechua (the Quechuan family), Yaqui,

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<sup>1</sup>I am grateful to Cedric Boeckx, Noam Chomsky, Chris Collins, Ken Hale, Sabine Iatridou, Howard Lasnik, Ken-ichi Mihara, Shigeru Miyagawa, David Pesetsky, Norvin Richards, Hiromu Sakai, Hiroyuki Ura, and Akira Watanabe for helpful comments and discussions at various stages of the chapter. Special thanks are due to the late Ken Hale for his insightful comments, discussions, friendship and warm encouragement. Portions of earlier versions of this chapter have been presented at various opportunities, including the 117th annual meeting of Linguistic Society of Japan held at Yamaguchi University (November 1998), the 10th Anniversary Japanese/Korean Linguistics conference held at UCLA (October, 2000), the 18th English Linguistic Society of Japan held at Koonan University (November, 2000).

Wappo, Chemehuevi and Nevome (the Uto-Aztecan family), Turkish, Tuvan and Uzbek (the Turkic family), Mongolian and Dagur (the Mongolian family), Chamorro, Hawaiian (the Austronesian family), Mishing (Miri), Apatani, Zhuokeji rGyalrong (the Tibeto-Burman family) Kayardild (the Australian family), and Middle Korean just to name a few (see Section 3.6 for a fuller list of languages with NGC). In so doing, important universal aspects of the phenomenon are brought to light. In the meantime, it is also shown that a diachronic perspective reveals an important aspect of the nature of the Case and agreement system in Japanese syntax.

The organization of this chapter is as follows. Section 3.2 introduces the  $c_2$ -T Theory of NGC. I argue that genitive Case valuation in NGC is done under the same mechanism of nominative Case valuation founded on the  $c_2$ -T relation and the  $c_3$ - $c_2$  relation. Section 3.3 first takes a brief look at the two major theories of NGC proposed in the literature, the ECM/Raising analysis (Miyagawa 1993, Ura 1993 and Ochi 2001) and the *Wh*-agreement analysis (Watanabe 1994, 1996a,b), respectively. Section 3.3 also shows ample data which reveals serious empirical inadequacies of the previous approaches and then presents a new descriptive generalization of NGC, for which a theoretical explanation is provided by our proposed theory. Section 3.4 further demonstrates that NGC does not show intervention effects as predicted by the proposed theory of NGC and Multiple Agree introduced in Chapter 2. Section 3.5 presents several additional arguments for our claim that genitive Case is valued by the C-T system. Section 3.6 takes a cross-linguistic perspective on NGC and shows that the same phenomenon is observed in many other languages, and a cross-linguistic generalization of NGC is suggested. Section 3.7 explores the syntactic nature of transitivity restrictions and parametric variation in accusative Case valuation. Section 3.8 is a discussion of some loose ends. Finally, Section 3.9 concludes the chapter.

## 3.2 Agree ( $c_2$ -T, G)

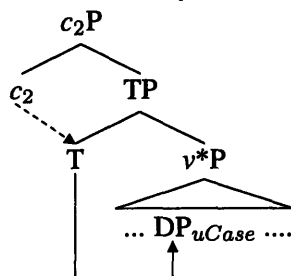
### 3.2.1 The C-T Relation

This chapter argues that assignment of Case and agreement is done by T in conjunction with C.

(3.1) C-T as a whole values the structural Case on DP as genitive.

Assuming a framework of (Multiple) Agree (see Chapter 2 and Chomsky 2000, 2001, 2004a), I propose that C-T as a whole functions as a probe. Reframing it under the proposed Supercategorial Theory of CP/DP Symmetry, the mechanism of Nominative Case valuation is as follows.

(3.2) The  $c_2$ -T Theory of Case





Valuation of unvalued features proceeds as follows.

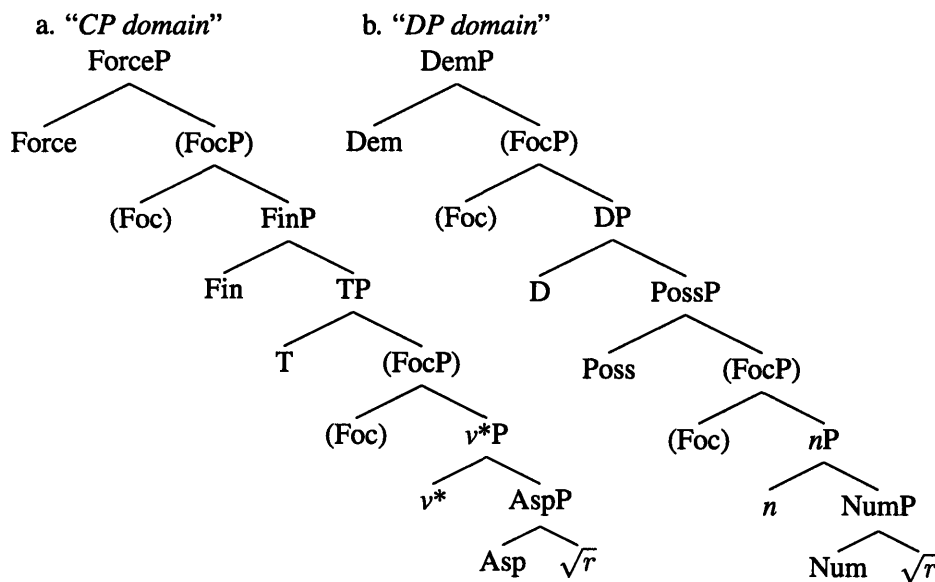
- (3.3) Agree ( $c_2$ -T,  $g$ ) =:
- Value ( $c_2$ -T,  $g$ ):  $uCase$  of  $g$  is valued.
  - Value ( $g$ ,  $c_2$ -T):  $u\phi$  of C-T is valued.

As has been extensively discussed in the previous chapter, the collaboration between “C” and “T” is made possible by the PTPD. T, lacking any unvalued  $\phi$ -features, cannot probe by itself and has to wait until C is merged, and  $u\phi$ -features are transmitted down. Once C is merged, T acts as a probe in conjunction with C.<sup>2</sup>

I further argue that the same mechanism is at work for genitive Case valuation in NGC. To see why, let us review the supercategorial structure.

### 3.2.2 The CP/DP Symmetry

#### (3.4) CP/DP PARALLELISM



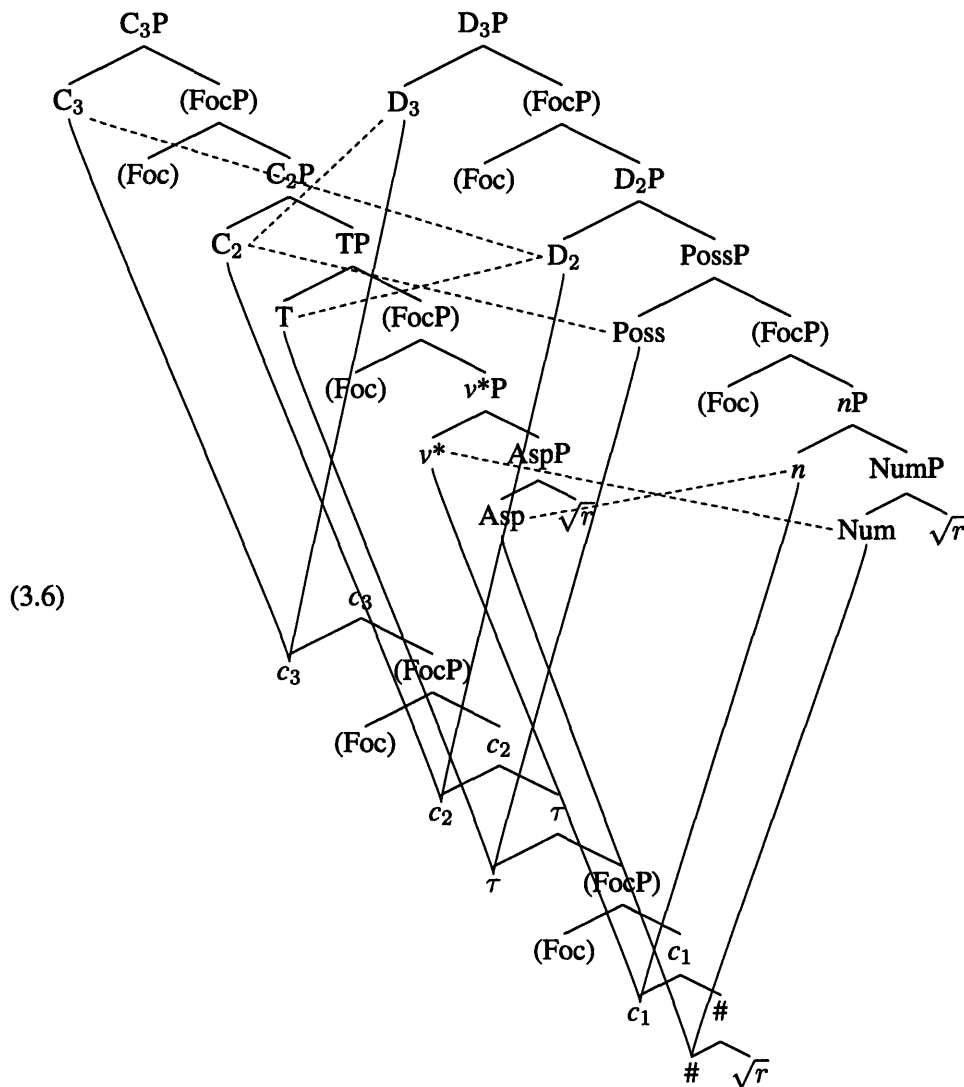
Based on the symmetric structure in (3.4), I take a step further and put forth the SUPERCATEGORIAL THEORY OF CP/DP SYMMETRY (3.5) and (3.6).

<sup>2</sup>For versions of the C-T Theory of Case, see Watanabe (1993), Iatridou (1988/1993), Hiraiwa (2001b), Pesetsky and Torrego (2001).

## (3.5) Supercategorical Theory of CP/DP Symmetry

a. "CP domain"

b. "DP domain"



Under the CP/DP Symmetry Theory, the category dubbed as  $c_3$  is a supercategory, lacking any features –categorial or inherent/unvalued– at the time of Merge. Those features are inserted late in the narrow syntactic derivation –at Transfer.

DPs and CPs have internal syntax as well as external syntax. Internally, Agree and Merge apply within them. Externally, they function as arguments and hence become goals for Agree and Merge. I propose that the lower  $c_2$  is the locus of  $u\phi$ -features for the internal syntax while the external  $c_3$  is the locus of inherent features (inherent  $\phi$ -features and  $u$ Case) for the external syntax.

- (3.7) a.  $C_2$  is the locus of  $u\phi$ -features for the internal syntax.  
 b.  $C_3$  is the locus of  $u$ Case and inherent  $\phi$ -features for the external syntax.

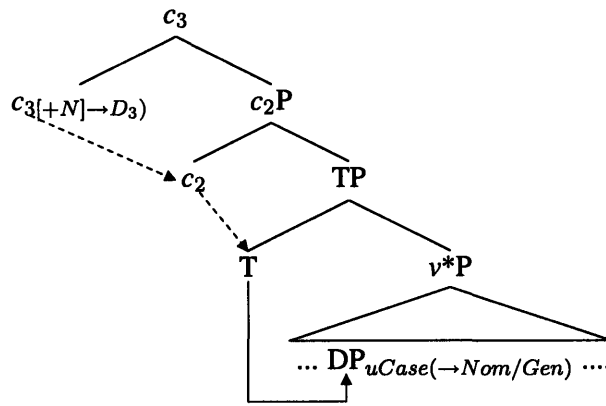
Since  $c_3$  is the interface with the external syntax, I propose that  $c_3$  is the element that determines the categorial status of its complement. Namely, at Transfer,  $c_3$  becomes either  $C_3$  or  $D_3$ . This is done by insertion of a categorial feature [+N]: if [+N] is inserted into  $c_3$ ,  $c_3$  becomes  $D_3$ , whereas it is “verbal” if a [-N] feature is inserted.

If this is on the right track, the status of  $c_2$  is determined by a feature of  $c_3$  at Transfer. Thus, as a result, the  $c_2$ -T relation is affected by  $c_3$ . I take this to be non-trivial and propose that Case valuation by  $c_2$ -T is determined by  $c_3$ . More specifically:

(3.8) Agree ( $c_2$ -T,  $g$ ) =:

- a. Value ( $c_2$ -T,  $g_{uCase \rightarrow Gen}$ ), if  $c_3$  gets [+N].
- b. Value ( $c_2$ -T,  $g_{uCase \rightarrow Nom}$ ), irrespective of a categorial feature of  $c_3$ .

(3.9) The  $c_2$ - $\tau$  Theory of Case: Nominative/Genitive Case Assignment (Chapter 3)



(3.8) consists of three parts: First, the “C-T” system is formed via Select ( $c_2$ , T) and Select ( $c_3$ ,  $c_2$ ). Second, the C-T system as a whole is responsible for Case valuation, and Case is valued under Agree ( $c_2$ -T,  $g$ ). Thus, genitive Case is valued under Agree ( $c_2$ -T,  $g$ ), in parallel with nominative Case valuation, with the difference reduced to a property of  $c_3$ . I assume, anticipating the cross-linguistic variation reviewed later, that in Japanese, the categorial determination of  $c_2$  by  $c_3$  creates ambiguity:  $c_2$  may be interpreted as if it is [-N] or [+N] in the presence of the [+N] categorial feature on  $c_3$ .

An examination reveals the following correlations between Case valuation and external  $c_3$  and its categorial/Case property.

(3.10) Correlations between Case valuation and properties of C

	Internal Case	External Case
$\emptyset$	NOM	$\emptyset$
-to	NOM	$\emptyset$
-toiu	NOM	$\emptyset$
-no	NOM/GEN	uCase
-koto	NOM/GEN	uCase

In other words, NGC is allowed when the external  $c_3$  gets [+N] categorial status and it correlates with whether  $c_3$  can be Case-marked or not.

The proposed theory brings two important consequences for the analysis of NGC. One is that it predicts that NGC is allowed in structures that lack *Wh*-agreement (Watanabe 1994, 1996a,b) or a D head to assign genitive Case (Miyagawa 1993, Ochi 2001). Section 3.3 and Section 3.4 show much empirical evidence that this prediction is indeed borne out and that therefore neither of the previous theories is tenable. The other important point is that the proposed theory argues that the probe  $\phi$ -features for nominative Case and the ones for genitive Case in NGC are the same  $\phi$ -features, as opposed to the ECM/Raising theory, which argues that the probe for genitive Case is the  $\phi$ -features of the structurally higher D distinct from T. We will see in Section 3.4 and 3.5 that this property manifests itself as a fundamental difference in locality and intervention between the two constructions.

### 3.3 Nominative-Genitive Conversion

#### 3.3.1 NGC in the Past

NGC is a construction in which the nominative-marked subject optionally alternates with the genitive-marked subject in relative clauses and nominal complements as in the following Japanese examples (3.11).

(3.11) Japanese::

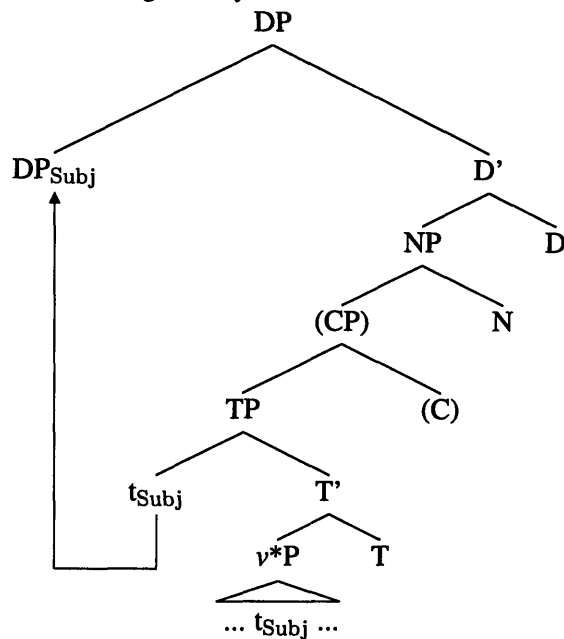
- a. [ Kinoo John-**ga** kat-ta hon]-wa omosiro-i.  
yesterday John-Nom buy-Pst.Adn book-Top interesting-Prs  
'the book which John bought yesterday is interesting.'
- b. [ Kinoo John-**no** kat-ta hon]-wa omosiro-i.  
yesterday John-Gen buy-Pst.Adn book-Top interesting-Prs  
'The book which John bought yesterday is interesting.'

Roughly speaking, there have been two major proposals pertaining to NGC, the ECM/Raising analysis (Miyagawa 1993 and Ochi 2001 among many others) and the *Wh*-agreement analysis (Watanabe 1994, 1996a,b). In this section, we first overview the previous theories of NGC and then introduce our theory of genitive Case Agree.

##### 3.3.1.1 Miyagawa (1993)/Ochi (2001): ECM/Raising Analysis

Bedel (1972) observes that NGC is allowed in "nominal" structures; namely, relative clauses. Miyagawa (1993), building on Bedel's (1972) insight, proposes the LF Case checking analysis, which argues that the genitive Case feature is checked by the external relative head D at LF.

## (3.12) ECM/Raising Theory

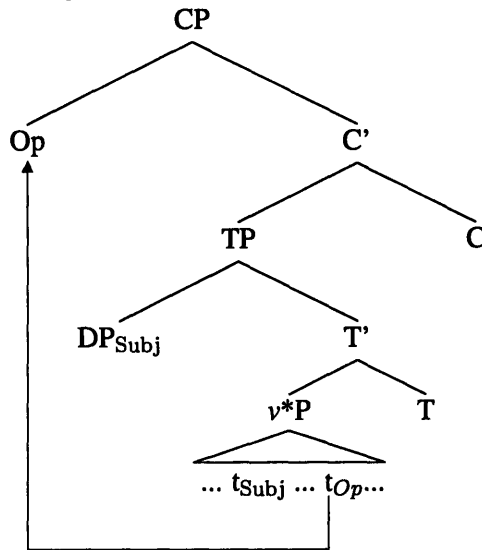


Let us term this approach the ECM/Raising analysis (Bedel 1972, Inoue 1976, Nakai 1980, Saito 1982, Fukui 1986, Terada 1990, Murasugi 1991, Miyagawa 1989, 1993 Ura 1993, Sakai 1994, Hasegawa 1995, Ochi 2001 among others). It should be noted that under this analysis, the assignment of Genitive Case can be regarded as an instance of ECM/Raising on parallel with the ECM construction in English, because the dependency crosses the TP (and perhaps CP), as shown in (3.12). In other words, the ECM/Raising analysis presumes that a bi-clausal structure is crucial for NGC.<sup>3</sup> One of the advantages of the approach is that the generalization is derived quite straightforwardly that NGC is limited to relative clauses and nominal constructions; only these structures have a D head to check the relevant genitive Case-feature.

### 3.3.1.2 Watanabe (1994, 1996a,b): *Wh*-agreement Analysis

Watanabe (1994, 1996a,b), on the other hand, proposes an intriguing alternative, in which the genitive Case-marking on the subject is a realization of *Wh*-agreement, on a par with French stylistic inversion.

<sup>3</sup>See Ura (1993) for a hyper-raising analysis and Ochi (2001) for an ECM analysis of NGC.

(3.13) *Wh*-Agreement Theory

In (3.13) the operator movement triggers *Wh*-agreement, which is argued to be responsible for NGC. Let us term this approach the *Wh*-agreement analysis. Watanabe (1994, 1996a,b) claims that the distribution of both NGC and French stylistic inversion is limited to *Wh*-agreement domains and argues that as a manifestation of *Wh*-agreement, the EPP-feature is cancelled and therefore the subject remains in situ, realizing a genitive-marking as a “disguised” form of nominative case-marking.

There are some problems with Watanabe’s theory of NGC: (i) Watanabe’s theory does not give any clear explanation why *Wh*-agreement in Japanese manifests itself as overt *Genitive* Case-marking on the subject. Put differently, why is the case alternation quite often cross-linguistically between Nominative and Genitive, not, for example, between Nominative and Accusative (see Section 3.3) and (ii) how is the genitive Case assigned/valued? In addition, (iii) not all *Wh*-agreement environments allow NGC, as he notes. Finally, (iv) the idea that the EPP is lifted as a result of *Wh*-agreement is inevitably counter-cyclic and in fact there is evidence that genitive subjects are hierarchically at least as high as nominative subjects (see Section 3.4).

In the sections that follow, we will see that both approaches, despite their initial attractions, encounter serious empirical problems. We first overview general properties of NGC. Then we demonstrate, presenting a set of empirical counterevidence against the generalization, that a close examination reveals empirical inadequacies of the ECM/Raising analysis of NGC (see Miyagawa 1993 and Ochi 2001) and leads to a new generalization. It is shown that our new generalization is correctly explained by the theory of NGC proposed in the previous section.

### 3.3.2 General Properties of NGC

As we have briefly noted in Section 3.3, NGC is a construction in which a nominative subject optionally alternates with a genitive subject in certain structures, which has been observed in a very wide range of languages such as Japanese, Cuzco Quechua (Lefebvre and Muysken 1988),

Yaqui (Dedrick and Casad 1999), Wappo (Li and Thompson 1978), Chemehuevi (Press 1986), Nevome (Shaul 1986), Middle Korean (Yang 1995, Sohn 1998), Dagur (Hale and Ning 1996, Hale 2002, Ken Hale p.c.), Modern Mongolian (Binnik 1979), many languages of the Turkic family such as Turkish (George and Kornfilt 1981), Kural 1993, Kornfilt 1984, 1987, 2000, Aygen 2003) and Uzbek (Boeschoten 1998), some languages of the Austronesian family such as Chamorro (Gibson 1980, Chung 1982) and Hawaiian (Hawkins 1979), some languages in the Australian family such as Kayardild (Nicholas 1995) and Lardil (N. Richards p.c.) and some Tibeto-Burman languages such as Mishing (Miri) (Jackson T.-S. Sun p.c.), Prasad 1991) and Apatani (Abraham 1985), and African languages such as Ewe (Collins 1993), just to list a few.

As it has been pointed out repeatedly in the literature, NGC is allowed in relative clauses and nominal complements (Bedel 1972), as shown in (3.14)–(3.15).

## (3.14) Japanese:

- a. [Kinoo John-ga kat-ta hon]-wa omosiro-i.  
yesterday John-Nom buy-Pst.Adn book-Top interesting-Prs  
'The book which John bought yesterday is interesting.'
- b. [Kinoo John-no kat-ta hon]-wa omosiro-i.  
yesterday John-Gen buy-Pst.Adn book-Top interesting-Prs  
'The book which John bought yesterday is interesting.'

## (3.15) Japanese:

- a. John-wa [<sub>CP</sub> kinoo Mary-ga ki-ta koto/no]-wo sira-nakat-ta.  
John-Top yesterday Mary-Nom come-Pst.Adn FN/C-Acc know-Neg-Pst  
'John didn't know that Mary came yesterday.'
- b. John-wa [<sub>CP</sub> kinoo Mary-no ki-ta koto/no]-wo sira-nakat-ta.  
ohn-Top yesterday Mary-Gen come-Pst.Adn FN/C-Acc know-Neg-Pst.  
'John didn't know that Mary came yesterday.'

Samples from other languages are illustrated below.<sup>4</sup>

(3.16) Cuzco Quechua (Lefebvre and Muysken 1988)<sup>5</sup>

- a. [Runa-∅ qulqi-ta qu-sqa-n] warmi-man chay-ta ni-pa-ni.  
man-Nom money-Acc give-Nml-3 woman-to that-Acc say-Pst-1  
'I said that to the woman to whom the man gave the money.'
- b. [Xwancha-q runa-/\*ta riku-sqa-n] wasi-ta rura-n.  
Juan-Gen man-OBJ/Acc see-Nml-3 house-Acc build-3  
'The man that Juan saw builds a house'

<sup>4</sup>In this thesis, I use the term "nominative-genitive conversion" to cover (3.17)–(3.19) just for convenience, although Turkish, for example, does not exhibit free nominative-genitive "conversion" in a true sense, since the genitive-marking is never optional but obligatory contra Japanese-type languages.

<sup>5</sup>Other dialects of Quechua such as Imbabura Quechua and Huallaga Quechua do not allow NGC.

## (3.17) Turkish:

- a. Dün Mary-nin/-\* bas-i-na koy-dig-u toko  
 yesterday Mary-3.Gen/-3.Nom head-3.sg.Poss put-Nml-3Sg.Poss hairclip  
 ‘The hairclip which Mary put on her head yesterday’ (M. Kelepir p.c.)
- b. Üzerin-de kuş-un otur-duğ-u ağaç  
 on-LOC bird-Gen sit-REL tree  
 ‘The tree on which the bird sits’ (Aygen 2003, 71)

## (3.18) Chamorro:

- a. In-kännu’i nëngkanu’ [ni f-in-ahan-ña si Mari gi tenda.  
 Elp-eat the.food C IN-buy-Nml-her-Poss unm Maria LOC store  
 ‘We ate the food that Maria bought at the store.’ (Chung 1982)
- b. Hafa<sub>i</sub> fin’gasése-nña si Henry t<sub>i</sub> pära hagu?  
 What WH[Obj].wash-Prog.Agr SI Henry for you  
 ‘What is Henry washing for you?’ (Chung 1998, 236)

(3.19) Ewe: (Collins 1993)<sup>6</sup>

- a. ga-xe-me \*é/wò va  
 time-which-in 3Sg.(Nom)/3Sg.(Op) came  
 ‘When he came...’
- b. me wò fo?  
 who 3Sg.(Op) hit  
 ‘Who did he hit?’

In contrast, NGC is strictly prohibited in matrix clauses in Japanese, Turkish, and Quzco Quechua ((3.20) and in structures headed by an overt complementizer *-to* and *-ka*. ((3.21)–(3.22)), whereas it is allowed in matrix clauses in Chamorro (and Ewe).<sup>7</sup>

## (3.20) Japanese:

- a. John-ga ki-ta.  
 John-Nom come-Pst.End  
 ‘John came here.’
- b. \*John-no ki-ta.  
 John-Gen come-Pst.End  
 ‘John came here.’

<sup>6</sup>The pronominal form *wò* is not a genitive pronoun. Collins (1993) considers it to be a form of 3rd person pronoun that appears when Operator movement is involved. See Section 3.6.2 for arguments that the form is related to genitive Case, based on Collins (1993).

<sup>7</sup>It should be noted that accusative-genitive conversion is not attested in Turkish and Cuzco Quechua or various other languages (cf. Section 3.6).



(3.21) Japanese:

- a. John-wa [<sub>CP</sub> kinoo Mary-ga ki-ta to] shinjitei-ta.  
John-Top yesterday Mary-Nom come-Pst C believe-Pst  
'John believed that Mary came yesterday.'
- b. \* John-wa [<sub>CP</sub> kinoo Mary-no ki-ta to] shinjitei-ta.  
John-Top yesterday Mary-Gen come-Pst C believe-Pst  
'John believed that Mary came yesterday.'

(3.22) Japanese:

- a. John-wa [<sub>CP</sub> kinoo dare-ga ki-ta ka] tazune-ta.  
John-Top yesterday who-Nom come-Pst C ask-Pst  
'John asked who came yesterday.'
- b. \* John-wa [<sub>CP</sub> kinoo dare-no ki-ta ka] tazune-ta.  
John-Top yesterday who-Gen come-Pst C ask-Pst  
'John asked who came yesterday.'

A second property of NGC is that the accusative object never alternates with the genitive object as is shown in (3.23).<sup>8</sup>

(3.23) Japanese:

- a. sono hon-wo kat-ta hito  
the book-Acc buy-Pst.Adn person  
'the person who bought the book'
- b. \* sono hon-no kat-ta hito  
the book-Gen buy-Pst.Adn person  
'the person who bought the book'

The third property is the presence of a Transitivity Restriction (Harada 1971, 1976, Shibatani 1978, Miyagawa (1993), Watanabe 1994, 1996a,b among others). In Japanese (3.24), Cuzco Quechua (3.3.2), and Chamorro (3.26), for example, accusative Case-marked objects are prohibited when the subject is in the genitive Case, whereas Turkish (3.27) and Ewe do not show any transitivity restriction in NGC.

(3.24) Japanese:

- a. Kinoo John-ga hon-wo kat-ta mise  
yesterday John-Nom book-Acc buy-Pst.Adn shop  
'the shop where John bought books yesterday'

<sup>8</sup>Another important property of NGC in Japanese is that the genitive subject and the nominative subject show perfect diagnostics of subjecthood such as reflexive binding, subject honorific agreement, and subject control. See Ura (1993) for some relevant discussions. See Section 3.3. for more discussions.

- b. \* Kinoo John-**no** hon-**wo** kat-ta mise  
yesterday John-Gen book-Acc buy-Pst-Adn shop  
'the shop where John bought books yesterday'
- c. \* Kinoo hon-**wo**<sub>i</sub> John-**no** t<sub>i</sub> kat-ta mise  
yesterday book-Acc John-Gen buy-Pst-Adn shop  
'the shop where John bought books yesterday'

(3.25) Cuzco Quechua: (Lefebvre and Muysken 1988, 118)<sup>9</sup>

- a. Runa-∅ qulqi-ta qu-sqa-n warmi-man chay-ta ni-pa-ni  
man-Nom money-Acc give-Nml-3 woman-to that-Acc say-Pst-1  
'I said that to the woman to whom the man gave the money.'
- b. Xwancha-q runa-∅/-\*ta riku-sqa-n wasi-ta rura-n.  
Juan-Gen man-OBJ/-Acc see-Nml-3 house-Acc bulid-3  
'the man that Juan saw builds a house'

## (3.26) Chamorro: (Chung 1982, 64; see also Watanabe 1996b)

Na'i yu' ni häpbun ni pära fa'gase-**mmu** ni/\*∅ kareta.  
give me obl soap C FUT wash-Nml-2Sg.-Poss OBL/ABS car

'Give me the soap which you will wash the car with.'

## (3.27) Turkish (M. Kelepir p.c.)

Düm John-**un** mektub-u yolla-dig-i adam  
yesterday John-3.Gen letter-Acc send-Nml-3Sg.Poss man

'the man who John sent a letter yesterday'

To conclude, the basic properties of NGC and its parametric variations are summarized as follows.<sup>10,11,12</sup>

## (3.28) Summary of the Cross-Linguistic Patterns of NGC

	Root Clause	AGC	optionality	TR
Japanese	No	No	Yes	Yes
Cuzco Quechua	No	No	Yes	Yes
Chamorro	Yes	No	Yes	Yes
Turkish	No	No	No	No
Ewe	Yes	No	Yes/No	No

<sup>9</sup>Lefebvre and Muysken (1988) assume that the lack of Case-marking on the object in the example is objective Case, not nominative Case. See Lefebvre and Muysken (1988) for discussion. See also Hastings (2004) for relevant discussion.

<sup>10</sup>Classical Japanese allows NGC in root clauses.

<sup>11</sup>According to Boeschoten (1998), NGC in Uzbek is optional as in Japanese.

<sup>12</sup>In Ewe, NGC is obligatory in matrix clauses whereas it is optional in some embedded clauses (see Collins 1993). See Section 3.6 for some discussions.

### 3.3.3 Empirical Problems

The descriptive generalization that NGC is only allowed in relative clauses and nominal complements (Bedel 1972, Miyagawa 1993, Ochi 2001) has been considered to be indubitably true and has never been subjected to critical scrutiny. In this respect, Watanabe's hypothesis (Watanabe 1994, 1996a,b) that NGC is allowed in a *Wh*-agreement domain is highly important and insightful. He points out that the Comparative Deletion Construction, which is supposed to involve an operator movement, allows NGC despite the lack of an external DP structure.<sup>13</sup>

(3.29) Japanese (Watanabe 1996b, 396)

- a. John-wa [Mary-**ga** yon-da yori] takusan-no hon-wo yon-da.  
 John-Top Mary-Nom read-Pst.Adn than many-Gen books-Acc read-Pst  
 'John read more books than Mary did.'
- b. John-wa [Mary-**no** yon-da yori] takusan-no hon-wo yon-da.  
 John-Top Mary-Gen read-Pst.Adn than many-Gen books-Acc read-Pst  
 'John read more books than Mary did.'

Watanabe argues that the grammaticality of (3.29b) is totally unexpected under a theory that assumes that the Genitive Case assigned by D in NGC. It should be noted, however, that Watanabe's assumption that comparatives do not involve an empty NP head is not uncontroversial.

However, there are in fact a number of significant empirical counter-examples that are problematic for both the ECM/raising analysis and the *Wh*-agreement analysis. Consider the Japanese data listed below.

(3.30) Japanese:

- a. John-wa [ame-**ga** ya-mu made] office-ni i-ta.  
 John-Top rain-Nom stop-Prs.Adn until office-at be-Pst.  
 'John was at his office until the rain stopped.'
- b. John-wa [ame-**no** ya-mu made] office-ni i-ta.  
 John-Top rain-Gen stop-Prs.Adn until office-at be-Pst.  
 'John was at his office until the rain stopped.'

(3.31) Japanese:

- a. [Boku-**ga** omou-ni] John-wa Mary-ga sukini-tigaina-i.  
 I-Nom think-Prs.Adn -Dat John-Top Mary-Nom like-must-Prs  
 'I think that John likes Mary.'
- b. [Boku-**no** omou-ni] John-wa Mary-ga sukini-tigaina-i.  
 I-Gen think-Prs.Adn -Dat John-Top Mary-Nom like-must-Prs  
 'I think that John likes Mary.'

<sup>13</sup>Watanabe (1994, 1996a,b) is the insightful precursor who first noted the interesting parallelism between Japanese and Chamorro NGC. See Watanabe (1996a) for detailed analysis of Chamorro NGC.

## (3.32) Japanese:

- a. [Sengetsu ikkai denwa-**ga** at-ta kiri] John-kara nanimo renraku-ga  
last-month once call-Nom be-Pst.Adn since John-from anything call-Nom  
na-i.

be.Neg-Pst

‘There has been no call from John since he called me up once last month.’

- b. [Sengetsu ikkai denwa-**no** at-ta kiri] John-kara nanimo renraku-ga  
last-month once call-Gen be-Pst.Adn since John-from anything call-Nom  
na-i.

be.Neg-Prs

‘There has been no call from John since he called me up once last month.’

## (3.33) Japanese:

- a. Kono-atari-wa [hi-**ga** kurer-u ni-tsure(te)] hiekondeku-ru.  
here-around-Top sun-Nom go.down-Prs.Adn as colder.get-Prs

‘It gets chillier as the sun goes down around here.’

- b. Kono-atari-wa [hi-**no** kurer-u ni-tsure(te)] hiekondeku-ru.  
here-around-Top sun-Gen go.down-Prs.Adn as colder.get-Prs

‘It gets chillier as the sun goes down around here.’

## (3.34) Japanese:

- a. John-wa [toki-**ga** tats-u to tomoni] Mary-no koto-wo wasurete-it-ta.  
John-Top time-Nom pass-Prs.Adn P with Mary-Gen FN-Acc forget-go-Pst

‘Mary slipped out of John’s memory as times went by.’

- b. John-wa [toki-**no** tats-u to tomoni] Mary-no koto-wo wasurete-it-ta.  
John-Top time-Gen pass-Prs.Adn P with Mary-Gen FN-Acc forget-go-Pst

‘Mary slipped out of John’s memory as times went by.’

## (3.35) Japanese:

- a. [John-**ga** ku-ru to ko-na-i to] de-wa oochigai da.  
John-Nom come-Prs.Adn P come-Neg-Prs.Adn P -Top great.difference be-Prs

‘It makes a great difference whether John comes or not.’

- b. [John-**no** ku-ru to ko-na-i to] de-wa oochigai da.  
John-Gen come-Prs.Adn P come-Neg-Prs.Adn P -Top great.difference be-Prs

‘It makes a great difference whether John comes or not.’

Significantly, NGC is allowed in (3.30)–(3.35) despite the fact that neither D nor *Wh*-agreement can be assumed to be present in these structures. Note that *-no* involvement of *Wh*-agreement has been attested in the derivations above so far in the literature. It is very important to note here that

the above sentences cannot be analyzed as relative clauses with null heads. In fact, it is impossible to insert an overt head noun as shown below.<sup>14</sup>

(3.36) Japanese:

- (3.37) [Sengetsu ikkai denwa-ga at-ta (\*toki/no) kiri] John-kara nanimo renraku-ga  
last-month once call-Nom be-Pst.Adn (time/Nml) since John-from anything call-Nom  
na-i.  
be.Neg-Pst  
'There has been no call from John since he called me up once last month.'

Furthermore, (3.38) confirms the lack of D in the relevant embedded clauses in (3.30)–(3.35).<sup>15</sup>

(3.38) Japanese:

- a. \*sono-yori / \*sono-made / \*sono-ni / \*sono-kiri / \*sono-to  
it(Gen)-than / it(Gen)-until / it(Gen)-Dat / it(Gen)-since / it(Gen)-with  
b. sore-yori / sore-made / sore-ni / sore-kiri / sore-to  
it-than / it-until / it-Dat / it-since / it-with

None of the italicized elements that head CPs in (3.30)–(3.35) can take Genitive forms of the pronoun *sono* but select the full DP form *sore*, which explicitly excludes the possibility that these P(reposition)-like elements could license the genitive Case.<sup>16</sup>

Other structures that lack a D head but allow nominative-genitive conversion in Japanese are Cleft Construction and Head-internal Relative Clause (HIRC), which are illustrated in (3.39) and (3.40), respectively.<sup>17</sup>

<sup>14</sup>Interestingly, some, but not all, of the above examples allow insertion of the nominalizer *no*. The importance of this fact is discussed in Section 3.5.

<sup>15</sup>The exact category of the elements which head the CP's in (3.30)–(3.35) is of no concern here. We assume tentatively that they are P's for expository purposes.

<sup>16</sup>It is worth mentioning that in these structures, the predicate cannot take a past form. This might indicate that these are some kind of nonfinite/subjunctive constructions.

<sup>17</sup>Kuroda (1974-77) and Ito (1986) argue that NGC is impossible in HIRC. More precisely, Kuroda claims that the cases in which NGC is apparently allowed in HIRC should be treated as a different type of relative clause (so called *No*-relatives in his terms) such as (i).

(i) Japanese:

John-ga [ringo-*no* yoku jukusi-ta no]-wo eran-da  
John-Nom apple-Gen good ripe-Prs.Adn -Nml-Acc select-Pst

'John selected the apple which is good and ripe.'

However, his statement is only partially true. It should be noted that in *No*-relatives the genitive marked phrase must be placed at initial position obligatorily and hence (ii) is ungrammatical.

(ii) Japanese:

\* John-ga [yoku ringo-*no* jukusi-ta no]-wo eran-da.  
John-Nom good apple-Gen ripe-Prs.Adn Nml-Acc select-Pst

## (3.39) Japanese:

- a. [John-**ga** sikar-are-ta no]-wa Mary-ni da.  
John-Nom scold-PASS-Pst.Adn C-Top Mary-Dat CPL.Prs  
'It is by Mary that John was scolded.'
- b. [John-**no** sikar-are-ta no]-wa Mary-ni da  
John-Gen scold-PASS-Pst.Adn C-Top Mary-Dat CPL.Prs  
'It is by Mary that John was scolded.'

## (3.40) Japanese:

- a. John-ga [sara-no ue-ni ringo-**ga** oiteat-ta no]-wo katteni  
John-Nom plate-Gen on-Dat apple-Nom put-Pst.Adn C-Acc without-permission  
tabe-ta.  
eat-Pst  
'John ate an apple, which was on the plate.'
- b. John-ga [sara-no ue-ni ringo-**no** oiteat-ta no]w-o katteni  
John-Nom plate-Gen on-Dat apple-Gen put-Pst.Adn C-Acc without-permission  
tabe-ta.  
eat-Pst  
'John ate an apple, which was on the plate.'

As shown in (3.41), it is well known that HIRC in Japanese does not allow modification by a genitive phrase or an adjective phrase, unlike normal Head-External Relative Clause (HERC) (Kuroda 1999).

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'John selected the apple which is good and ripe.'

Another important difference between HIRC and *No*-relative is that the latter obtains a restrictive interpretation, whereas the former has only non-restrictive interpretation.

Now returning to (3.40), it is important to note that the NGC example allows the genitive subject to be at a non-initial position and that it only have a non-restrictive interpretation, which strongly shows that it is not a *No*-relative, but an instance of genuine NGC in HIRC.

It is very important to note that the grammaticality of NGC in HIRC also reveals a problem of Watanabe's theory of NGC. Watanabe argues that *Wh*-agreement has a strong tendency to manifest itself only if the whole *Wh*-phrase is moved. Thus he claims that NGC is impossible in matrix clause *Wh*-Questions in Japanese, because what is moved in this language is not the whole *Wh*-phrase but a null *Wh*-operator.

- (iii) a. Dare-**ga**/\***no** kimasita ka?  
who-Nom/Gen came-Pst.End Q  
'Who came?'
- b. Dare-**ga**/\***no** ki-ta no?  
who-Nom/Gen came-Pst.End Q  
'Who came?'

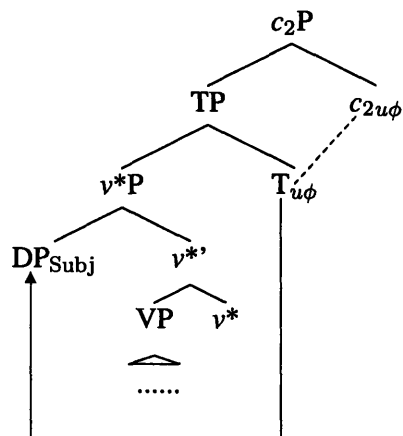
But this account clearly cannot predict the grammaticality of NGC in HIRC, since again what is moved is not the whole internal relative head but a null operator. As we will see soon below, our theory of NGC correctly explain all the cases.

(3.41) Japanese:

- a. John-ga [sara-no ue-ni **takusan-no** ringo-ga oiteat-ta no]-wo  
 John-Nom plate-Gen on-Dat many-Gen apple-Nom put-Pst.Adn C-Acc  
 katteni tabe-ta.  
 without.permission eat-Pst  
 ‘John ate many apples, which was on the plate, without permission.’
- b. \* John-ga **takusan-no** [sara-no ue-ni ringo-ga oiteat-ta no]-wo  
 John-Nom many-Gen plate-Gen on-Dat apple-Nom put-Pst.Adn C-Acc  
 katteni tabe-ta.  
 without.permission eat-Pst  
 ‘John ate many apples, which was on the plate, without permission.’

Again, this indicates that HIRC in Japanese lacks an external D head that can assign the genitive Case, which supports our claim that valuation of genitive Case in NGC has nothing to do with an external D head.

(3.42) NGC in HIRC



It should be noted that Turkish and Cuzco Quechua also provide further cross-linguistic evidence for our claim that NGC is not contingent on the existence of the external D head that checks genitive Case by itself. As shown below, NGC is licit in Turkish and Cuzco Quechua in factive complements as well.

(3.43) Turkish: (Kornfilt 1987, 640)

[Ahmed-**in** ben-i sev-dig-in ]-i bil-iyor-um.  
 [Ahmed-3.Gen I-Acc love-Nml-3Sg.Poss ]-Acc know-Prs.Prog.1Sg.

‘I know that Ahmed loves me.’

(3.44) Cuzco Quechua: (Lefebvre and Muysken 1988, 119)

Kay warmi-**q** qusa-n-∅ maqa-sqa-n-ta yacha-ra-nk-chu  
 this woman-Gen husband-3-OBJ beat-Nml-3-Acc know-Pst-2-Q

‘Did you know that this woman beat her husband?’

In fact, Ewe and Chamorro also demonstrate the same point. These languages allow NGC in matrix clauses that have an  $\bar{A}$ -dependency (see Chung 1982, 1998 and Watanabe 1996a,b for Chamorro and Collins 1993 for Ewe).

(3.45) Ewe: (Collins 1993)

me wò fo?  
who 3Sg.(Op) hit

‘Who did he hit?’

(3.46) Chamorro: (Chung 1998, 236)

Hafa<sub>i</sub> fin’ gasése-nña si Henry t<sub>i</sub> pära hagu?  
What WH[Obj].wash-Prog.Agr SI Henry for you

‘What is Henry washing for you?’

Thus these facts clearly show serious empirical inadequacies of both Miyagawa’s (1993) and Watanabe’s (1994, 1996ab) theories, which incorrectly predict that NGC is impossible in the structures that have been discussed above.

### 3.3.4 The Special Verbal Inflection as SELECT (*c*<sub>2</sub>, T)

A close examination reveals a very interesting generalization that lies behind the distributional property of NGC in Japanese given above. It should be noted that all the structures that allow NGC are headed by verbs with a special verbal inflectional morphology (which has been termed *Rentai-kei* (the Predicate Adnominal form: henceforth the P.-A. form) by traditional Japanese grammarians). This leads us to the following descriptive generalization.<sup>18</sup>

(3.47) The Descriptive Generalization to NGC in Japanese

NGC in Japanese is only allowed in clauses whose predicates take a P.A.-form.

It is not so easy to observe the validity of (3.47) in Modern Japanese due to the well-known phonological merger of the end form into the P.-A. form, which took place around the 13th century (see Kinsui (1995) among others). But fortunately the so-called verbal adjectives and copulas, which still retain the relevant morphophonological distinction, confirm our claim. The end form *da* is morphologically realized as *na* in relative clauses and other nominal complements as illustrated in (3.48).

(3.48) Japanese:

a. John-ga suki-na ongaku-wa blues-da. (cf. *suki-da*)

John-Nom like-Prs.Adn music-Top blue-be.Prs

‘The music that John likes is the Blues.’

<sup>18</sup>See Watanabe (1996b, 404, f.n.,22) for some speculations in this vein.



- b. John-ga onkoo-**na** koto/no-wa yuumei-da. (cf. *onkoo-da*)  
 John-Nom gentle-Prs-Adn FN/C-Top well.known-be.Prs  
 ‘It is well-known that John is gentle.’

This diagnostic test reveals that the verbal inflection in (3.30)-(3.35) is the P.-A. form.<sup>19</sup> For example, the following examples show that in Comparative Deletion and adjunct “until” clauses, the predicate takes the P.-A. form.

(3.49) Japanese:

- a. John-no koto-ga simpai-**na** yori-mo, Mary-no koto-ga  
 John-Gen thing-Nom worried-Prs.Adn than Mary-Gen thing-Nom  
 simpai-**da**.  
 be-worried-Prs.End  
 ‘I am worried about Mary rather than about John.’
- b. John-wa ijou-**na** made-ni sinkeisitsu-da.  
 John-Top extraordinary-Prs.Adn extent-Dat nervous-Prs.End  
 ‘John was extraordinarily nervous.’

This generalization is correctly borne out by the ungrammaticality of NGC in the clauses with other verbal inflectional forms. Consider the examples below. As (3.50) shows explicitly, the declarative complementizer *to* in (3.50a) and the interrogative complementizer *ka* in (3.50b) in Japanese select the end form as their complements and hence NGC is ungrammatical as we have already seen in (3.21)-(3.22) above.<sup>20</sup>

(3.50) Japanese:

- a. John-wa class-de Mary-**ga/\*no** ichiban kirei-**da** **to** omot-ta.  
 John-Top class-LOC Mary-Nom/\*Gen most beautiful-Prs.End C think-Pst  
 ‘John thought that Mary was the most beautiful in the class.’
- b. John-wa class-de dare-**ga/\*no** ichiban kirei-**da** **ka** tazune-ta.  
 John-wa class-LOC who-Nom/\*Gen most beautiful-Prs.End C ask-Pst  
 ‘John doesn’t know who is the most beautiful in the class.’

Note that our theory, contrary to Watanabe’s theory, correctly predicts that NGC is disallowed in *Wh*-questions (matrix or embedded) in Modern Japanese (cf. Watanabe 1996b, 404, f.n.,22). This is because in Modern Japanese the predicate takes the end form in *Wh*-questions, although diachronically it used to take the P.-A. form. In fact, in Classical Japanese, NGC was observed in *Wh*-questions.<sup>21</sup>

<sup>19</sup>Unfortunately, it is not possible to show in Modern Japanese that each of (3.30)-(3.35) takes the P.-A. form. In Classical Japanese, however, all of these cases take the P.-A. form. But see Section 3.5 where a correspondence between the P.-A. form and the nominalizer *no* is discussed.

<sup>20</sup>One systematic counterexample comes from highly grammaticalized constructions like *no-da/no-ni/no-de*, where NGC is disallowed in spite of the presence of the special verbal inflection. I will return to this in Section 3.8.

<sup>21</sup>Even in Modern Japanese, an indirect *Wh*-question (i), for example, is grammatical even though it sounds “old”.

In support of (3.47) it is interesting to note that the rest of the verbal inflection forms do not allow NGC either, as is shown in (3.51).

(3.51) Japanese:

- a. [Dare-**ga**/\***no** ki-te-mo] kamaimas-en.  
[whoever-Nom/Gen come-Cond-Q] care-Neg.Prs  
'I don't care whoever will come.'
- b. [John-**ga**/\***no** ku-reba] minna yorokobu yo.  
[John-Nom/Gen come-Cond everyone be.pleased-Prs Part.  
'Everyone will be delighted if John comes.'
- c. Omae-**ga**/\***no** ko-i!  
you-Nom/Gen come-Imp  
'(You) Come here!'

The generalization (3.47) in fact holds of other languages with NGC, as it is now clear (see Cuzco Quechua, Turkish and Chamorro), in the sense that in these languages, too, the inflectional morphology changes to nominalizing forms. Hence we restate (3.47) here as a cross-linguistic generalization.

(3.52) The Cross-linguistic Generalization to NGC

NGC is only allowed in clauses whose predicates are nominalized.

Now the correlation between genitive Case and the inflectional change of the predicate can be considered to be a reflection of a single syntactic process: the  $c_2$ -T relation under the PTPD. To explain the generalization (3.52), we propose the following hypothesis.

(3.53) SELECT ( $c_2$ , T)

The nominalizing inflection (the P.-A. form) is a reflex of  $c_2$ -T relation.

If this is proven to be true, the mechanism of NGC can be represented as (3.54), capturing our new descriptive generalization (3.53).

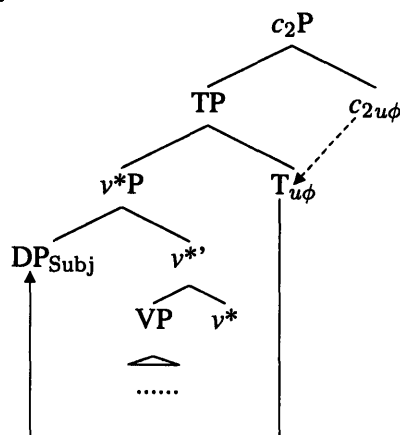
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(i) Japanese:

Shihonsyugi-no nan-tar-u ka-wo sir-e. (cf. *ta-ri*)  
capitalism-Gen what-CPL-Adn Q-Acc know-Imp

'(You should) Know what the capitalism is.'

Notice that the copular *tari* takes the P.-A. form *ta-ru* before the Q-particle.

(3.54) The  $c_2$ -T Theory of NGC

In (3.54)  $c_2$  SELECTS T. The  $c_2$ -T probe system probes and Agrees with the subject DP – Agree ( $c_2$ -T,  $DP_{Subj}$ ). At Transfer, a categorial feature [+N] is inserted to  $c_2$  and nominalization takes place, spelling out the special verbal inflection (i.e. the P.-A. form). Thus genitive Case valuation becomes available in (3.54). On the other hand, if a [-N] categorial feature is inserted into  $c_2$  – either because it is the root clause or  $c_3$  requires a [-N]  $c_2$  – the predicate takes an ending inflection.<sup>22</sup>

### 3.4 $c_2$ -T: Locality and Agreement

In this section, I present further empirical arguments against the ECM/Raising analysis: (i) the absence of (Defective) Intervention Effects (Chomsky (2000, 2001, 2004a): see Chapter 2), (ii) grammatical functions and (iii) possessive/genitive agreement in NGC.

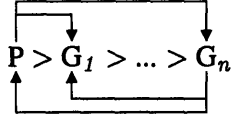
#### 3.4.1 Multiple Agree and Locality

The  $c_2$ -T Theory of NGC crucially differs from the ECM/Raising theory of NGC in that genitive and nominative Case is assigned by the same single probe:  $c_2$ -T. Now as I have extensively argued in Chapter 2, the most important consequence of our theory of MULTIPLE AGREE is the empirical generalization that intervention effects obtain only when a probe tries to establish a relation with a distant goal, passing a closer goal. In other words, there is no intervention when a single probe enters into Multiple Agree relations with multiple goals derivationally simultaneously.

<sup>22</sup>The counter-cyclicity problem inherent to Watanabe's theory now disappears with the refinement of the entire framework of Case and agreement, in particular, under the notion of Derivational Simultaneity and the Phase Theory of Parallel Derivation (PTPD) introduced in Chapter 2.

(3.55) MULTIPLE AGREE ( $P, \vee G$ )

Agree is a derivationally simultaneous operation AGREE ( $P, \vee G$ ).



In this section, I show that the theory of MULTIPLE AGREE reveals a fundamental asymmetry between ECM/Raising constructions and NGC, which constitutes strong evidence against Miyagawa (1993) and Ochi (2001).

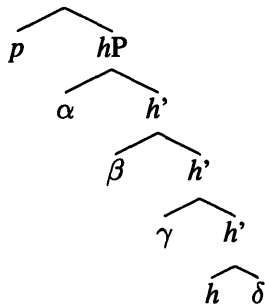
The ECM/Raising construction in Japanese, illustrated in (3.56), exhibits an interesting intervention effect (see Chapter 4 for extensive discussion on the syntax of the Raising-to-Object construction in Japanese).

## (3.56) Japanese:

- a. John-ga Mary-ga totemo kawi-i to omot-ta.  
 John-Nom Mary-Nom very pretty-Prs C think-Pst  
 'John considered Mary to be very pretty.'
- b. John-ga Mary-wo totemo kawi-i to omot-ta.  
 John-Nom Mary-Acc very pretty-Prs C think-Pst  
 'John considered Mary to be very pretty.'

Assuming that there is no theoretical basis for *m*-command and also that there is no Equidistance Principle (contra Chomsky 1993, 1995, Collins 1997, Ura 1996, 2000), multiple specifiers of a head *h* should no longer be considered to be equidistant from a higher probe *p*. Put differently, locality reduces to strict *c*-command (Chomsky (2000, 2001)).

## (3.57) Closeness



With this in mind, let us consider Multiple ECM constructions in Japanese and Korean. It is important to notice that accusative Case cannot be assigned to a lower goal by-passing a closer nominative goal.

## (3.58) Japanese:

- a. Mary-wa [John-ga se-ga taka-i to] sinjite-iru.  
Mary-Top John-Nom height-Nom high-Prs C believe-Prs  
'Mary believed that John is tall.'
- b. Mary-wa [John-wo se-ga taka-i to] sinjite-iru.  
Mary-Top John-Acc height-Nom high-Prs C believe-Prs  
'Mary believed that John is tall.'
- c. \* Mary-wa [John-ga se-wo taka-i to] sinjite-iru.  
Mary-Top John-Nom height-Acc high-Prs C believe-Prs  
'Mary believed that John is tall.'

## (3.59) Korean: (Schütze 1997)

- a. Na-num Swunhi-ka sonkalak-i kilta-ko sayngkakhanta.  
I-Top Swunhi-Nom finger-Nom long-C think  
'I think that Swunhi's finger is long.'
- b. Na-num Swunhi-lul sonkalak-i kilta-ko sayngkakhanta.  
I-Top Swunhi-Acc finger-Nom long-C think  
'I think that Swunhi's finger is long.'
- c. \* Na-num Swunhi-ka sonkalak-ul kilta-ko sayngkakhanta.  
I-Top Swunhi-Nom finger-Acc long-C think  
'I think that Swunhi's finger is long.'

The same holds of covert ECM/Raising in Nominative Object Construction (NOC) in Japanese (see also Baek 1997 for Korean).

## (3.60) Japanese:

John-ga nihongo-ga/\*wo deki-ru.  
John-Nom Japanese-Nom/\*Acc do-can-Prs

'John can speak Japanese.'

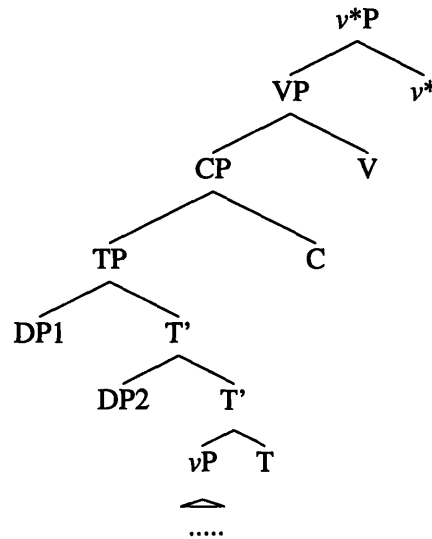
## (3.61) Japanese:

- a. Mary-wa [John-ga nihongo-ga deki-ru/hanas-er-u to] sinjitei-ta.  
Mary-Top John-Nom Japanese-Nom do-can-Prs/speak-can-Prs C believe-Pst  
'Mary believes that John can speak Japanese.'
- b. Mary-wa [John-wo nihongo-ga deki-ru/hanas-er-u to] sinjitei-ta.  
Mary-Top John-Acc Japanese-Nom do-can-Prs/speak-can-Prs C believe-Pst  
'Mary believes that John can speak Japanese.'
- c. Mary-wa [John-ga nihongo-wo \*deki-ru/<sup>o.k.</sup>hanas-er-u to] sinjitei-ta.  
Mary-Top John-Nom Japanese-Acc do-can-Prs/speak-can-Prs C believe-Pst  
'Mary believes that John can speak Japanese.'

As (3.60) indicates, the stative predicate *dekiru* in Japanese cannot take an accusative object. (3.61a) and (3.61b) show that Japanese allows the nominative subject to be marked in accusative via ECM by ECM verbs. However, it should be noted that, as (3.61c) shows, ECM/raising of the nominative object over the nominative subject is impossible.

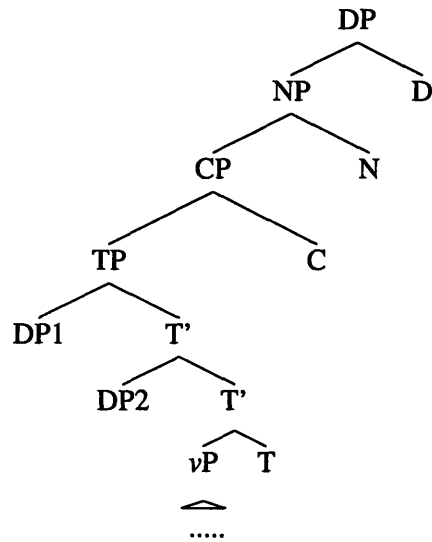
The illicit examples are excluded since Agree between the probe matrix  $\nu^*$  and the goal in the inner specifier in the embedded clause is blocked by the closer goal in the outer specifier. Since the matrix  $\nu^*$  and the embedded T are two distinct probes, Multiple Agree cannot apply and hence intervention effects obtain.

(3.62) Intervention in ECM



Now returning to the case of NGC, if Miyagawa-Ochi's ECM/Raising analysis is correct, it should be predicted that the very same kind of closeness violation prohibits the ECM/Raising of the DP in the inner specifier in NGC, because the syntactic configuration is exactly the same.

## (3.63) Intervention in the ECM/Raising Theory of NGC



However, very interestingly this prediction is not borne out. Miyagawa (1993, 229) originally observed that nominative objects can undergo nominative-genitive conversion, allowing all the four logical possibilities that are illustrated in (3.64) (see also Ochi 2001). These are also observed in nominative-genitive conversion in the possessor-raising construction as it is shown in (3.65).

## (3.64) Japanese:

- a. Totemo yoku John-**ga** nihongo-**ga** dek-iru/hanas-er-u riyuu  
 very well John-Nom Japanese-Nom do-can-Prs.Adn/speak-can-Prs.Adn reason  
 ‘the reason why John can speak Japanese very well’ [Nom-Nom]
- b. Totemo yoku John-**no** nihongo-**ga** deki-ru/hanas-er-u riyuu  
 very well John-Gen Japanese-Nom do-can-Prs.Adn/speak-can-Prs.Adn reason  
 ‘the reason why John can speak Japanese very well’ [Gen-Nom]
- c. Totemo yoku John-**ga** nihongo-**no** deki-ru/hanas-er-u riyuu  
 very well John-Nom Japanese-Gen do-can-Prs.Adn/speak-can-Prs.Adn reason  
 ‘the reason why John can speak Japanese very well’ [Nom-Gen]
- d. Totemo yoku John-**no** nihongo-**no** deki-ru/hanas-er-u riyuu  
 very well John-Gen Japanese-Gen do-can-Prs.Adn/speak-can-Prs.Adn reason  
 ‘the reason why John can speak Japanese very well’ [Gen-Gen]

## (3.65) Japanese:

- a. John-**ga** se-**ga** taka-i riyuu  
 John-Nom height-Nom high-Prs.Adn reason  
 ‘the reason why John is so tall’ [Nom-Nom]
- b. John-**no** se-**ga** taka-i riyuu  
 John-Gen height-Nom high-Prs.Adn reason

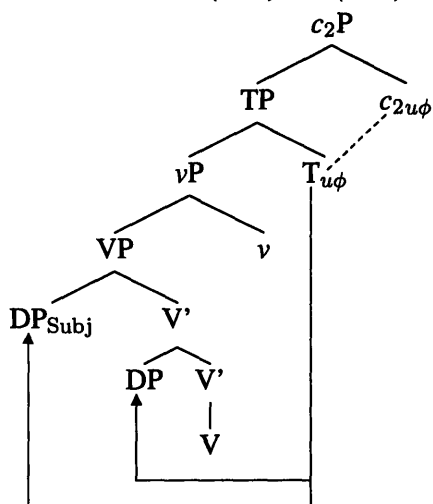
- 'the reason why John is so tall' [Gen-Nom]  
 c. John-**ga** se-**no** taka-i riyuu  
 John-Nom height-Gen high-Prs.Adn reason  
 'the reason why John is so tall' [Nom-Gen]  
 d. John-**no** se-**no** taka-i riyuu  
 John-Gen height-Gen high-Prs.Adn reason  
 'the reason why John is so tall' [Gen-Gen]

As shown in (3.64) and (3.65), the nominative object and the possessee DP can take genitive Case without inducing any intervention effects, even though the subject in the outer specifier of TP has been assigned nominative Case assigned. However, Miyagawa-Ochi's ECM/Raising analysis cannot explain the grammaticality of (3.64c) and (3.65c); their theory wrongly predicts that the Agree relation between the external D head and the goal DP2 in the lower specifier of TP is prohibited due to the intervention of the closer inactive goal DP1, as this strongly indicates that NGC in Japanese never has an ECM/raising structure, *contra* Miyagawa-Ochi's claim.

It should be noted that the grammaticality in (3.64) and (3.65) is exactly what our proposed *c*<sub>2</sub>-T Theory of NGC predicts; the genitive Case on the DP is not a result of Agree (*D*<sub>*uφ*</sub>, DP). The probe is the same *uφ*-features of the C-T system. Both nominative and genitive Case in NGC are a reflex of Agree (*c*<sub>2</sub>-T<sub>*uφ*</sub>, G1, G2, ...)

Let us take a closer look at the derivation of (3.64c) and (3.65c) under the mechanism of MULTIPLE AGREE.

(3.66) The Derivation of (3.64) and (3.65)



The probe *c*<sub>2</sub>-T enters into Agree with the matching features of the goals DP1 and DP2 simultaneously and values the goals' unvalued structural Cases. At Transfer, where actual values of Case are determined, nominative and genitive Case values are freely assigned.

Thus it can assign not only a nominative Case value but also a genitive Case value to the goals, deriving four surface possibilities Nom-Nom, Gen-Nom, Nom-Gen, and Gen-Gen.



It is very important to note here that MULTIPLE AGREE by a single probe feature does not trigger any (defective) intervention effects, since both DP1 and DP2 Agree with the same probe feature derivationally simultaneously; in other words, Agree ( $c_2$ -T, DP1, DP2) is established at the same point of the derivation. Thus we have seen that the data from MULTIPLE AGREE in NGC empirically disconfirm theories that take the source of genitive Case in NGC to be an external head higher than  $c_2$ -T.

### 3.4.2 Grammatical Functions in NGC in Japanese

Watanabe (1996a,b) argues that the genitive subject in NGC remains within  $v^*/vP$ . In this section we will demonstrate that the genitive subject in NGC in Japanese has genuine subject properties in terms of such subjecthood diagnostic tests as subject control and subject honorific agreement proposed in Ura (1996, 2000) and that it has been raised to [Spec, TP] as the nominative subject is. First the genitive subject DP in NGC can serve as a controller

(3.67) Japanese:

- a. Kinoo John-ga [PRO naki-nagara] kaetteki-ta riyuu  
 yesterday John-Nom PRO cry-Inf-while come.home-Pst.Adn reason  
 ‘the reason why John came home crying’
- b. Kinoo John-no [PRO naki-nagara] kaetteki-ta riyuu  
 yesterday John-Gen PRO cry-Inf-while come.home-Pst.Adn reason  
 ‘the reason why John came home crying’

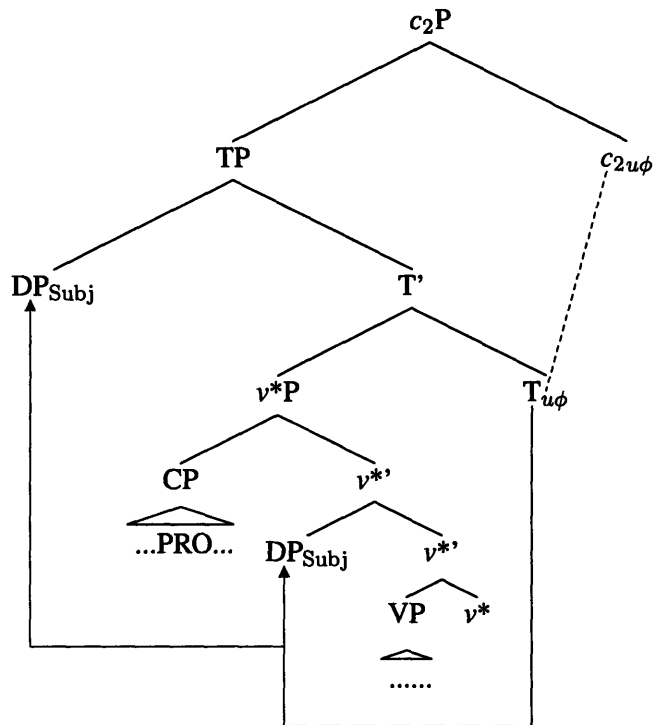
Second, as Ura (1993) notes, the genitive subject can induce subject honorific agreement just as the nominative subject can.

(3.68) Japanese:

- a. Kinoo Yamada-sensei-ga o-kaki-ni-nat-ta hon  
 yesterday Yamada-teacher-Nom H-write-Dat-H-Pst.Adn book  
 ‘the book which Teacher Yamada wrote yesterday’
- b. Kinoo Yamada-sensei-no o-kaki-ni-nat-ta hon  
 yesterday Yamada-teacher-Gen Dat-H-Pst.Adn book  
 ‘the book which Teacher Yamada bought yesterday’

Assuming that the adjunct clause is merged at the edge of  $v^*P$  and the external argument is merged under it, it is impossible for the subject to c-command into the adjunct clause unless it is raised to [Spec, TP].

## (3.69) Control and NGC



Adopting Ura's claim (Ura 1996, 2000) that subject control and subject honorific agreement are firm indications of  $\phi$ -feature checking on T, (3.67) and (3.68) are important in two ways. First, in NGC, the genitive subject DP does raise out of the  $v^*P$  domain. Second, Agree occurs between probe  $\phi$ -features of ( $c_2$ -)T and the goal (Ura (1993)), leading to subject honorific agreement. Note that this is exactly what our theory claims; under our mechanism of  $c_2$ -T relation, the  $u\phi$ -features of the C-T system enter into an Agree relation with the  $\phi$ -features of a goal DP, realizing the surface nominative-genitive conversion.

### 3.4.3 Case and Agreement in Turkish and Cuzco Quechua

Further evidence comes from Turkish and Cuzco Quechua, supporting our theory of Agree ( $c_2$ -T, G),

In Turkish, the genitive possessor argument obligatorily agrees with the possessee DP as in (3.70) (George and Kornfilt 1981).

(3.70) Turkish:

Mary-**nin** bas-i  
 Mary-3.Gen head-3.sg.Poss  
 'Mary's head'

In (3.70) the possessee DP *bas* takes the 3rd person singular possessive suffix **-i**, agreeing with the genitive possessor *Mary-nin*.

Interestingly, this nominal agreement appears in NGC as well (George and Kornfilt (1981), Kornfilt 1987, Kornfilt 2000, Aygen 2003). Of great importance here is the fact that the possessive agreement appears on the embedded predicate, not on the external head noun DP. (3.71) and (3.72) show that the possessive agreement necessarily appears on the verbal complex irrespective of the existence of D head.

(3.71) Turkish: (M. Kelepir p.c.)

- a. Dün Mary-nin bas-i-na koy-dig-u toko  
 yesterday Mary-3.Gen head-3Sg.Poss put-Nml-3Sg.Poss hairclip  
 ‘the hairclip which Mary put her on her head yesterday’
- b. Dün John-un mektub-u yolla-dig-i adam  
 yesterday John-3.Gen letter-Acc send-Nml-3Sg.Poss man  
 ‘the man who John sent a letter yesterday’

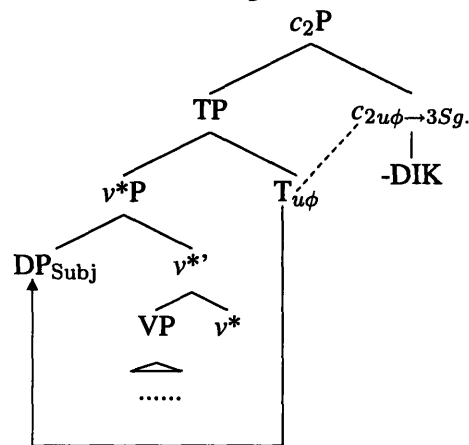
(3.72) Turkish (Kornfilt 1987, 640)

[Ahmed-in ben-i sev+dig-in]-i bil-iyor-um.  
 [Ahmed-3.Gen I-Acc love-Nml-3Sg.Poss]-Acc know-Prs.Prog.-1Sg

‘I know that Ahmed loves me.’

This suggests that the genitive subject is in an Agree relation with the  $c_2$ -T probe, not with the external D head of the relative clause. In other words, under the mechanisms of Case and agreement proposed in Chomsky (Chomsky (2000, 2001, 2004a)), the  $\phi$ -features of the probe  $c_2$ -T enter into an Agree relation with the  $\phi$ -features of the goal, valuing the unvalued Case of the goal as genitive, and at the same time get their own  $u\phi$ -features valued by the goal, realizing possessive agreement.

(3.73) Turkish Possessive Agreement under  $c_2$ -T



Thus the agreement facts in Turkish NGC not only argue against the ECM/raising analysis but also give strong evidence for our theory of Agree ( $c_2$ -T, DP)<sup>23</sup>

<sup>23</sup>Hale and Ning (1996) and Hale (2002) show that the opposite is attested in Dagur; in that language the genitive

Cuzco Quechua gives another revealing example in this point. This language also shows subject person agreement with the verb (Lefebvre and Muysken 1988). Interestingly, in nominalized clauses the subject person agreement is nominal, the same as the one that appears in nominals.

(3.74) Cuzco Quechua: (Lefebvre and Muysken 1988)

- a. wawa-y  
child-1  
'my child'
- b. runa-q qulqui- $\emptyset$  qu-sqa-n warmi-man  
man-Gen money-Acc give-Nml-3 woman-to  
'the woman to whom the man gave the money'

There are two points to be noted; first, the person agreement morphology appears on the verb with the nominalizing suffix. Second, and more importantly, the genitive subject in (3.74a) never shows person agreement with the relative head noun of the relative clause *warmi*, in contrast with (3.74b). Both of these facts prove our claim that the  $\phi$ -features of the genitive subject Agree with the  $\phi$ -features of *c*<sub>2</sub>-T, not with the external D head. Chamorro also exhibits the same pattern. Note that agreement does not appear on the head noun. Rather it appears on the predicate of the embedded clause (3.75a). NGC is possible even if there is no external head (e.g. *Wh*-Question) as in (3.75b).

(3.75) Chamorro:

- a. In-kännu'i nëngkanu' [ni f-in-ahan-ña si Mari gi tenda.  
Elp-eat the.food C IN-buy-Nml-her-Poss unm Maria LOC store  
'We ate the food that Maria bought at the store.' (Chung 1982)
- b. Hafa<sub>i</sub> fin' gasése-nña si Henry t<sub>i</sub> pära hagu?  
What WH[Obj].wash-Prog.Agr SI Henry for you  
'What is Henry washing for you?' (Chung 1998, 236)

### 3.5 The Syntax of C

So far I have proposed, building on the insight of Kinsui (1995), that the inflectional change of the predicate (the P.-A. form) in Japanese is syntactically caused by SELECT (*c*<sub>2</sub>, T) and subsequent [+N] feature insertion. (3.76) summarizes this mechanism.

(3.76) The P.-A. form is a morphosyntactic reflection of *c*<sub>2</sub>-T relation.

In this section we will present three arguments that support this hypothesis. Then it is shown that the proposed theory correctly explains the existence of complementizer blocking effects in NGC in Japanese and Turkish and long-distance Agree in NGC.

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subject agrees with the head DP in the relative clause, whereas the possessive agreement appears on the verb in the headless structure. Ken Hale (p.c.) informed me, however, that as far as the data that he has at hand is concerned, no element can precede the genitive subject in Dagur. If this is true, then what looks like NGC should be more like Miyagawa-Ochi's structure and may even be the "pseudo-NGC" discussed in Section 3.8.

### 3.5.1 C and *Wh*-Agreement: *Kakari-Musubi* Construction

Kinsui (1995) suggests that the so-called adnominal form (the P.-A. form) in Japanese should be analyzed as a form that merges a null C. One argument that Kinsui (1995) presents comes from *Kakari-Musubi Construction* in Classical Japanese, in which a *Wh*-phrase “concord” with special verbal inflections (see Kaplan and Whitman 1995, Watanabe 2002 for Japanese and see Kishimoto 1991, To appear for Sinhala). Descriptively put, the *Kakari-Musubi* is a syntactic construction in which DPs with Q-particles (*ya/ka*) and F(ocus) particles (*zo/namu*) require the special verbal inflection (i.e. the P.-A. form).<sup>24</sup>

As the following examples illustrate, the *Wh*-particle *ka* requires the verb to take the P.-A. form, which is used in relative clauses.

#### (3.77) Classical Japanese

Miyuki huru koshi-no ohoyama yuki-sugi-te izure-no hi-ni-ka wa-ga  
 snow(-Nom) fall-Prs.Adn Koshi-no Ooyama go-pass-Inf when-Gen day-Dat-Q I-Gen  
 sato-wo mi-mu.  
 home-Acc see-will-Adn

‘Crossing the snowy Mt. Ooyama, when can I see my native village?’ (*Manyoosyuu* 3153)

#### (3.78) Classical Japanese

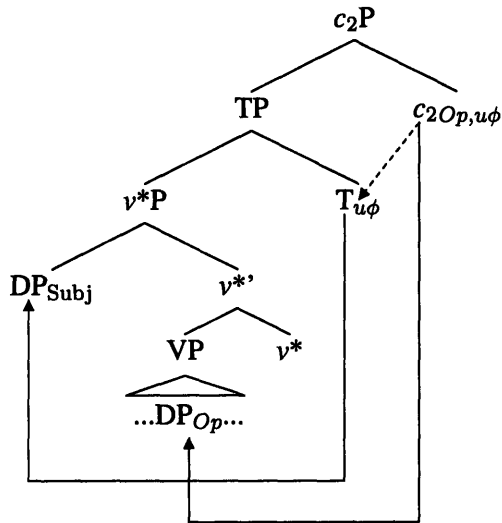
Tsuto-ni yuku kari-no naku ne-wa wagagotoku  
 morning-Dat go-Prs.Adn geese-Gen cry-Prs.Adn voice-Top I-Gen-like  
 monoomohe-ka-mo koe-no kanashi-ki  
 thing-think-Q-F voice-Gen sad-Prs.Adn

‘The wild geese in the morning sky are sadly crying. Do they pine for their native land as I yearn for mine?’ (*Manyoosyuu* 2137)

Kinsui (1995) argues that from a minimalist viewpoint this agreement phenomenon can be seen as covert feature-checking relation between the *Wh*-/F-features of the particles and the verb. He proposes that the verb with the special inflection moves to C and enters into a checking relation with the relevant features.

In our terms the *Kakari-Musubi* phenomenon amounts to a manifestation of SELECT ( $c_2$ , T) (the special verbal inflection formation) and of Agree between the Op-feature of the probe  $c_2$  and the Op-feature of the goal particles. This is schematically represented in (3.79)

<sup>24</sup>See Yamaguchi (1990) and Nomura (1995) for the detailed studies on the *Kakari-Musubi Construction* in Classical Japanese.

(3.79) The Mechanism of *Kakari-Musubi*

Our analysis of *Kakari-Musubi* Construction is also supported by Cheng's (1991) Clausal Typing Hypothesis (Cheng 1991). Cheng (1991), from a typological viewpoint of *Wh*-Questions, presents the cross-linguistic generalization in (3.80) (cf. also Greenberg 1966, Bresnan 1972, and Kayne 1994).

## (3.80) Clausal Typing Hypothesis (Cheng 1991, 30)

Every clause needs to be typed. In the case of typing a *Wh*-question, either a *Wh*-particle in  $C^0$  is used or else fronting of a *Wh*-word to the Spec of  $C^0$  is used, thereby typing a clause through  $C^0$  by spec-head agreement.

The hypothesis states that there are only two options to adopt in human language: overt *Wh*-movement or an overt *Wh*-complementizer. In a nutshell, in a question sentence either the spec of CP or the  $C^0$  position must be syntactically filled. As far as this generalization is to be maintained, it supports our claim that the verb in the P.-A. form syntactically involves  $C^0$ . Under our theory the element that types the *Wh*-question sentence in Classical Japanese is the  $c_2$ -T relation and overt *Wh*-movement.

Another argument that Kinsui (1995) gives is the fact that in Classical Japanese the verb with the special inflection is able to complement a sentence without any overt complementizer.

## (3.81) Classical Japanese

[ $CP$  Tomo-**no** empoo yori ki-tar-u]-wo yorokobite  
 friend-Gen away from come-Pst.Adn-Acc delighted-at

'(being) delighted at (the fact) that a friend came all the long way...'

In fact there was no complementizer in Classical Japanese, and instead the P.-A. inflection appears in the structure which requires an overt complementizer in Modern Japanese. This lends

support for our claim that the verb in the special inflection implicates C, thus forming the  $c_2$ -T system.<sup>25</sup>

### 3.5.2 The Pronoun Attraction Principle and Relativization Universals

The second argument is based on the cross-linguistic investigation of relative clauses. Bach (1971) observes that there is an interesting correlation between *Wh*-question formation and relativization (Bach 1971, 165; also Bresnan 1972). For example, English uses the same overt *Wh*-movement strategy in relativization, clefting and *Wh*-question (see Chomsky 1977).

(3.82) English:

- a. John is the man who loves Mary [HERC]
- b. Show me what(ever) you have [Free RC/Headless RC]
- c. What I want is hope [Pseudo-Cleft]
- d. Who did you see in the department? [*Wh*-Question]

Seen in this light, the data from Classical Japanese presents a very interesting paradigm. As we have already seen, Classical Japanese employs the verbal inflection strategy in both *Wh*-question and relativization, which is schematically represented in (3.83).

(3.83) Classical Japanese

- a. [ [ V-Adn ] N ] [HERC]
- b. [ ... N ... V-Adn ] [HIRC]
- c. [ [ ... V-Adn ] X copula ] [Cleft]
- d. [ *Wh* ... V-Adn ] [*Wh*-Question]

Bach's insight leads us to the following generalization.

(3.84) Relative clauses are universally CPs; either an overt  $\bar{A}$ -movement, overt complementizer or SELECT ( $c_2$ , T) is required.

Under (3.84), relativization is uniformly considered to be a C-domain phenomenon in parallel with *Wh*-Question formation. In other words, important here is the fact that no language leaves both C and Spec, CP empty in an  $\bar{A}$ -dependency.

In fact typological studies (Downing 1978 and Keenan 1985) show that most languages of the world are classified into the following categories (cf. also Kayne 1994).<sup>26</sup>

<sup>25</sup>The *Kakari-Musubi* phenomenon is not restricted to Japanese; recall that Chamorro (Chung 1982, 1998) also uses the same special verbal inflection in the *Wh*-question and relativization. See also Tamil (Schiffman 1999).

<sup>26</sup>There are languages that allow doubly-filled COMP in *Wh*-questions. In Bùlì, for example, both *Wh*-fronting and overt C are required as in (i) (see Chapter 7 for Bùlì  $\bar{A}$ -dependency).

(i) Bùlì (Hiraiwa 2003b, Chapter 7)

Ká bwà àlì/àtì Àtìm dà?  
F what C Atim bought

- (3.85) N-Initial Relative Clauses (postnominal RC)
- a. NP [*CP* WH ... ] e.g. English, Russian, ...
  - b. N [*CP* C ... ] e.g. Arabic, Hebrew, Buli, French, ...
  - c. [*CP* NP C ... ] e.g. Bùlì, Dàgàaré, ...
  - d. N [*CP* C-T(-V) ... ] e.g. Bantu (Kihung'an, Dzamba)...
- (3.86) N-Final Relative Clauses (prenominal RC)
- a. [*CP* (V-)T-C ] N e.g. Japanese, Korean, Navajo, ...
  - b. [*CP* [ TP V ] C ] N e.g. Chinese, ...

Of special interest here is the pattern (c) of (3.85). Kaplan and Whitman (1995), building on Givón (1976), presents an important argument for the involvement of C in relativization. Givón (1976) points out that in some Bantu languages, such as Kihung'an and Dzamba, relativization requires structural adjacency between the head noun and the subordination morpheme.

- (3.87) Kihun'an (Givón 1976, 249)
- a. kit ki-a-swiimin Kipes zoon  
chair REL-he-buy.Pst Kipes yesterday  
'the chair that Kipes bought yesterday'
  - b. Kipes ka-swiimin kit zoon  
Kipes buy.Pst chair yesterday  
'Kipes bought the chair yesterday'

Note that the basic word order in this language is SVO. Givón (1976) presents the following generalization.

- (3.88) Pronoun Attraction Principle (Givón 1976, 249)  
Relative pronouns or relative-clause subordinating morphemes tend to appear adjacent to the head noun modified by the clause.

The Pronoun Attraction Principle correctly captures the typological variations in (3.85) and (3.86). Although Givón analyzes relative clauses in Kihun'an as a case of subject-postposing, Kaplan and Whitman (1995) argue that it should be reconsidered as a case of V-movement, under which analysis the possible landing site should be C, since the verb precedes the subject position (see Ura 2000 for a similar view).

We propose that C universally has an EPP property in relativization as well as in *Wh*-Question formation. There are three ways to saturate the requirement on C: overt *Wh*-movement to [Spec, CP], merger of an overt relativizing complementizer into C, or "head movement" into C, deriving the well-known parametric variations in relativization reviewed above.<sup>27</sup> The existence of this displacement property forces an overt "head-attraction" into C in Bantu-type languages, just as it triggers "pronoun-attraction" in the English-type languages. Now if we assume, following Kaplan

---

<sup>27</sup>What did Atim buy?'

<sup>27</sup>The status of head movement (syntactic or phonological) is left open here (cf. Chomsky (2000, 2001, 2004a)).

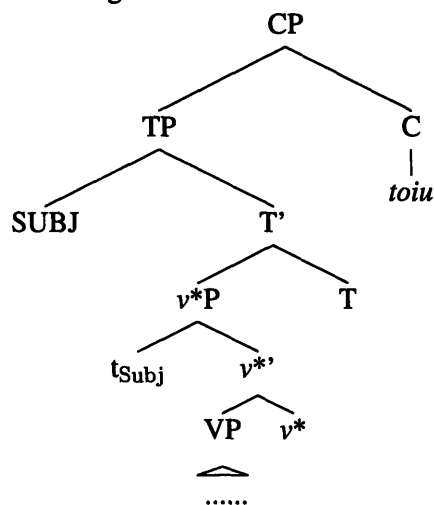




As (3.89) indicates the complementizer *toiu* is optional. But (3.89c) shows that NGC is disallowed when the overt complementizer appears in C. The same correlation is also found in (3.90): as (3.90b) shows, genitive Case-marking becomes illicit when the overt complementizer is present even if the whole clause is a complement to the noun phrase *jouhou* “information”.

Within our theory of NGC, this phenomenon is explained quite straightforwardly. Consider the derivation (3.91) for the illicit sentence (3.89d) (and (3.90b)).

(3.91) Complementizer Blocking Effects



Recall that under the proposed theory, *SELECT* ( $c_2$ , T) and insertion of a [+N] categorial feature are crucial prerequisites for NGC. However, as (3.91) clearly shows, such “head amalgamation” through *Select* ( $c_2$ , T) is syntactically blocked by the presence of the overt C. Being non-affixal, it need not (and hence cannot) form a single lexical item, which bars the syntactic  $c_2$ -T relation and hence leaves the predicate in the End form. As a result the  $\phi$ -features of  $c_2$  cannot assign a genitive Case value to the uCase of the subject DP. The following paradigm pointed out by Watanabe (1996b) falls within the same analysis. NGC is blocked by the presence of the overt complementizer *to* as expected.

(3.92) Japanese: (Watanabe 1996b, 330)

- a. [[Mary-ga [<sub>CP</sub> John-ga  $t_i$  kat-ta to] omottei-ru] hon<sub>i</sub>]  
 Mary-Nom John-Nom buy-Pst.End C think-Prs.Adn book  
 ‘the book which Mary thinks that John bought’
- b. \* [[Mary-ga [<sub>CP</sub> John-no  $t_i$  kat-ta to] omottei-ru] hon<sub>i</sub>]  
 Mary-Nom John-Gen buy-Pst.End C think-Prs.Adn book  
 ‘the book which Mary thinks that John bought’

Our theory predicts a universal correlation between the (un)availability of NGC and the absence/presence of overt C. Turkish adds important insight. In this language, NGC is prohibited in the presence of the overt complementizer *ki*, which has been borrowed from Persian, whereas, as we have already seen, the language allows NGC in the ordinary relative clauses.

(3.93) Turkish: (M. Kelepir p.c.)

Dün Mary-nin bas-i-na koy-dig-u toko  
 yesterday Mary-3.Gen head-3.sg.Poss put-Nml-3Sg.Poss hairclip  
 ‘the hairclip which Mary put her on her head yesterday’

(3.94) Turkish (M. Kelepir p.c.)

o tokoi ki Mary-∅/\*nin bas-na koy-du-∅  
 that hairclip C Mary-Nom/\*Gen head-3.sg.Poss-Dat put-Pst.3Sg.  
 ‘the hairclip that Mary put on her head’

### 3.5.4 Long-distance Agree and the Defective Intervention Constraint Revisited

The example (3.92) observed in the previous section shows that the genitive uCase of the DP *John* cannot be valued by the higher C-T system via “long-distance” Agree. In fact Watanabe (1996b) argues from the facts in (3.92) that NGC is strictly local. However, Ura (1994) shows that such long-distance Case dependency is possible in Japanese and various other languages.

It is worth pointing out that long-distance Agree becomes licit when the higher subject *Mary* in (3.92) is evacuated by some operation –e.g. passivization as in (3.95).<sup>29</sup>

(3.95) Japanese:

- a. [[[<sub>CP</sub> John-no t<sub>i</sub> kat-ta to] omow-are-teiru] hon<sub>i</sub>]  
 John-Gen buy-Pst.End C think-PASS-Prs.Adn book  
 ‘the book which it is thought that John bought’
- b. \*[[Mary-ga [<sub>CP</sub> John-no t<sub>i</sub> kat-ta to] omottei-ru] hon<sub>i</sub>]  
 Mary-Nom John-Gen buy-Pst.End C think-Prs.Adn book  
 ‘the book which Mary thinks that John bought’

If this is the case, our theory makes an interesting prediction about intervention effects discussed in Section 3.4: in long-distance NGC in nominative object constructions, there should be intervention effects, since now the probe for the nominative Case and the probe for the genitive Case are not the same  $\phi$ -features; the former is the  $\phi$ -features on C1 whereas the latter is the  $\phi$ -features on the T within C2. In other words, the structure is now parallel with the true ECM/raising structure (3.62).

<sup>29</sup>The apparent impossibility of long-distance Agree in (3.92b) may be related to the parallel fact that in Japanese it is, for unclear reasons, impossible for an argument to enter a long-distance Case relation with T when the T already has an argument in the same clause. Consider the famous data from Takezawa (1987).

- (i) John-ga Mary-no yokogao-wo/\*ga totemo utsukusiku omotta.  
 John-Nom Mary-Gen face-Acc/\*-Nom very beautiful-Inf think-Pst  
 ‘John thought that Mary’s face was very beautiful.’

Given the attested existence of superraising in Japanese it is puzzling that the embedded subject cannot enter into an Agree relation with the matrix T. In (i) in the presence of the nominative subject *Taro-ga* in [Spec of TP], the long-distance is somehow blocked.

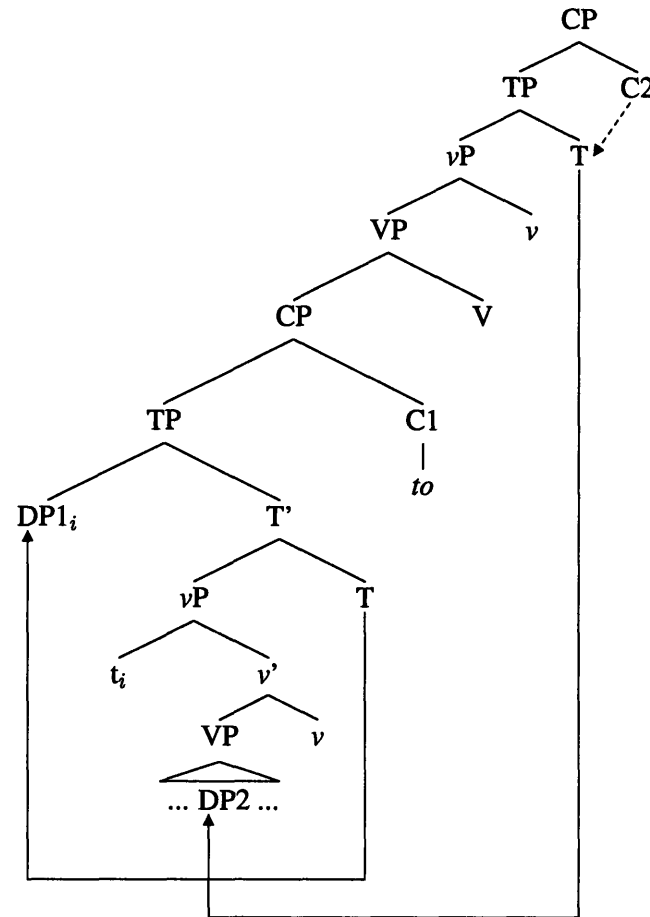
Very interestingly, this prediction is borne out. (3.96) shows that when genitive Case is assigned to the lower DP over the closer nominative DP, the sentence becomes ungrammatical (3.96c). Recall that this contrasts with (3.96d) repeated here.

(3.96) Japanese:

- a. [[ John-**ga** yoku nihongo-**ga** deki-ru/hanas-er-u to]  
     John-Nom well Japanese-Nom do-can-Prs/speak-can-Prs.End C  
 omow-aretei-ru] riyuu]  
 think-PASS-Prs.Adn reason  
 ‘the reason why it is thought that John can speak Japanese’
- b. [[ John-**no** yoku nihongo-**ga** deki-ru/hanas-er-u to]  
     John-Nom well Japanese-Gen do-can-Prs/speak-can-Prs.End C  
 omow-aretei-ru] riyuu]  
 think-PASS-Prs.Adn reason  
 ‘the reason why it is thought that John can speak Japanese’
- c. \* [[ John-**ga** yoku nihongo-**no** deki-ru/hanas-er-u to]  
     John-Nom well Japanese-Gen do-can-Prs/speak-can-Prs.End C  
 omow-aretei-ru] riyuu]  
 think-PASS-Prs.Adn reason  
 ‘the reason why it is thought that John can speak Japanese’
- d. Totemo yoku John-**ga** nihongo-**no** deki-ru/hanas-er-u riyuu  
 very well John-Nom Japanese-Gen do-can-Prs.Adn/speak-can-Prs.Adn reason  
 ‘the reason why John can speak Japanese’ (=3.64c))

Consider the derivation below.

## (3.97) Long-Distance Agreement and NGC



In (3.97) the higher probe (the  $\phi$ -features on C2-T) cannot Agree with DP2 since DP1, which has already Agreed with the probe C1-T, intervenes.

### 3.5.5 Genitive and C: Grammaticalization

Cross-linguistically, C-elements have sometimes grown out of D-elements (see Hopper and Traugott 1993, Roberts and Roussou 2003). For example, the complementizer in English *that* is clearly homophonous with the distal definite demonstrative determiner *that*.

(3.98) English (cf. Hopper and Traugott 1993)

- a. **that** book
- b. the book **that** I bought

The same is true in Lakhota. Determiners *ki* (definite determiner), *k'u* (definite determiner), and *cha* (indefinite focus determiner) are nominal determiners.<sup>30</sup>

<sup>30</sup>An example of the determiner *k'u* is missing in Williamson (1984).

## (3.99) Lakhota: (Williamson 1984)

- a. Bill hokšila **ki** aphe.  
 Bill boy D hit  
 'Bill hit the boy.'
- b. igmmu **cha** wəblake.  
 cat F I-see  
 'I saw a CAT.'

These determiners are also used as complementizers in Lakhota, as illustrated in (3.100).

## (3.100) Lakhota: (Williamson 1984, 115-117)

- a. wakayeza ki skata hą pí **ki** iblukcha.  
 children D play Dur Pl. C I-think  
 'I think that the children are playing.'
- b. thaşukawakhą manu pi **k'u** weksuye.  
 his-horse steal Pl. C.Pst I-remember  
 'I remember that his horse had been stolen.'
- c. wichaša ki hi **cha** Mary ableze.  
 man D come C Mary noticed  
 'Mary noticed that the man came.'

Additional examples are drawn from Kpele Ewe, where demonstrative determiners function as relative pronouns.

## (3.101) Kpele Ewe: (Collins 1994)

ŋtsu [xe Mana fo gbo tso].  
 boy which Mana hit returned yesterday

'The boy that Mana hit returned yesterday.'

## (3.102) Kpele Ewe: (C. Collins p.c.)

- a. ame-xe  
 man-this  
 'this man'
- b. ame-xeŋ  
 man-that  
 'that man'
- c. ame-xe-wo  
 man-this-PL.  
 'these men'

The grammaticalization path from D to C illustrated above is naturally expected under our Supercategorical Theory of CP/DP Symmetry: C and D are just different manifestations of *c*.

There is another path of grammaticalization, which is the focus of discussions here: from genitive Case to C. Our *c*<sub>2</sub>-T theory has interesting implications for the grammaticalization of genitive Case into C, which has been much studied in Japanese (in the context of the traditional grammar of Japanese (*Kokugogaku*)).<sup>31</sup>

It is well known that the genitive Case marker *no* in Modern Japanese is also used as a complementizer/nominalizer.

(3.103) a. Modern Japanese:

John-wa [<sub>CP</sub> kinoo Mary-no ki-ta no]-wo sira-nakat-ta.  
 John-Top yesterday Mary-Gen come-Pst.Adn Nml-Acc know-not-Pst.  
 ‘John didn’t know that Mary came yesterday.’

b. Classical Japanese:

[<sub>CP</sub> Tomo-no empoo yori ki-tar-u]-wo yorokobite.....  
 friend-Gen away from come-Pst.Adn-Acc delighted.at  
 ‘(being) delighted at the fact that a friend came all the long way...’

Kinsui (1995) shows from a diachronic perspective that in fact the usage of *no* as a complementizer/nominalizer emerged as the morphophonological distinction between the P.-A. form and the End form became obscure due to the morphophonological assimilation of the two forms that took place around 13th century (see also Yamaguchi 1992 and Kondo 2000 and references therein). The split between Classical Japanese and Modern Japanese is summarized as follows.

(3.104) Summary of C and Adnominal Form in Modern and Classical Japanese

	Classical Japanese	Modern Japanese
HERC	V-Adn	V-no
HIRC	V-Adn	V-no
Nominal complement	V-Adn	V-no
Cleft construction	V-Adn	V-no
Wh-Question	V-Adn	V-no/-ka

Very interestingly, a cross-linguistic investigation reveals that this is not an accident. In fact grammaticalization of genitive Case into C-elements is attested in quite a few languages in the world. For example, in Cuzco Quechua the nominalizer takes the form of *-p* (agentive nominalizer) when the subject is relativized (3.105). It should be noted that this is the same form as the genitive Case marker in the language (3.106).

<sup>31</sup>Significantly, the proposed theory also gives a theoretical basis for other claims made in the traditional grammar. For example, incidentally, in classical Japanese the Case markers *no* and *ga* were both nominative and genitive (Konoshima 1966, Nomura 1993, 1996, 1998 among many others). Our proposed theory of NGC, which regards genitive Case valuation in NGC as parallel with nominative Case valuation provides a theoretical foundation for this old claim.

(3.105) Cuzco Quechua: (Lefebvre and Muysken 1988, 120)

una-n-kuna-ta amacha-q puma-ka  
cub-3-PL-Acc protect-AG.Nml puma-Top

‘the puma who protects his little ones’

(3.106) Cuzco Quechua: (Lefebvre and Muysken 1988, 83)

waso-q punku-n  
house-Gen door-3

‘the door of the house’

Furthermore, the same kind of phenomena has been reported in Apatani and Tibetan (as well as Dyrbal (Dixon 1969) and Mandarin Chinese), where genitive Case markers are used as complementizers/nominalizers.

(3.107) Apatani: (Jackson T.-S. Sun (p.c.), Abraham 1985)<sup>32</sup>

a. ngo [si-mi ka pa-nibo] mju-mi kapa-to  
I cattle-Acc Gen kill-Nml person-Acc see-Perf.

‘I saw the person who killed the cattle.’

b. Apatani: (Abraham 1985, 131)

Kago-ka tuni my  
Kago-Gen kick-Nml man

‘the man whom Kago kicked’

(3.108) Tibetan: (Manzoudaon 1978)

Peema khii-pa thep the  
Peem-Erg carry-Rel(Gen) book D

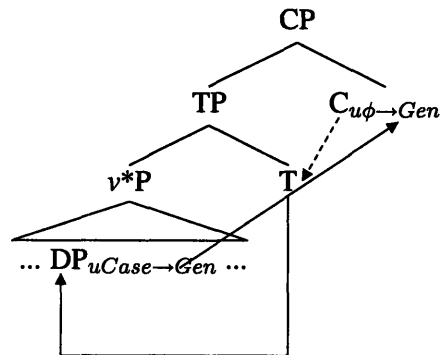
‘the book that Peem carried’

Thus an interesting question arises here: why has the genitive Case been cross-linguistically selected as a candidate for C and what is the syntactic mechanism that drove the diachronic change? Our *c*<sub>2</sub> Theory presents an interesting answer to this. Consider (3.109).

<sup>32</sup>As we will see in Section 3.6, Apatani also has NGC. Interestingly, in Apatani, just like in the case of Cuzco Quechua, genitive Case morphology also appears adjacent to the verb in the case of subject relativization.



## (3.109) The Mechanism of Grammaticalization of Genitive Case into C



As we have argued in the preceding section, under  $c_2$ -T Theory, the structural uCase of the subject DP gets genitive Case via Agree ( $c_2$ -T, DP). Now the genitive Case morphology on C can be considered to be nothing but a phonological spell-out of genitive Case on the probe's side (recall the arguments in Section 3.4.3 about possessive/genitive agreement in NGC in Turkish and Cuzco Quechua).<sup>33</sup>

It is worthwhile to note that the proposed mechanism of grammaticalization may also be able to correctly account for the grammaticalization of the nominative Case *ga* and the Q particle *ka*, which suggests a way toward a unified account of the phenomena. Ishigaki (1955) argues that the sentence conjunction marker *-ga* in (3.110) in Modern Japanese is a grammaticalized form of the nominative Case marker *ga*.

## (3.110) Japanese:

John-wa Mary-ga suki da                    -ga, Mary-wa John-ga kirai  
 John-Top Mary-Nom like CPL.Prs.End CONJ Mary-Top John-Nom dislike  
 da  
 CPL.Prs.End

'Mary dislikes John, although he likes her.'

Yamaguchi (1990) shows that the Q-complementizer *ka* in Modern Japanese was originally a Q-particle attached to a *Wh*-phrase in Classical Japanese. Note that in (3.111) the Q-particle *ka* appears attached with an indeterminate *dare* as shown in (3.112).

## (3.111) Classical Japanese:

hitori nomi kinuru koromo-no himo        tokaba [dare-ka-mo yuha-mu] ihe  
 alone only wear cloth-Gen sash(-Acc) untie-if who-Q-F tie-will-Adn home  
 tohoku-site  
 away-because

'If I untie my sash away from you, who will refasten it for me?' (Manyoosyuu 3715)

<sup>33</sup>According to Oono (1983, 1984) in most of the dialects in Modern Japanese complementizers take forms of genitive Case with phonological variation. This gives further strong support for our theory presented here.

(3.112) Modern Japanese:

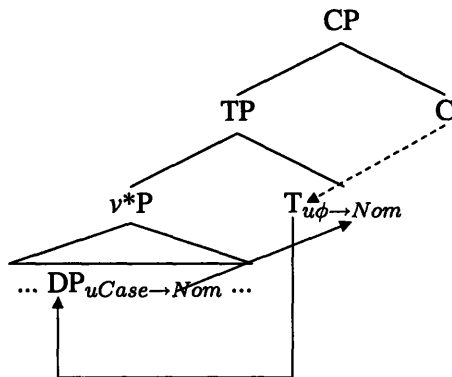
Dare-ga kimasita ka?

who-Nom come-Ps tQ

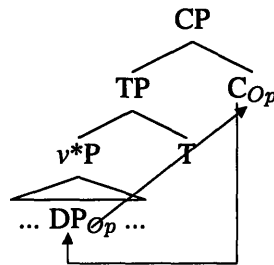
‘Who came here?’

Our theory provides a unified explanation for these facts. In other words, the conjunctive marker *-ga* should be considered to be a spell-out of Agree on the probe T. In the same way the sentence-final Q particle *-ka* should be considered to be a spell-out of *Wh*-Agree(ment) on the probe C.<sup>34</sup>

(3.113) The Mechanism of Grammaticalization of Nominative Case into C



(3.114) The Mechanism of Grammaticalization of the Q-Particle into C



In this section we have shown that our hypothesis that the special verbal inflection in Japanese is formed by Agree (C, T) receives empirical support from *Kakari-Musubi* Construction, the Pronoun Attraction Principle in relativization, complementizer blocking effects, and grammaticalization of Case particles in Japanese.

## 3.6 Typology and Nominative-Genitive Conversion

### 3.6.1 NGC Cross-Linguistically

As we have already seen in the preceding sections, NGC (or genitive-marking of the subject) is in fact observed in many languages other than modern and classical Japanese: American Indian

<sup>34</sup>Sinhala exhibits the same phenomena as (3.111). See Hagstrom (1998), Kishimoto (1991, To appear).

languages such as Cuzco Quechua (Lefebvre and Muysken 1988) of the Quechuan family and Yaqui (Dedrick and Casad 1999), Wappo (Li and Thompson 1978), Chemehuevi (Press 1986), and Nevome (Shaul 1986) of the Uto-Aztecan family, West Greenlandic<sup>35</sup> (Bok-Bennema 1991) of the Eskimo-Aleut family, Dagur (Hale and Ning 1996, Hale 2002 (also K. Hale p.c.)) and Modern Mongolian (Binnik 1979) of the Mongolian family, many languages of the Turkic family such as Turkish (Kornfilt 1984, 1987, 2000, Kural 1993, Aygen 2003), Uzbek (Boeschoten 1998) and Tuvan, middle Korean (Yang 1995, Sohn 1998), Chamorro (Gibson 1980, Chung 1982), Hawaiian (Hawkins 1979), Samoan (Chung 1973) of the Polynesian family, languages of the Australian family such as Lardil (N. Richards (p.c.)) and Kayardild (Niocolas 1995), some Tibeto-Burman languages such as Mishing (Miri) (Jackson T.-S. Sun (p.c.), Prasad 1991) and Apatani (Abraham 1985), and African languages such as Ewe of the Niger-Congo family, among many others.

Some examples are shown below.

(3.115) Modern Japanese:

- a. Kinoo John-ga kat-ta hon  
yesterday John-Nom buy-Pst.Adn book  
'the book which John bought yesterday'
- b. Kinoo John-no kat-ta hon  
yesterday John-Gen buy-Pst.Adn book  
'the book which John bought yesterday'

(3.116) Classical Japanese:

- a. Imo-ga misi ahuti-no hana-wa tirinubesi wa-ga  
sister-Nom see-Pst-Adn ahuti-Gen flower-Top fall-almost-Pst-mod I-Nom  
naku namida imada hinaku-ni  
cry-Prs.Adn teas yet dry-up-Neg-Dat  
'The flowers will fall too which she eyed before my woeful tears are dried.' (*Manyoosyuu* 798)
- b. Tomo-no empoo yori ki-tar-u-wo yorokobite  
friends-Gen away from come-Pst-Adn-Acc delighted-at  
'(being) delighted at (the fact) that friends came all the long way...'

(3.117) Cuzco Quechua: (Lefebvre and Muysken 1988)

Xwancha-q runa-Ø/\*ta riku-sqa-n wasi-ta rura-n.  
Juan-Gen man-OBJ/Acc see-Nml-3 house-Acc build-3

'the man that Juan saw builds a house.'

<sup>35</sup>In West Greenlandic, which is an ergative language, ergative Case morphology and genitive Case morphology are actually identical, as it is often the case with ergative languages, and therefore more careful examination is necessary in future research to see whether genitive-marking in nominalization construction in this language is an instance of genuine NGC.

(3.118) Yaqui: (Dedrick and Casad 1999)<sup>36</sup>

huná'a baákot 'èm kó'oko-si yáa-k-a'u 'enčí ná'ateho-k  
 that snake your(Gen) pain-ADV make-Perf.-Nml you-Acc accuse-Perf.

'The snake that you hurt accused you.'

## (3.119) Modern Mongolian: (Binnik 1979)

Tednij xij.sen ajl.yg üz.lee  
 they-Gen do-Pst-Nml work-Acc see-witness

'I saw the work they did.'

## (3.120) Dagur: (Hale and Ning 1996)

mini aw-sen mer-min  
 I-Gen buy-Pst horse-1sg

'the horse I bought'

## (3.121) Turkish: (M. Kelepir p.c.)

Dün Mary-nin bas-i-na koy-dig-u toko  
 yesterday Mary-3.Gen head-3.Sg.Poss put-Nml-3.Sg.Poss hairclip

'the hairclip which Mary put on her head yesterday'

<sup>36</sup>In Yaqui, the accusative Case marker *-ta* is also employed as genitive Case marker. Interestingly, a full DP subject in a relative clause is also obligatorily marked as accusative/genitive (cf. Dedrick and Casad 1999).

## (i) Yaqui: (Dedrick and Casad 1999)

behák née bakót-ta bobók-ta bwá'e-m-ta né bíča-k  
 just:now I snake-Acc frog-Acc eat-Nml-Acc I see-Perf.

'I just saw a snake that is eating a frog.'

Under our theory this phenomenon can be accounted for as an instance of NGC. It should be noted that accusative/genitive-marking on the subject of a relative clause is also observed in Wappo (Li and Thompson 1978, 107), Nevome (Shaul 1986), and Chemehuevi (Press 1986), languages of the Yuki family.

## (ii) Wappo: (Li and Thompson 1978, 107)

[ʔi/\*ʔah čhuya-Ø t'ynt-i] šy'ikhi?  
 me-Acc/Nom house-Acc bought-Nom burned-down

'The house that I bought burned down.'

- (3.122) Mishing (Miri) (Jackson T.-S. Sun p.c.), Prasad 1991, 122)

ngo-ka kaa-nam ami da si daku  
I-Gen see-Nml person DET this CPL

‘This is the person I saw.’

- (3.123) Apatani: (Abraham 1985, 131)

Kago-ka tuni my  
Kago-Gen kick-Nml man

‘the man whom Kago kicked’

- (3.124) Middle Korean: (Yang 1995, 226)

nwuy tanglang-uy nunghi swulwuy kesulum -ul polio.  
who-Nom tanglang-Gen easily cart push-Nml-Acc see-Prs

‘Who can see Tanglang’s pushing the cart easily?’

- (3.125) Chamorro: (Chung 1982)
- <sup>37</sup>

- a. Chamorro:

Hafa f-in-ahan-na si Maria gi tenda?  
what IN-buy-Nml-her-Poss unm Maria Loc store

‘What did Mary buy at the store?’

- b. In-kännu’i nëngkanu’ [ni f-in-ahan-ña si Mari gi tenda.
- 
- Elp-eat the.food C IN-buy-Nml-her-Poss unm Maria LOC store

‘We ate the food that Maria bought at the store.’ (Chung 1982)

- (3.126) Ewe: (Collins 1993)

Kofi biè be lamata \*ɛ/wò fo Kosi.  
Kofi asked C why 3Sg.(Nom)/3Sg.(Op) hit Kosi

‘Kofi asked why he his Kosi?’

One of the important implications of our theory is that it expects a universal correlation between the (non-)existence of NGC and the type of relativization strategy. Under our theory the genitive Case of the subject can be valued only by the  $\phi$ -features on the C-T system. In fact NGC is not observed in languages which use a *Wh*-movement strategy alone (e.g. English, Hindi, etc.) or overt-complementizer strategy (e.g. Thai, Modern Hebrew, Persian, etc.).<sup>38</sup> Following the conjecture, we propose the following cross-linguistic generalization (implicational universal).

<sup>37</sup>In Chamorro the overt complementizer *ni* is used in relativization along with the relativizing special verbal inflection. One might argue that this is an apparent counterexample to our cross-linguistic generalization of NGC presented above. However, it would be worth suggesting a possibility that the structure in question is a kind of P-CP structure just like (3.30)–(3.35) in Japanese.

<sup>38</sup>See Section 3.5.3 and Section 3.5.4. Recall that in Japanese and Turkish the presence of overt complementizers blocks NGC.

- (3.127) The NGC Universal  
Nominative-Genitive Conversion (NGC) is possible only in a language L which employs the C-T(-V) Agree strategy in relativization; consequently, NGC is not observed in the languages which use an overt complementizer strategy in relative clause formation.<sup>39</sup>

### 3.6.2 Ewe: Collins (1993)

Collins (1993, Chapter 4) observes a phenomenon in Ewe very close to the NGC in our terms. Collins (1993) shows that in Ewe, a 3rd person pronoun *é* shows a special form *wò* when the local [Spec, CP] is occupied by a *Wh*-operator (i.e. *Wh*-Questions, relativization and clefts).<sup>40</sup>

- (3.128) Ewe: (Collins 1993, 157)
- a. *é/\*wò* *fo* Kɔsi.  
3Sg.(Nom)/3Sg.(Op) hit Kosi  
'He hit Kosi.'
  - b. Kofi *bie* *be* lamata *\*é/wò* *fo* Kɔsi.  
Kofi asked C why 3Sg.(Nom)/3Sg.(Op) hit Kosi  
'Kofi asked why he his Kosi?'
  - c. Kofi *gblɔ* *be* *è/\*wo* *fo* Kɔsi.  
Kofi said C 3Sg.(Nom)/3Sg.(Op) hit Kosi  
'Kofi asked that he his Kosi.'

- (3.129) Ewe: (Collins 1993, 172)
- lamata *\*é/wò* *dzo*  
why 3Sg.(Nom)/3Sg.(Op) leave  
'Why did he leave?'

- (3.130) Ewe: (Collins 1993, 179)
- me e* *gblɔ* *be* *é/wò* *fo?*  
who you say C 3Sg.(Nom)/3Sg.(Op) hit  
'Who did you say that he hit?'

Notice that the form of the 3rd person pronoun is different when there is *Wh*-movement. More accurately, the crucial factor is  $\bar{A}$ -dependency.

The important insight of Collins' analysis is that the genitive Case in Ewe is [+labial] and *wò* is a realization of this feature.

<sup>39</sup>Diachronically, the nominative Case marker *-ga* and the genitive Case marker *-no* were also used as both nominative and genitive Case markers in Classical Japanese (cf. Nomura 1993, 1996, 1998). However, it is important to note that our investigation shows that this historical fact, though it has a quite significant importance in the investigation of Japanese syntax, does not play any crucial role in the (un)availability of NGC in a given language L. As far as I know, none of the other languages listed above has the same diachronic facts as Japanese.

<sup>40</sup>E. Aboh (p.c.) informed me that this kind of phenomena seems to be restricted to certain Western Gbe languages. Neither Gungbe nor Fongbe, for example, seem to allow it.

(3.131) 3sg-Op and the genitive D have the form: [+labial].  
(Collins 1993:161).

(3.132) Ewe: (Collins 1993)

Kofi mɛ keke  
Kofi 's bike  
  
'Kofi's bike'

He demonstrates that 3.131 holds at least in three dialects of Ewe (Standard, Kpele and Gen).<sup>41</sup>

(3.133) 3rd Person Singular Pronouns in Dialects of Ewe (Collins 1993)

	Standard	Kpele	Waci	Gen	Inland
3Sg.	é	é	é	é	é
3Sg.-Op	wò	wò	è	bě	?
Genitive	fé	mé	?	bé	wó

If Collins' insight (3.131) is on the right track, then Ewe *é/wò* alternation is another interesting of NGC in the sense that a genitive Case is involved, even though *wò* itself is not a genitive pronoun. In fact, Collins (1993), based on different assumptions, proposes that there is T-to-C movement at LF in  $\bar{A}$ -dependencies in Ewe and this is responsible for the *é/wò* alternation.<sup>42</sup>

Although Collins (1993) does not give any principled explanation for why genitive Case is linked to  $\bar{A}$ -dependency, his analysis is important for us in that he shows that the C-T relation is somehow crucial for genitive Case. If we follow Collins (1993), we can account for the *é/wò* alternation by Agree (C-T, DP), the difference between Ewe and Japanese being that the C-T relation is invisible in the former but visible in the latter (as the P.-A. form).

(3.134) Ewe: Adjunct Clauses (Collins 1993, 177)

- a. ga-xe-me \*é/wò va  
time-which-in 3Sg.(Nom)/3Sg.(Op) came  
'When he came...'
- b. me ɖa nu gake é/\*wò ɖu nu vɔ.  
I prepared thing but 3Sg.(Nom)/3Sg.(Op) ate thing already  
'I cooked, but he had already eaten.'

### 3.7 Transitivity Restrictions: Parameters and Case Dependency

In this section, I make a brief note on the issue of Transitivity Restrictions (TR) in NGC and propose a parametrization to provide a unified explanation for TR in NGC and Case patterns in Dative Subject Constructions (DSC).

<sup>41</sup> Another striking fact is that the alternation is sensitive to person features. The described NGC in Ewe is only observed for 3rd person singular pronouns. It is probably not an accident that NGC in Ewe is restricted to the most unmarked (and hence default) element: the 3rd person singular. I leave the issue for future research here.

<sup>42</sup> I will not review the details of his analysis here.

## (3.135) Typology of TR

Yes	Japanese, Cuzco Quechua, Chamorro,...
No	Turkish, Dagur, Yaqui, ...

## 3.7.1 Transitivity Restrictions

As it has been noted by Harada (1971, 1976) and Watanabe (1994, 1996a,b) among others, Japanese disallows accusative Case-marking in NGC (see Section 3.11; cf. also Cuzco Quechua and Chamorro).

## (3.136) Japanese:

- a. Kinoo John-ga hon-wo kat-ta mise  
yesterday John-Nom book-Acc buy-Pst.Adn shop  
'the shop where John bought books yesterday' [Nom-Acc]
- b. \* Kinoo John-no hon-wo kat-ta mise  
yesterday John-Gen book-Acc buy-Pst.Adn shop  
'the shop where John bought books yesterday' [Gen-Acc]
- c. \* Kinoo hon-wo<sub>i</sub> John-no t<sub>i</sub> kat-ta mise  
yesterday book-Acc John-Gen buy-Pst.Adn shop  
'the shop where John bought books yesterday' [Acc-Gen]

(3.136b) shows that accusative Case is unavailable when the subject has genitive Case. Furthermore (3.136c) demonstrates that this is not an adjacency effect; the sentence is still ungrammatical even if the accusative element is scrambled before the genitive subject. The point is made clear by the fact that neither dative nor prepositional elements trigger TR, as shown in (3.137). (Watanabe 1994, 1996a,b).

## (3.137) Japanese:

John-ga/no MIT-ni it-ta hi  
John-Nom/Gen MIT-Dat go-Pst.Adn day  
'the day when John went to MIT'

Thus TR is a condition on valuation of Accusative Case and Nominative Case. With this in mind, now let us consider the condition in more detail.

## 3.7.2 Case: Narrow Syntax and Transfer

Interestingly, as Watanabe (1994, 1996a,b) correctly points out, the restriction is lifted if the accusative object is *Wh*-extracted. Examples from relativization (and cleft) are shown below, respectively.

## (3.138) Japanese: (Watanabe 1996b)

[[John-ga/no t<sub>i</sub> kat-ta] hon<sub>i</sub>]  
John-Nom/-Gen buy-Pst.Adn book



‘the book which John bought’

(3.139) Japanese: (Hiraiwa 2001b)<sup>43</sup>

[[John-**ga/no** t<sub>i</sub> kat-ta no]-wa kono hon-**wo** da.  
John-Nom/Gen buy-Pst.AND C-Top this book-Acc CPL

‘It is this book that John bought.’

However, the suspension of TR is also observed in the case of pro-drop of the Accusative object.

(3.140) Japanese: (Hiraiwa 2001b)

a. \* [[John-**no** hon-**wo** kasi-ta] hito]  
John-Gen book-Acc lend-Pst.Adn person  
‘the person whom John lent a book’

b. [[John-**no** pro kasi-ta] hito]  
John-Gen pro(Acc) lend-Pst.Adn person  
‘the person whom John lent (a book)’

Considering these facts, I would like to propose the following generalization (Kuroda 1965, Kuroda 1978, Marantz 1991).<sup>44</sup>

(3.141) ACC-NOM Generalization

Spell-Out of morphological Accusative case is contingent on structural Nominative Case.

Putting aside the precise theoretical implementation for now, (3.141) states an interdependence between morphological Accusative case and structural Nominative Case. I propose that the binary structural vs. morphological case dichotomy (Chomsky 1981) corresponds to the two facets of the nature of Case: Agree in Narrow Syntax and Spell-Out at Transfer.<sup>45</sup>

Thus (3.136b) and (3.136c) result in ungrammaticality because there is no Nominative Case element in these derivations; instead, under our theory C enters into an Agree relation with the subject and values Genitive Case. On the other hand, the derivations in (3.138), (3.139), and (3.140b) are all correctly ruled in; *v* values Accusative on the object, but there is no morphophonological spell-out of the Accusative Case at Spell-Out.

### 3.7.3 Dative Subject Construction

The generalization formulated in (3.141) brings an interesting consequence: in particular it makes a prediction that the same mechanism holds universally in other constructions in Japanese.

It is well-known that in Japanese, Dative Subject Constructions (DSC) resist accusative Case-marking, allowing only the Dat-Nom pattern (Shibatani 1978, Ura 1996, 1999, 2000).

<sup>43</sup>There are speakers who do not find clefting of an Accusative object fully grammatical. For an extensive study of cleft constructions in Japanese, see Hiraiwa and Ishihara (2002).

<sup>44</sup>(3.141) crucially differs from Kuroda’s theory of Case and Marantz’s theory in that the structural/morphological Case distinction is vitally important.

<sup>45</sup>See Hiraiwa (2002b) for a theory of abstract/morphological Case within a current framework and its application to the so called Double-*o* Constraint).

(3.142) Japanese:

- a. John-**ga** nihongo-**ga** hanas-e-ru (koto)  
 John-Nom Japanese-Nom speak-can-Prs (that)  
 ‘John can speak Japanese.’ [Nom-Nom]
- b. John-**ga** nihongo-**wo** hanas-e-ru (koto)  
 John-Nom Japanese-Acc speak-can-Prs (that)  
 ‘John can speak Japanese.’ [Nom-Acc]

(3.143) Japanese:

- a. John-**ni** nihongo-**ga** hanas-e-ru (koto)  
 John-Dat Japanese-Nom speak-can-Prs (that)  
 ‘John can speak Japanese’ [Dat-Nom]
- b. \* John-**ni** nihongo-**wo** hanas-e-ru (koto)  
 John-Dat Japanese-Acc speak-can-Prs (that)  
 ‘John can speak Japanese’ [Dat-Acc]

The potential construction is one of the constructions that allow nominative objects in Japanese. When the subject is Nominative, both Nominative and Accusative objects are allowed (3.142). However, once the subject is marked in dative, the accusative object becomes illicit (3.143). As it is already clear, the ungrammaticality of (3.143b) is naturally expected under (3.141); the spell-out of accusative Case fails to be licensed in the absence of nominative Case elements. Instead, the subject is assigned inherent dative case (Ura 1996, 1999, 2000). Thus our generalization (3.141) brings to light the significant nature underlying the Case system in Japanese, and gives a unified explanation to ostensibly unrelated phenomena (TR in NGC and the Case pattern in DSC).<sup>46</sup>

The following data combining DSC and NGC lend further supporting evidence for (3.141).

(3.144) Japanese:

- a. John-**ga** nihongo-**ga/wo/no** hanas-e-ru jijitsu  
 John-Nom Japanese-Nom/Acc/Gen speak-can-Prs.Adn fact  
 ‘the fact that John can speak Japanese’ [Nom-Nom] [Nom-Acc] [Nom-Gen]

<sup>46</sup>Traditionally, the facts in (3.143) have been explained by assuming that T must always assign nominative Case in Japanese (Shibatani 1978, Takezawa 1998, Ura 1996, 2000). Thus under these theories, (3.143b) is ruled out since the uninterpretable Case feature on T remains unchecked and leads to crash. However, such a hypothesis cannot be empirically true, once you consider NGC, as an example such as (3.14) clearly shows (repeated here as (i)). Note that the sentence is perfectly grammatical despite the fact that there is *-no* nominative Case spelled out.

(i) Japanese:

Kinoo John-**no** kat-ta hon  
 yesterday John-Gen buy-Pst.Adn book

‘the book which John bought yesterday’

- b. John-**no** nihongo-**ga**/**\*wo**/**no** hanas-er-u jijitsu  
 John-Gen Japanese-Nom/Acc/Gen speak-can-Prs.Adn fact  
 ‘the fact that John can speak Japanese’ [Gen-Nom] \*[Gen-Acc] [Gen-Gen]
- c. John-**ni** nihongo-**ga**/**\*wo**/**no** hanas-er-u jijitsu  
 John-Dat Japanese-Nom/Acc/Gen speak-can-Prs.Adn fact  
 ‘the fact that John can speak Japanese’ [Dat-Nom] \*[Dat-Acc] [Dat-Gen]

(3.144) shows that among nine possible Case combinations in Japanese, the two ungrammatical patterns are both those with accusative Case without nominative Case, conforming to the generalization (3.141).<sup>47,48</sup> To sum up this section, a new hypothesis has been proposed for TR in NGC: Spell-out of morphological accusative Case is contingent on nominative Case valuation on T in the next strong phase. It has also been shown that this generalization explains not only TR in NGC but also the Case pattern in DSC in Japanese.

### 3.7.4 A Consequence: Miyagawa’s (1993) Scope Phenomena Revisited

Miyagawa 1993, 218 notes that NGC sentences like (3.145b), in contrast with (3.145a), show a scope ambiguity and argues that this is strong evidence for genitive Case checking by an external D head in NGC, under the assumption that the Case checking position feeds scope determination.

(3.145) Japanese: (cf. Miyagawa 1993, 218)

- a. John ka Mary-**ga** ki-ta riyuu  
 John or Mary-Nom come-Pst.Adn reason  
 ‘the reason John or Mary came.’ (reason > J or M)
- b. John ka Mary-**no** ki-ta riyuu  
 John or Mary-Gen come-Pst.Adn reason  
 ‘reason>(J or M): ‘the reason John or Mary came.’  
 ‘(J or M)>reason: ‘the reason John came or the reason Mary came.’

Ochi (2001), building on Miyagawa’s observation, correctly points out that a placement of an embedded adverb before the genitive subject eliminates the wide scope reading of the genitive subject.

(3.146) Japanese: (cf. Ochi 2001)

- a. Kinou John ka Mary-**ga** ki-ta riyuu  
 yesterday John or Mary-Nom come-Pst.Adn reason

<sup>47</sup>A word of caution is in order here for the Dat-Gen pattern in (3.144). In order for the genitive object to enter into a proper Agree relation with the probe C-T beyond the dative subject, it is expected that the dative element in Japanese is “transparent” for the probe  $\phi$ -features and hence does not trigger Defective Intervention effects, like in datives in Mainland Scandinavian languages (Swedish, Norwegian, and Danish), in contrast with Icelandic (see Ura 2001, Boeckx 2000, 2002, Hiraiwa 2002a for detailed discussion on this point with supporting evidence for the dative transparency in Japanese).

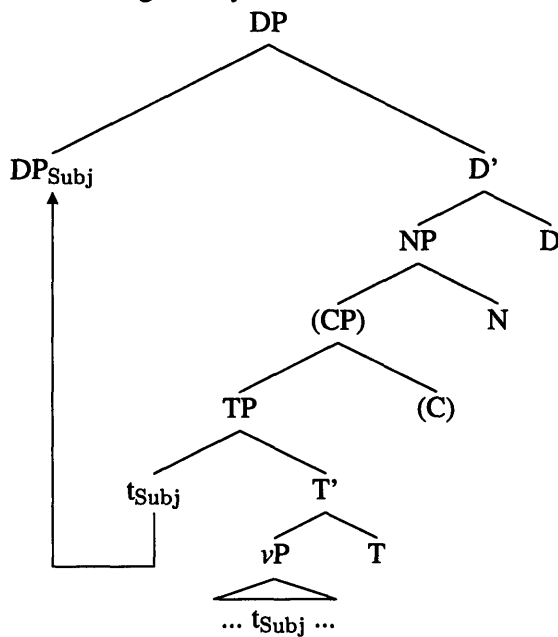
<sup>48</sup>The principle (3.141) readily extends to ergative languages as well. As is well known, the Erg-Acc pattern is cross-linguistically extremely rare.

- 'reason > (J or M), \*(J or M) > reason
- b. Kinou John ka Mary-no ki-ta riyuu  
 yesterday John or Mary-Gen come-Pst.Adn reason  
 'reason > (J or M), \*(J or M) > reason

Ochi (2001) argues that this is in fact expected in his ECM analysis of NGC on a par with Lasnik's (1999) analysis of ECM in English; if the raising of the genitive subject into a Spec-DP position is overt, it yields wide scope, whereas if the raising is covert, no wide scope is allowed. Note that the position of the embedded adverb clearly indicates that the genitive DP has not raised overtly out of the relative clause in (3.146b).

To the extent that these scope facts are real, however, they constitute a good piece of evidence for the ECM/Raising analysis of Miyagawa (1993) and Ochi (2001) over our proposed theory; under our theory of NGC, it is predicted that there should be no real scope ambiguity between a genitive subject DP and a nominative subject DP with respect to an external relativized head DP.

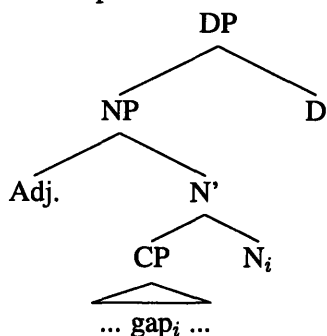
(3.147) ECM/Raising Theory



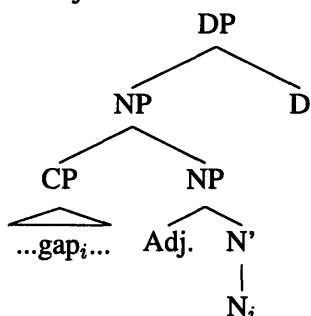
But there is one tricky issue to note. Ochi's observation means after all that wide scope of the genitive subject DP obtains only with overt raising to [Spec, DP]. But such raising is in fact disallowed.

The ECM/Raising analysis suffers another empirical problem; it expects that when raising is overt, a genitive subject DP can precede an adjective that modifies an external relative head DP. But as the following sentences show, the prediction is not borne out.

## (3.148) RC Complement to N



## (3.149) RC Adjoined to NP



As shown below, a possessor and adjective shows free word order alternation. Just for convenience, let us assume that the order in (3.150b) is derived via scrambling from the base order (3.150a).

## (3.150) Japanese:

- a. John-no aka-i hon  
John-Gen red-Adn book  
'John's red book'
- b. aka-i John-no hon  
red-Adn John-Gen book  
'John's red book'

Now, if Miyagawa and Ochi are correct in that a genitive subject DP can optionally undergo overt raising to [Spec, DP] of the external head, it is predicated that it can precede an adjective, as in (3.150). However, this is not true, as shown in the following examples. The genitive subject DP cannot readily precede the adjective.

## (3.151) Japanese:

- a. [<sub>DP</sub> [<sub>NP</sub> [<sub>CP</sub> John-**ga**/no kat-ta] akai kuruma]  
John-Nom/Gen buy-Pst.Adn red-Adn car  
'the red car that John bought'

- b. [<sub>DP</sub> [<sub>NP</sub> akai [<sub>CP</sub> John-**ga/no** kat-ta] kuruma]  
       red-Adn John-Nom/Gen buy-Pst.Adn car  
       ‘the red car that John bought’
- c. \* [<sub>DP</sub> John-**ga/no**<sub>i</sub> [<sub>NP</sub> akai [<sub>CP</sub> t<sub>i</sub> kat-ta] kuruma]  
       John-Nom/Gen red-Adn buy-Pst.Adn car  
       ‘the red car that John bought’

The ungrammaticality of the nominative subject in (3.151c) is unquestionable and expected, given that scrambling out of the relative clause is prohibited, presumably due to island constraints. But the ungrammaticality of the genitive subject in (3.151c) is totally unexpected and problematic for the ECM/Raising analysis. The ungrammaticality of (3.151c) is, thus, crucial evidence against the ECM/Raising theory of NGC.<sup>49</sup>

The examples are fatal for the ECM/Raising theory, because the theory is crucially built on the premise that overt raising to [Spec, DP] is licit. If such overt raising is disallowed, the scope argument does not stand and hence their ECM/Raising theory of NGC loses its firm foundation. The scope asymmetry, if any, must be explained by some other mechanism that has nothing to do with ECM/Raising.

Transitivity Restrictions also point to the same reasoning. Consider the example below.

(3.152) Japanese:

[<sub>DP</sub> John ka Mary-**no** [kyonen kuruma-wo kaikae-ta] riyuu]  
       John or Mary-Gen last-year car-Acc buy.change-Pst.Adn reason

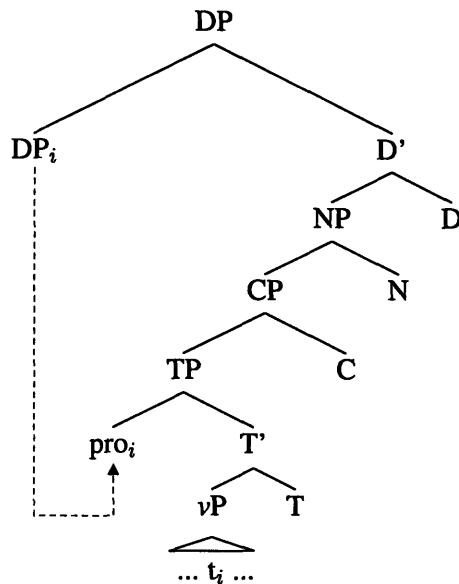
(J or M) > reason: ‘the reason John bought a new car last year or the reason Mary bought a new car last year’

\*reason > (J or M): ‘the reason John or Mary bought a new car last year’

The sentence should be ungrammatical due to the TR. But the sentence is grammatical under an interpretation where the genitive conjoined DP takes wide scope. The sentence is ungrammatical with the narrow scope reading of the genitive DP. The fact that the wide scope reading is free from TR effects indicates that the derivation does not involve raising, which is termed here PSEUDO-NGC.

<sup>49</sup>(3.151c) may be acceptable under an interpretation in which the genitive DP *John-no* is taken to be a possessor for the NP *kuruma*. But still the sentence is awkward, presumably for semantic reasons, as “John’s red bought car” does not sound good in English, either.

## (3.153) Pseudo-NGC



In (3.153) a genitive DP is base-generated in a Spec-DP position as a normal genitive phrase. This DP is in a control relation with the subject of the relative clause *pro* in Spec-TP. Under this structure, the wide scope of the genitive DP over the relative head *D* obtains. If this account is on the right track, the absence of TR in (3.152) also naturally follows; (3.152) is never an instance of NGC. Thus the morphological accusative Case of the object is properly licensed in the presence of the phonologically null subject *-pro*. Note that the preceding argument brings a consequence; as our  $c_2$ -T Theory of NGC predicts, in genuine NGC, the subject *-nominative or genitive-* only exhibits narrow scope with respect to the external head DP, which in turn calls into question the ECM/Raising analysis of NGC.

### 3.8 Loose Ends: Root/Non-Root Asymmetry

This section takes up two issues: (i) the root/non-root clause asymmetry in NGC and (ii) the correlation between valuation of genitive Case and the C-T system.

So far, I have defended the  $c_2$ -T Theory of NGC building on the generalization that the inflectional change of the predicate (the P.-A. form) is the precondition of valuation of genitive Case by the C-T system.

There is, however, a small set of apparent counterexamples to our generalization. As Mikami (1953) already notes, NGC is prohibited in *no-da* focus constructions (Hiraiwa and Ishihara 2002), in *no-de* (because) and *no-ni* (although) adjunct clauses, despite the inflectional change to the P.-A. form. In these constructions, the genitive subject is hopelessly bad.

## (3.154) Japanese:

- a. John-**ga**/\***no**    genki-na    **no-da**.  
    John-Nom/\*Gen healthy-Prs.Adn C-CPL

- 'It is that John is healthy.'
- b. John-**ga**/\***no** genki-na **no-de** ...  
 John-Nom/\*Gen healthy-Prs.Adn C-OBL  
 'Because John is in good health'...
- c. John-**ga**/\***no** genki-na **no-ni** ...  
 John-Nom/\*Gen healthy-Prs.Adn C-DAT  
 'Although John is in good health...'

At first sight, (3.154) nullifies our proposed generalization (3.53) that NGC is licensed by the P-A inflection. I argue, however, that the apparent counterexamples in (3.154) are not real problems for our generalization itself, but rather their ungrammaticality sheds light on another important aspect of NGC. I propose that there is another condition that NGC in Modern Japanese must satisfy (3.155).

(3.155) Value ( $c_2$ -T,  $DP_{Gen}$ ), iff  $c_3$  selecting  $c_2$  has uCase.

A careful explanation of (3.155) is in order here. (3.155) says that the  $c_2$ -T system must be a 'goal' later in the derivation. That is, the  $c_2$ , combining with  $c_3$ , must become an argument of some higher probe. In other words, NGC has two preconditions (external and internal) as follows.

- (3.156) Two Conditions on Agree ( $c_2$ -T,  $DP_{Gen}$ )
- a. Select ( $c_2$ , T) [Internal Relation]
  - b. Select ( $c_3$ ,  $c_2$ -T)
  - c. Agree ( $x$ ,  $c_3$ ) [External Relation]

The sentences in (3.154) do not satisfy (3.156c), since all of them are highly grammaticalized forms with a complementizer *no* combined with particles *de/ni* or a copula *da* (Ishigaki 1955, Kuroda 1999, Kondo 2000 and references therein). As such, their syntactic structures are such that *no-ni* and *no-de* as a whole takes the clauses, rather than *de* and *ni* taking the nominalized *no* clauses. The lexical contiguity of these expressions can be illustrated by the fact that focus particles such as *dake* "only" cannot intervene.

(3.157) Japanese:

John-ga genki-na **-no (\*dake) da/de/ni** ...  
 John-Nom healthy-Prs.Adn C only CPL/OBL/Dat

Note also that the semantics of *noda/node/noni* is not the composition of the meanings of the parts *no+da* (copula), *ni* (dative), or *de* (localive/instrumental).<sup>50</sup>

In this respect, it is very interesting to note an interaction of NGC with the "adverbial-type" Head-Internal Relative Clause (HIRC) (Mihara 1994, Kuroda 1999). Consider (3.158).

<sup>50</sup>It is interesting to note that in an earlier stage where *noda* construction was not yet fully grammaticalized, it is possible to find examples with NGC in *noda* construction. The following is an example in the Edo era that Konoshima (1966, 53) notes.



## (3.158) Japanese:

John-wa [gozentyuu-wa hi-ga/no tettei-ta -no ?ga/?wo/ \*ni] gogo-ni  
 John-Top morning-Top sun-Nom/Gen shine-Pst.Adn C Nom/Acc/Dat afternoon-Dat  
 nat-te ame-ga huridasi-te kara deteit-ta.  
 become-Inf rain-Nom fall-begin-Inf after go.out-Pst

'It was sunny in the morning and/but John went out after it began to rain in the afternoon.'  
 (cf. Kuroda 1999)

Notice that NGC is marginally grammatical with a *no-ga* type subject HIRC and *no-wo* type object HIRC, whereas in the *no-ni* type HIRC, which is now fully grammaticalized into a concessive conjunction marker, NGC results in severe ungrammaticality. Thus generally, the more grammaticalized, the more difficult to apply NGC. In the latter two types of HIRC, the CP is not an argument of anything. Rather, it is an adjunct; hence NGC does not apply due to the external-relation failure.

A similar restriction has been observed for Turkish by Kornfilt (2000) and Aygen (2003).

## (3.159) Turkish: (Aygen 2003, 33)

- a. Kürşat- $\emptyset$  duy-duğ-u-na göre herkes duy-acak.  
 Kürşat-Nom hear-DIK-Agr-Dat since everybody hear-Fut  
 'Given that/Since Kürşat heard, everybody will hear it.'
- b. Kürşat-in duy-duğ-un-a göre herkes duy-acak-mış.  
 Kürşat-Gen hear-DIK-Agr-Dat since everybody hear-Fut-Rep  
 'According to what Kürşat heard, everybody will hear it.'

The condition (3.155) causes some tension for languages that allow NGC in the matrix clauses –e.g. Ewe and Chamorro. These languages, as we have seen, allow NGC in the matrix  $\bar{A}$ -dependencies, in contrast with Japanese, Cuzco Quechua and Turkish (see Section 3.4).

## (3.160) Ewe: (Collins 1993)

me wò fo?  
 who 3Sg.(Gen) hit  
 'Who did he hit?'

## (3.161) Chamorro: (Chung 1998, 236)

Hafa<sub>i</sub> fin'gasése-nña si Henry t<sub>i</sub> pära hagu?  
 What WH[Obj].wash-Prog.Agr SI Henry for you

## (i) Japanese:

Hito-no mune-no waru-i -no da to omot-te ...  
 person-Gen mind-Gen bad-Prs.Adn C CPL C think-CONT

'Thinking that one is annoyed...'

‘What is Henry washing for you?’

(3.162) Classical Japanese:

hitori nomi kinuru koromo-no himo tokaba [dare-ka-mo yuha-mu] ihe  
 alone only wear cloth-Gen sash(-Acc) untie-if who-Q-F tie-will-Adn home  
 tohoku-site  
 away-because

‘If I untie my sash away from you, who will refasten it for me?’ (*Manyoosyuu* 3715)

One possible direction of reasoning is, of course, to suppose that (3.155) is parametrized. In that case, it is necessary to investigate carefully what the nature of the parametrization is. But an even more interesting direction of research is to investigate the nature of the nominalized questions like in the above Chamorro and Classical Japanese examples. Namely, the matrix *Wh*-questions in these languages are nominalized and hence the matrix clauses are bare “nominals”. This kind of phenomenon –not necessarily limited to questions– has received much attention in the literature of traditional Japanese grammar (Kawabata 1963, Onoe 1998) under the name of *Taigendome* (Nominal Ending). Matrix nominalization sometimes emerges in other forms in other languages. For example, there are languages that have so-called Clausal Determiner Constructions, where a matrix clause as a whole is determined by a definite determiner (e.g. *Bùlì*, *Fɔngbe*, Haitian Creole, just to name a few: see Chapter 6.)

(3.163) *Bùlì*:

Àtìm nàyì Àmɔ̀ak lǎ.  
 Àtìm hit Àmɔ̀ak DEM  
 ‘Àtìm hit Àmɔ̀ak (as I said).’

Yet other languages use declarative complementizers in matrix clause.

(3.164) Japanese: (Watanabe 1996b, 392)

Gozi made-ni shukudai-wo sumasu koto!  
 5.o’clock by-Dat homework-Acc finish C  
 ‘Finish the homework by 5 o’clock!’

(3.165) Taiwanese: (F.-F. Hsieh p.c.)<sup>51</sup>

kong John bat li la!  
 C John understand Chinese.characters LA

‘(It is surprising) that John understands Chinese characters!’

<sup>51</sup>*la* is a sentence-final particle.

(3.166) Dutch: (Bennis 1998, 36)

**Dat** hij die boeken kan lezen!  
that he those books can read

'Wow, he can read those books!'

### 3.9 Concluding Remarks

In conclusion, in this chapter, I have argued that nominative and genitive Case valuation is done by the collaboration of  $c_2$  and T under the Supercategorial Theory of the CP/DP Symmetry. Arguments for the theory have come from a variety of constructions that lack an external relativized head and locality effects. As I have shown, the mechanism is widely observed in a number of different (less familiar) languages.



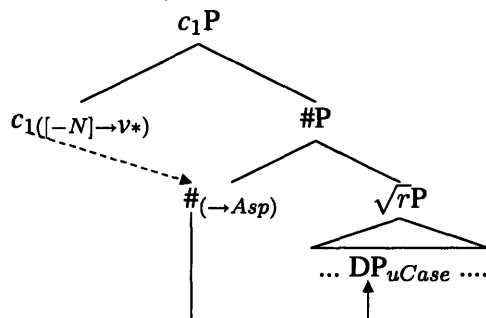
## Chapter 4

# *c*-#: Raising-to-Object/ECM

### 4.1 Introduction

In the preceding chapter, I have argued that the “C-T” relation – more specifically, the  $c_2$ - $\tau$  relation, which manifests itself as a  $C_2$ -T relation–, is responsible for Nominative/Genitive Case.<sup>1</sup> From the CP/DP Symmetry introduced in this thesis, it is expected that the same process takes place in the lower phase level. That is,  $c$ - $\tau$  will appear as a  $v^*$ -Asp relation via  $c_1$ -# and will be responsible for Accusative Case. This is represented schematically below.

(4.1) The  $c$ - $\tau$  Theory of Case: Accusative Case Assignment as  $v^*$ -Asp Relation



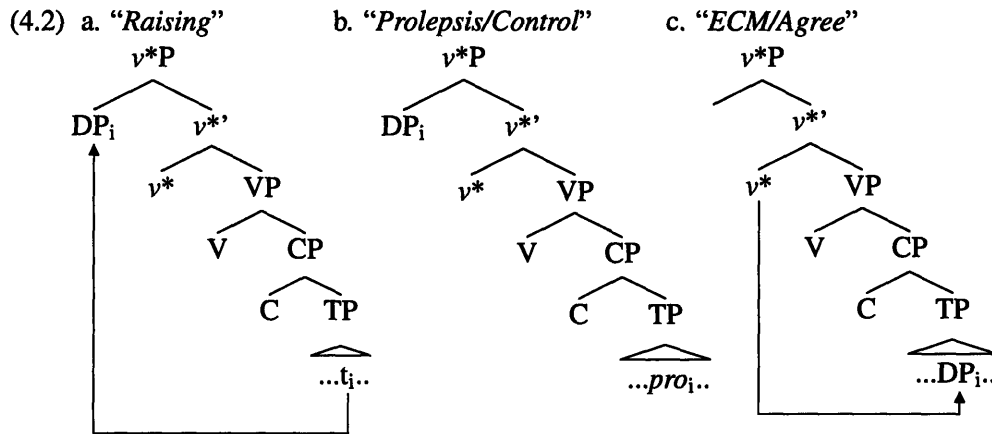
Chomsky (class lectures in Fall 2004) has suggested that this is in fact true, based on English Raising-to-Object Construction/ECM. This chapter adds further support for this theory of accusative Case assignment, based on Raising-to-Object/ECM constructions in Japanese.

Kishimoto (2001) makes important observations on the behavior of the so-called indeterminates in Japanese (cf. Kuroda 1965, McGloin 1976, Muraki 1978, Kishimoto 2001, Takahashi 2002,

<sup>1</sup>I am grateful to Noam Chomsky, Danny Fox, Ken Hale, Nobuko Hasegawa, Sachiko Kato, Hideki Kishimoto, Sachie Kotani, Howard Lasnik, Ken-ichi Mihara, Shigeru Miyagawa, David Pesetsky, Norvin Richards, Luigi Rizzi, Koji Sugisaki, Shoichi Takahashi, Yuji Takano, Akira Watanabe, and in particular Susumu Kuno for helpful comments and discussions. Special thanks go to Joey Sabbagh, who carefully read the final manuscript. An earlier version of this chapter was accepted for WCCFL 21 but never published. Portions of this chapter have been presented at MIT (March 2001), Harvard University (April 2001), and Osaka University of Foreign Studies (June 2001)

Hiraiwa 2002c among others) and their theoretical implications for Japanese syntax. Kishimoto (2001) claims that the behavior of indeterminates reveals that structural Case in Japanese must be determined by LF configurations, returning back to Chomsky (1995). Although illuminating, I will show that Kishimoto's (2001) empirical generalization misses one crucial fact; namely, the Raising-to-Object construction (RTO) in Japanese. Contrary to Kishimoto's claim, I will demonstrate that a closer examination reveals that structural Case in Japanese is licensed via a universal mechanism called AGREE (Chomsky 2000, 2001) and that a simpler solution is available to the workings of the syntax of the indeterminate pronouns, which I term *Indeterminate-Agreement*

It is now well-known that many languages of the world allow RTO across a finite/tensed CP boundary (e.g. Japanese, (varieties of) Quechua (Lefebvre and Muysken 1988), Malagasy, Moroccan Arabic, Kikuyu, Persian, Korean, etc.; Massam 1985, Ura 1994, Bruening 2001 among others) in contrast with English (cf. Rosenbaum 1967, Postal 1974). This type of language often allows a null pronoun, and hence raises a non-trivial question as to whether the RTO is "raising" (4.2a) or "prolepsis/control" (4.2b), or something else "Agree" (4.2c).



Cuzco Quechua, for example, provides convincing evidence for raising. (4.3a) shows that the embedded subject is Case-marked genitive. The ECMed DP in (4.3b), on the other hand, takes accusative Case in addition to genitive Case assigned in the embedded clause.<sup>2</sup> Furthermore, the ECMed DP must precede the matrix verb. The "double" Case-marking, in conjunction with the word order permutation, explicitly excludes the prolepsis/control analysis.

(4.3) Cuzco Quechua (Lefebvre and Muysken 1988, 144, Claire. Lefebvre p.c.)

- a. Maryyacha numa-n **Xwancha-q\*(-ta)** platanu ranti-na-n-ta.  
 Maria want-3 Juan-Gen-Acc banana exchange-Nml-3-Acc  
 'Maria wants Juan to buy bananas.'
- b. Maryyacha **Xwancha-q\*(-ta)**<sub>i</sub> numa-n t<sub>i</sub> platanu ranti-na-n]-ta.  
 Maria Juan-Gen-Acc want-3 banana exchange-Nml-3-Acc

<sup>2</sup>For a mechanism of genitive Case-marking, see Lefebvre and Muysken (1988) and Hiraiwa (2001b). I am grateful to Claire Lefebvre for her kind help with confirming the Cuzco Quechua data. All errors are my own.

‘Maria wants Juan to buy bananas.’

Unfortunately, such evidence is hard to obtain in Japanese. Kuno (1972, 1976) presents word order evidence for a raising-to-object operation. Notice that nominative or topicalized embedded subject DPs cannot precede a matrix adverb, whereas ECMed subject DPs optionally can.

(4.4) Japanese:

- a. Taro-wa (orokanimo) **Hanako-ga/wa** (\*orokanimo) baka da to omot-ta.  
 Taro-Top stupidly Hanako-Nom/Top stupidly stupid Cpl.Prs C think-Pst  
 ‘(Stupidly,) Taro considered Hanako to be stupid.’
- b. Taro-wa (orokanimo) **Hanako-wo**<sub>i</sub> (orokanimo) baka da to omot-ta.  
 Taro-Top stupidly Hanako-Acc stupidly stupid Cpl.Prs C think-Pst  
 ‘(Stupidly,) Taro considered Hanako to be stupid.’

This simple fact convincingly shows that in Japanese, the position below matrix subjects and above matrix adverbs is available only for ECMed accusative DPs, but not for nominative/topicalized DPs. Contrary to Kuno’s claim (Kuno 1976), however, the word order evidence does not convince us that (4.4b) involves “raising” as in (4.2a); a “prolepsis/control” analysis (4.2b) (Saito 1985, Oka 1988, Hoji 1991, Takano 2003) also expects the asymmetry in (4.4). In fact, for this reason, there has been much controversy since the 1970’s about the structure of sentences like (4.4b).

This chapter, based on *Indeterminate-Agreement*, will add another piece of evidence for adopting the raising structure (4.2a) to (4.4b) (see Kuno 1976, Ura 1994, Sakai 1988 and against assigning the prolepsis/control analysis (4.2b); see Saito 1985, Hoji 1991). More importantly, I will argue that the RTO in Japanese is founded on long-distance agreement as in (4.2c). I will show that *Indeterminate-Agreement* also reveals that syntactic raising into the matrix position is optional in RTO (cf. Lasnik 1999 for English) and is a two-step process, targeting the edges of VP and  $v^*P$ .

The organization of this chapter is as follows: Section 4.2 investigates properties of *Indeterminate-Agreement*. I critically review Kishimoto (2001) and propose an articulated theory of the phenomenon. Section 4.3 re-examines RTO, applying *Indeterminate-Agreement* to the construction. Section 4.4 proposes a  $c-\tau$  theory of RTO building on the  $c-\tau$  relation for nominative/genitive Case valuation in the preceding chapter. Section 4.5 discusses implications of *Indeterminate-Agreement* for varieties of raising constructions. Section 4.6 is a summary.

## 4.2 Indeterminate Agreement

As first observed in Kuroda (1965), an indeterminate NP forms a Negative Polarity Item (NPI) or a universal quantifier when it is combined with the particle *-mo* (see also McGloin 1976, Muraki 1978, Nishigauchi 1990, Hiraiwa 2002c, Kishimoto 2001, Takahashi 2002).

(4.5) Japanese:

- a. dare, nani  
 Indet(human), Indet(inanimate)  
 ‘who, what’

- b. **dare-mo**,            **nani-mo**  
 Indet(human)-Q, Indet(inanimate)-Q  
 ‘everyone/any one, everything/anything’
- c. **dare-ka**,            **nani-ka**  
 Indet(human)-Q, Indet(inanimate)-Q  
 ‘someone, something’

The indeterminate plus the particle *-mo* can be interpreted as either an NPI or a universal quantifier, which is reflected in the tonal pattern and the (in)compatibility with Case-markers. The capital letter indicates a high pitch accent/tone.

(4.6) Japanese:

- a. **DAre-mo-ga** ki-ta.  
 Indet-Q-Nom come-Pst  
 ‘Everyone came.’
- b. **daRE-MO(-\*ga)** ko-nakat-ta.  
 Indet-Q-Nom    come-Neg-Pst  
 ‘No one came.’

Significantly, Kuroda (1965) observes that an indeterminate can be structurally split from *-mo*. In (4.7a) the NPI item *indeterminate+mo* as a unit is the object of the verb. In (4.7b), on the other hand, the indeterminate alone is the object of the verb *seme-ru* “blame” and the Q-particle is attached to the verb head *v\**. In this case, tense is left behind and saved by a process similar to *do*-support in English.

(4.7) Japanese:

- a. Taro-wa [<sub>v\*P</sub> **dare-mo** seme]-nakat-ta.  
 Taro-Top    Indet-Q    blame-Neg-Pst  
 ‘Taro didn’t blame anyone.’
- b. Taro-wa [<sub>v\*P</sub> **dare-wo** seme]-**mo** si-nakat-ta.  
 Taro-Top    Indet-Acc blame(Inf)-Q do-Neg-Pst  
 ‘Taro didn’t blame anyone.’

(4.8) illustrates examples of “Indeterminate-Q splitting” in DP, *v\*P* and Complex DP, respectively. In (4.8a), the indeterminate is the possessor of the noun *hon* “book” and the Q-particle *-mo* attaches to the head of the noun phrase (perhaps D). In (4.8b), the Q-particle is attached to the causative verb and dominates the indeterminate object. And finally, (4.8c) is a case where the subject of the relative clause is an indeterminate and the Q-particle is attached to the head of the



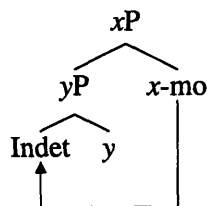
complex DP. I will term the split quantification phenomena *Indeterminate-Agreement*.<sup>3,4</sup>

(4.8) Japanese:

- a. Taro-wa [<sub>DP</sub> **dare-no** hon]-**mo** yoma-nakat-ta.  
Taro-Top Indet-Gen book-Q read-Neg-Pst  
'Taro didn't read anyone's book.'
- b. Taro-wa [<sub>V\*P</sub> **dare-ni** sono-ronbun-wo yom-ase]-**mo** si-nakat-ta.  
Taro-Top Indet-Dat the-paper-Acc read-Caus-Q do-Neg-Pst  
'Taro didn't allow anyone to read the paper.'
- c. Taro-wa [<sub>CP</sub> **dare-ga** kai-ta ronbun]-**mo** yoma-nakat-ta.  
Taro-Top Indet-Nom write-Pst paper-Q read-Neg-Pst  
'Taro didn't read any paper that anyone wrote.'

But the splitting does not come free; it is subject to a c-command condition. An indeterminate NP must be in the c-command domain of the Q-particle *-mo* (henceforth *cd(Q)*). I will assume that Q-particles adjoin to heads. Consider (4.10).

(4.9)



All the examples above meet this condition. In the following examples, however, indeterminates cannot be licensed.

(4.10) Japanese:

- a. **Dare-mo**<sub>i</sub> [<sub>V\*P</sub> t<sub>i</sub> Hanako-wo seme]-nakat-ta.  
Indet-Q Hanako-Acc blame-Neg-Pst  
'No one blamed Hanako.'
- b. \* **Dare-ga** [<sub>DP</sub> Hanako-no hon-**mo**] yoma-nakat-ta.  
Indet-Nom Hanako-Gen book-Q read-Neg-Pst  
'No one read Hanako's book.'

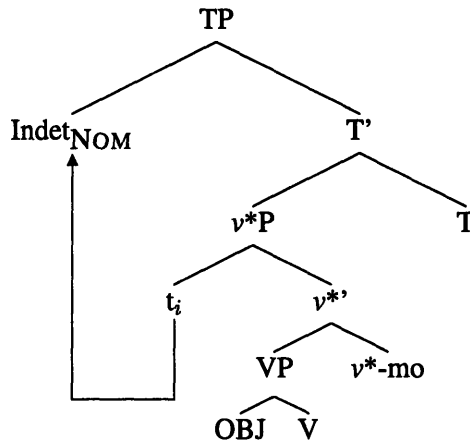
<sup>3</sup>Takahashi (2002) calls this *D-Raising* and Kishimoto (2001) calls it *Indeterminate Pronoun Binding*. Since, as Takahashi (2002) argues and we will also see, there is good evidence to think that the construction in question does not involve binding, I will reject Kishimoto's terminology. See also Takahashi (2002) for some arguments against binding. Takahashi (2002) proposes a D-Raising analysis, whereby the determiner *-mo* starts out within the indeterminate and raises to higher positions, along the lines of Hagstrom (1998). I will not discuss issues raised by his analysis here. Also, I will discuss the non-NPI use of the indeterminates, because there are certain syntactic differences between the two uses of the indeterminates; see Takahashi 2002.

<sup>4</sup>The indeterminate-Q splitting requires a formation of a certain kind of phonological phrasing, usually involving de-accenting after the indeterminate until the Q-particle *-mo*. One should not be confused and think that the phonological phrasing is the main factor determining the licensing of the indeterminates in this construction. As it will become clear later, the mechanism of the Indeterminate-Agreement is syntactic.

- c. \* **Dare-ga**<sub>*i*</sub> [<sub>*v*\*P</sub> *t*<sub>*i*</sub> Hanako-wo seme]-**mo** si-nakat-ta.  
 Indet-Nom Hanako-Acc blame(Inf)-Q do-Neg-Pst  
 ‘No one blamed Hanako.’

In (4.10b), there is no way for the Q-particle to *c*-command the indeterminate subject. Likewise, (4.10c) is ungrammatical because the indeterminate subject in [Spec, TP] is out of the *c*-command domain of the Q-particle attached to the *v*\*.

(4.11) Indeterminate Subject



### 4.2.1 Kishimoto (2001)

In certain stative constructions, the object can be marked Nominative in Japanese, manifesting the so-called Nominative Object constructions as in (4.12). Kishimoto (2001) further observes that nominative indeterminate objects cannot be licensed by *mo* attached to *v*\* as shown in (4.12b).

(4.12) Japanese:

- a. Taro-wa **sono-uta-ga/-wo** uta-e-na-i.  
 Taro-Top the-song-Nom/-Acc sing-can-Neg-Prs  
 ‘Taro cannot sing the song.’
- b. Taro-wa [**nani-\*ga**<sup>o.k.</sup>-wo uta-e-mo] si-na-i.  
 Taro-Top Indet-Nom/-Acc sing-can-Q do-Neg-Prs  
 ‘Taro cannot sing anything.’ slightly modified (Kishimoto 2001, 606)

He argues that the fact that (4.13) shows Proper Binding Condition effects indicates that the nominative object remains within the *v*\*P.

(4.13) Japanese:

- \* [<sub>*v*\*P</sub> uta-e-mo] Taro-wa sono-uta-ga/-wo si-nakat-ta.  
 sing-can-Q Taro-wa the-song-Nom/-Acc do-Neg-Pst  
 ‘Taro cannot even sing the song.’ slightly modified (Kishimoto 2001, 606)

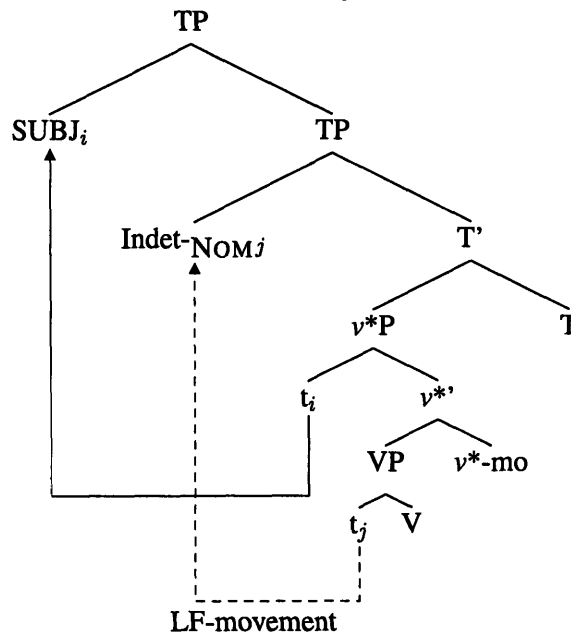
He proposes the following as a mechanism of indeterminates.

(4.14) Indeterminate Pronoun Binding (Kishimoto 2001, 601)

Y is in the domain of a head X if it is contained in  $\text{Max}(X)$ , where  $\text{Max}(X)$  is the least full-category maximal projection dominating X.

(4.14) amounts to saying that indeterminates must be “m”-commanded by a Q-particle. It is puzzling for him, however, that the nominative indeterminate object cannot be licensed by the Q-particle on  $v^*$ , even though it is m-commanded on the surface. He goes further and takes this to be the evidence that Case is checked at LF via covert Spec-Head Agreement (Chomsky 1993) and that Indeterminate-Agreement –*Indeterminate Pronoun Binding*, in his terms – is sensitive to the condition (4.14) at LF. Thus, according to this theory, the derivation (4.12b) is ungrammatical since the nominative object undergoes LF-movement to [Spec, TP], escaping out of the m-command domain of the Q-particle on  $v^*$ .

(4.15) Indeterminate Nominative Object at LF



At LF, the nominative object has to be raised to [Spec,  $v^*P$ ] to have its Case checked by  $v^*$ . Hence the nominative object is out of the domain of *-mo* at LF and the indeterminate cannot be bound.

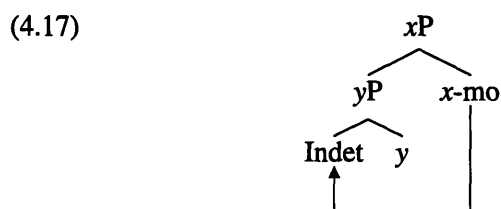
### 4.2.2 A Refinement

Setting aside empirical problems for the moment (we will return to them in the next section), the proposal has two conceptual problems.

First, it assumes that Case-licensing involves an LF configuration –namely, an LF Spec-Head relation (Chomsky 1993). This assumption has been challenged and much counter-evidence has been accumulated together with the rejection of the distinction of overt/covert syntax, as far as Case and Agreement are concerned. Second, it refers to *m*-command as stated in (4.14). The notion of Spec-Head Agreement also presupposes *m*-command. All of the phenomena that have been captured in terms of *m*-command have been re-examined –successfully, in my eyes– in terms of the more natural conception: *c*-command.

I will pursue, therefore, a more natural hypothesis for Indeterminate-Agreement: the indeterminate must be in the *c*-command domain of the *Q*-particle.

(4.16) The head of the chain of the indeterminate must be in  $cd(Q)$  at Transfer.<sup>5</sup>



The hypothesis (4.16) is free from the two conceptual problems that Kishimoto’s theory suffers. In the section that follows, I will demonstrate that (4.16) in fact attains a higher empirical result, which Kishimoto’s LF Case hypothesis cannot achieve.

## 4.3 Raising-to-Object

### 4.3.1 Indeterminate-Agreement and Raising-to-Object

As first observed by Sakai (1988), Indeterminate-Agreement is also grammatical with CP clauses. Thus the *Q*-particle *-mo* can attach to the whole CP clause and bind an element within it, as shown in (4.18)

(4.18) Japanese:

Taro-wa [CP *dare-ga* baka da to]-*mo* omowa-nakat-ta.  
 Taro-Top Indet-Nom stupid Cpl C-Q think-Neg-Pst

‘Taro didn’t consider anyone to be stupid.’

Significantly, Indeterminate-Agreement is licit with RTO as well. In (4.19), the embedded subject is marked Accusative just as in ECM constructions in English. This construction has been considered to be a case of RTO/ECM in Japanese (Kuno 1976).<sup>6</sup>

<sup>5</sup>Transfer sends out a syntactic object to the interfaces and takes place cyclically at each phase level. See Chomsky (2000, 2001, 2004a).

<sup>6</sup>Some people prefer the use of *-no koto* on the ECMed subject. For others, the choice is optional. See Kuno (1976) for some syntactic and semantic properties of *-no koto* in Japanese. Incidentally, Ewe, a Kwa language of West Africa has a similar word “matter, affair, word” used for subjects of experiencer verbs (Collins 1994).

(4.19) Japanese:

Taro-wa **dare(-no-koto)-wo** baka da to-**mo** omowa-nakat-ta.  
Taro-Top Indet(-Gen-thing)-Acc stupid Cpl C-Q think-Neg-Pst

'Taro didn't consider anyone to be stupid.' (cf. Sakai 1988)

Consider (4.20) and (4.21). Indeterminate-Agreement is licensed with the indeterminate ECMed subject when there is no intervening matrix adverb or a subject-oriented floating quantifier (see (4.20b)/(4.20c) (4.21a)/(4.21b)). However, if the ECMed indeterminate NP is overtly raised in front of the matrix adverb or the subject-oriented floating quantifier, then Indeterminate-Agreement is blocked and the sentence results in ungrammaticality.

(4.20) Japanese:

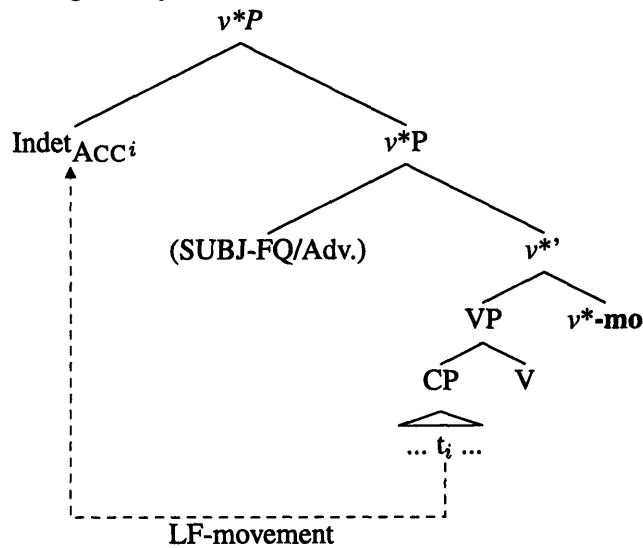
- a. karera-wa zen-in Taro(-no-koto)-wo baka da to omowa-nakat-ta.  
they-Top all Taro(-Gen-thing)-Acc stupid Cpl C think-Neg-Pst  
'All of them didn't consider Taro to be stupid.'
- b. karera-wa Taro(-no-koto)-wo zen-in baka da to omowa-nakat-ta.  
they-Top Taro(-Gen-thing)-Acc all stupid Cpl C think-Neg-Pst  
'All of them didn't consider Taro to be stupid.'
- c. karera-wa zen-in **dare(-no-koto)-wo** baka da to-**mo** omowa-nakat-ta.  
they-Top all Indet(-Gen-thing)-Acc stupid Cpl C-Q think-Neg-Pst  
'All of them didn't consider Taro to be stupid.'
- d. \* karera-wa **dare(-no-koto)-wo<sub>i</sub>** zen-in t<sub>i</sub> baka da to-**mo** omowa-nakat-ta.  
they-Top Indet(-Gen-thing)-Acc all stupid Cpl C-Q think-Neg-Pst  
'All of them didn't consider anyone to be stupid.'

(4.21) Japanese:

- a. Taro-wa orokanimo **dare(-no-koto)-wo** baka da to-**mo** omowa-nakat-ta.  
Taro-Top stupidly Indet(-Gen-thing)-Acc stupid Cpl C-Q think-Neg-Pst  
'Stupidly, Taro didn't consider anyone to be stupid.'
- b. \* Taro-wa **dare(-no-koto)-wo<sub>i</sub>** orokanimo t<sub>i</sub> baka da to-**mo** omowa-nakat-ta.  
Taro-Top Indet(-Gen-thing)-Acc stupidly stupid Cpl C-Q think-Neg-Pst  
'Stupidly, Taro didn't consider anyone to be stupid.'

As we have seen, Kishimoto (2001) claims that Indeterminate-Agreement is sensitive to an LF Case-checking configuration. However, the grammaticality of (4.20c) and (4.21a) indicates that his generalization is not correct. This is because under the LF Case checking theory, the accusative Case of the indeterminate in (4.21) is checked in [Spec, v\*P] at LF. Hence his theory wrongly predicts Indeterminate-Agreement to be blocked, since it does not satisfy his condition (4.14). The fact is, however, that Indeterminate-Agreement is blocked only when the ECMed indeterminate subject precedes the matrix adverbials.

## (4.22) Raising-to-Object at LF

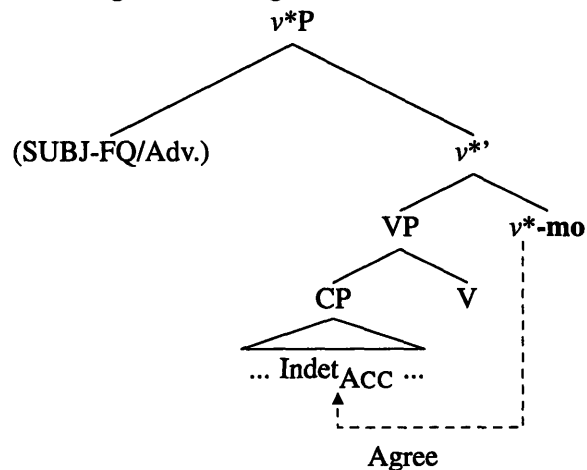


Now, in contrast, our hypothesis that Indeterminate-Agreement is subject to the condition (4.23) exactly explains the asymmetry of Indeterminate-Agreement in the RTO construction.

(4.23) The head of the chain of the indeterminate must be in *cd*(Q) at Transfer. (= (4.16))

As shown below, Case is “assigned” in-situ from  $v^*$  and hence the indeterminate remains in-situ throughout the derivation.

## (4.24) Case Assignment via Agree



The facts in (4.20) and (4.21), along with our generalization (4.23), demonstrate that (i) syntactic raising into the matrix clause in RTO in Japanese is only optional and an ECMed DP can remain

downstairs, and (ii) Case is assigned without displacement (i.e. via Agree rather than Spec-Head Agreement).

(4.25) provides further support to our generalization (4.16) that Indeterminate-Agreement is sensitive to the overt derivation, not LF configuration.

(4.25) Japanese:

- a. Taro-wa Hanako-ga **dare-wo** tatai-ta to-**mo** omowa-nakat-ta.  
Taro-Top Hanako-Nom Indet-Acc hit-Pst C-Q think-Neg-Pst  
'Taro didn't think that Hanako hit anyone.'
- b. \*? **Dare-wo**<sub>i</sub> Taro-wa Hanako-ga t<sub>i</sub> tatai-ta to-**mo** omowa-nakat-ta.  
Indet-Acc Taro-Nom Hanako-Top hit-Pst C-Q think-Neg-Pst  
'Taro didn't think that Hanako hit anyone.'

Long-distance scrambling of the indeterminate to a position out of *cd(Q)* leads to ungrammaticality as shown in (4.25b). It is also to be noted that long-distance scrambling has been claimed to be totally reconstructed (Saito 1989, 1992). The ungrammaticality of (4.25b) indicates that Indeterminate-Agreement cannot be licensed by reconstruction. Therefore, Indeterminate-Agreement in RTO as well as long-distance scrambling of the indeterminates demonstrates that Kishimoto's theory of Indeterminate-Agreement is empirically problematic.

However, under our theory of Indeterminate-Agreement, it remains to be explained why there is such an asymmetry in (4.12), repeated below.

(4.26) Japanese:

- Taroo-wa [**nani-\*** *ga*<sup>o.k.</sup> **-wo** uta-e-mo] si-na-i.  
Taro-Top Indet-Nom/-Acc sing-can-Q do-Neg-Prs  
'Taro cannot sing anything.' slightly modified (Kishimoto 2001, 606)

This asymmetry is in fact expected under the phase theory developed in Chomsky (2000, 2001, 2004a) and Nissenbaum (2001).

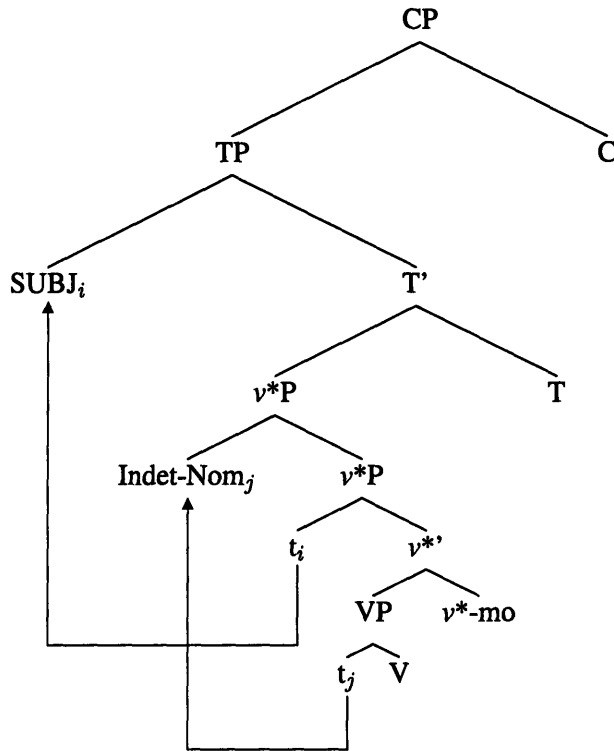
(4.27) Phase Impenetrability Condition (PIC) Chomsky (2001)

In phase  $\alpha$  with head H, the domain of H is not accessible to operations outside  $\alpha$ , only H and its edge are accessible to such operations.

If the PIC is on the right track, the only way for a goal element in the lower phase to be accessible to a higher probe is for the former to be moved to the edge of the lower phase. Following Chomsky (2004a) (also Hiraiwa 2001b, to appear), I assume that T does not probe until C is merged.

It follows from the PIC that the nominative object must be moved to the edge of the  $v^*P$  phase in order to have its uCase valued by the C-T. This has two consequences. First, the nominative object remains within  $v^*P$  and hence the Proper Binding Condition effects in (4.13) are accounted for as a failure to pied-pipe the nominative object.<sup>7</sup> Second, since it is moved to the edge of  $v^*P$  and hence out of the c-command domain of the Q-particle *-mo* attached to  $v^*$ , Indeterminate-Agreement fails.

<sup>7</sup>Or in order to derive the order, the nominative object has to be scrambled out of the edge of  $v^*P$ , leaving a copy, which triggers PBC effects in (4.13). See Hiraiwa (2003c) for extensive discussion of the PBC in Japanese.

(4.28) Indeterminate Nominative Object Raised to the Edge of the  $v^*P$  Phase

## 4.3.2 More against Prolepsis/Control

One of the important consequences of the analysis of RTO/ECM presented above is that it provides us with solid evidence that the Prolepsis/Control/Major Object analyses (Saito 1985, Oka 1988, Hoji 1991) are not sufficient. The reason is, as we have seen, that the indeterminate ECMed subject can license Indeterminate-Agreement with the Q-particle attached to the embedded complementizer. This demonstrates that the accusative embedded subject must be within the *c*-command domain of the Q-particle attached to the complementizer *-to*. In contrast, it is totally unexpected under the prolepsis analysis, since the accusative element is base-generated in the matrix clause.

(4.29) further strengthens our conclusion. A true control construction cannot license Indeterminate-Agreement. This is expected under our generalization (4.16), since in (4.29b) the indeterminate is a matrix element and hence is not in  $cd(Q)$ .

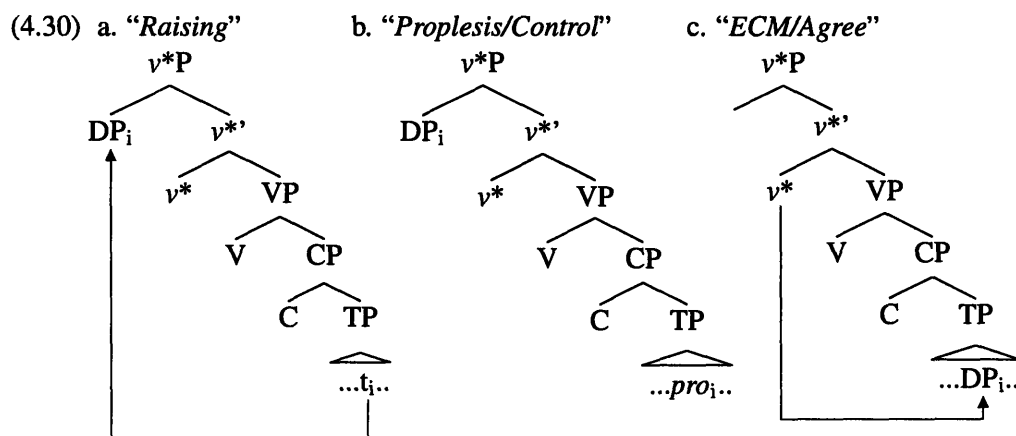
(4.29) Japanese:

- a. Taro-wa Hanako-ni<sub>i</sub> [PRO<sub>i</sub> MIT-ni iku koto]-wo susume-ta.  
Taro-Top Hanako-Dat MIT-Dat go C-Acc recommend-Pst  
'Taro recommended that Hanako go to MIT.'
- b. \*? Taro-wa dare-ni<sub>i</sub> [PRO<sub>i</sub> MIT-ni iku koto]-mo susume-nakat-ta.  
Taro-Top Indet-Dat MIT-Dat go C-Q recommend-Neg-Pst  
'Taro did not recommend that anyone go to MIT.'



(4.29) in turn demonstrates that (i) the Indeterminate-Agreement diagnoses for the original position of an indeterminate NP and (ii) the RTO construction at least allows the derivation of (4.30b), in which an ECMed element remains downstairs via Agree.

It is important, however, to note that it still does not tell us whether the derivation of the RTO which involves overt raising into the matrix clause is “raising” (4.30a) or “prolepsis” (4.30b). Both derivations are logically possible.



Thus in order to complete our claim for (29a) and (29c) over (29b), it is necessary to seek other evidence. Such evidence comes from Proper Binding Condition (PBC) effects (cf. Saito 1989). RTO shows PBC effects, while genuine control constructions do not (cf. Kuno 1976).

(4.31) Japanese:

- a. Taro-wa Hanako-ni<sub>j</sub> [PRO<sub>j</sub> Boston-e iku-koto]-wo meiji-ta.  
 Taro-Top Hanako-Dat Boston-to go-C-Acc order-Pst  
 ‘Taro ordered Hanako to go to Boston.’
- b. [<sub>CP</sub> PRO<sub>j</sub> Boston-e iku koto]-wo<sub>i</sub> Taro-wa Hanako-ni<sub>j</sub> t<sub>i</sub> meiji-ta.  
 Boston-to go C-Acc Taro-Top Hanako-Dat order-Pst  
 ‘Taro ordered Hanako to go to Boston.’

(4.32) Japanese:

- a. Taro-wa Hanako-wo<sub>i</sub> (orokanimo) t<sub>i</sub> baka da to omot-ta.  
 Taro-Top Hanako-Acc stupidly stupid Cpl.Prs C think-Pst  
 ‘(Stupidly,) Taro considered Hanako to be stupid.’
- b. \*? [<sub>CP</sub> t<sub>i</sub> baka da to<sub>j</sub>] Taro-wa Hanako-wo<sub>i</sub> (orokanimo) t<sub>j</sub> omot-ta.  
 stupid Cpl.Prs C Taro-Top Hanako-Acc stupidly think-Pst  
 ‘(Stupidly,) Taro considered Hanako to be stupid.’

In the genuine control constructions such as (4.31), fronting the embedded CP containing the PRO controllee does not cause any problem, as shown in (4.31b). In the ECM/RTO construction

(4.32), on the other hand, fronting the embedded CP containing the trace/copy of the ECMed subject results in ungrammaticality, as in (4.32b).

The robust contrast between (4.31b) and (4.32b) indicates not only that RTO is not a control construction but, more significantly, that the derivation of RTO never allows the control option.<sup>8</sup>

Summarizing the discussions so far, I have demonstrated, based on Indeterminate-Agreement, that RTO across a CP exists in Japanese and its derivation is uniformly “raising”, never “control”. The raising is optional in RTO and hence Case is not licensed in a structural Spec-Head configuration (see Chomsky 2000, Hiraiwa to appear, and Chapter 2).

### 4.3.3 Interim Summary

To recapitulate the conclusions so far, we have demonstrated the following.

- (4.33)
- a. Kishimoto’s (2001) theory of Indeterminate-Agreement is empirically insufficient. Instead, we have proposed a refined theory of Indeterminate-Agreement that is both empirically and conceptually adequate.
  - b. Case assignment involves Agree (or similar mechanisms).
  - c. The so-called Raising-to-Object/ECM construction in Japanese cannot be an instance of Prolepsis/Control/Major Object.

## 4.4 Phases and Successive Cyclic Raising

### 4.4.1 RTO, Phases, and the Edge

Now having established that RTO in Japanese is an (optional) raising construction, never a control construction, I propose a theory of RTO across a finite CP.

It has been observed that A-operations cannot apply beyond a finite CP boundary. Chomsky (1973) attributes this to Tensed-S Condition. As it is often noted, it can be also reduced to the “Chain Condition” on Case (Chomsky 1986), which prohibits double Case-marking. Recently, Chomsky (2000, 2001, 2004a) has proposed the Phase Impenetrability Condition (PIC), repeated here again.

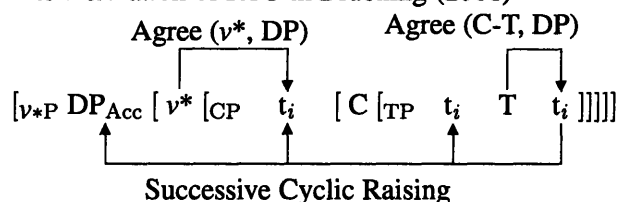
- (4.34) Phase Impenetrability Condition (PIC) Chomsky (2001)

In phase  $\alpha$  with head H, the domain of H is not accessible to operations outside  $\alpha$ , only H and its edge are accessible to such operations.

The PIC prevents a higher probe from accessing a goal in a lower phase, unless the latter is moved to the edge of the lower phase. So one expects an ECMed element in RTO to be first dislocated to the edge of the embedded CP clause, at which position it Agrees with  $v^*$ , deriving the Tensed-S Condition effects. I argue that this is in fact true. The derivation of RTO in Japanese consists of the following three operations:

<sup>8</sup>See Kuno (1976) for an idiom chunk test and other arguments for raising.

## (4.35) The Derivation of RTO in Bruening (2001)



In this derivation, the embedded subject DP first Agrees with the embedded T and then undergoes dislocation to the edge of CP, where it again Agrees with  $v^*$ , having its uCase valued as Accusative.

Bruening (2001) has proposed exactly this derivation, assuming with Pesetsky and Torrego (2001) that valuation of Case (or deletion of uCase) is done at Spell-Out/Transfer; thus an element can in principle enter into multiple Agree relations as long as it is dislocated to the edge of a phase and escapes “inactivation” by Spell-Out/Transfer.<sup>9</sup>

Now let us return to Cuzco Quechua, repeated here as (4.36).

## (4.36) Cuzco Quechua (Lefebvre and Muysken 1988, 144, Claire. Lefebvre p.c.)

- a. Maryyacha numa-n Xwancha-q\*(-ta) platanu ranti-na-n-ta.  
 Maria want-3 Juan-Gen-Acc banana exchange-Nml-3-Acc  
 ‘Maria wants Juan to buy bananas.’
- b. Maryyacha Xwancha-q\*(-ta)<sub>i</sub> numa-n t<sub>i</sub> platanu ranti-na-n]-ta.  
 Maria Juan-Gen-Acc want-3 banana exchange-Nml-3-Acc  
 ‘Maria wants Juan to buy bananas.’

Cuzco Quechua provides us with direct evidence to choose the PIC over the Case Filter for RTO in Japanese and other languages; in Cuzco Quechua, the history of the syntactic derivation is morphologically recorded and visible in the form of “double Case-marking”. Significantly, as noted earlier, the ECMed embedded subject DP is doubly Case-marked Genitive (from the embedded C-T; see Hiraiwa 2001b) as well as Accusative (from the matrix  $v^*$ ). Furthermore, when the ECMed element is marked Accusative, it obligatorily moves into the matrix clause, in contrast with Japanese, whose raising in RTO is optional, as shown above.<sup>10</sup>

The “Multiple” Case-marking is crucially made possible by dislocation of the DP to the edge of the phase to escape valuation/inactivation. Thus under our theory the availability of RTO across a finite CP is predicted to be contingent on the availability of the “dislocation” operation to the edge.

## (4.37) The availability of “Hyper-Raising” correlates with the availability of the dislocation operation to the articulated CP-edge domain, which correlates with the availability of the articulated CP domain (cf. Rizzi 1997).

<sup>9</sup>There is a nontrivial issue about the possibility that DP in Japanese also has two uCases like Cuzco Quechua. There is at least no morphological clue to this possibility.

<sup>10</sup>Multiple Case-Marking is rare but can still be found in some languages. See Bejar and Massam (1999) and McCreight (1988) for multiple Case-marking phenomena in Nieuuan and other languages.

On this approach, the only significant differences between Japanese and Cuzco Quechua are that the morphological reflex of double Case-marking is suppressed in Japanese but not in Cuzco Quechua and that in the latter, raising into the matrix clause is forced but in the former it is just optional. The first issue will be addressed in this section and the latter –the raising asymmetry– is discussed in Section 4.5. In the remainder of this section, I will focus on the exact derivation –particularly, movement steps and positions– of Raising-to-Object.

One piece of evidence that an ECMed DP is dislocated to [Spec, CP], the edge position of the CP phase, comes from an interaction of Case-marking and modals.

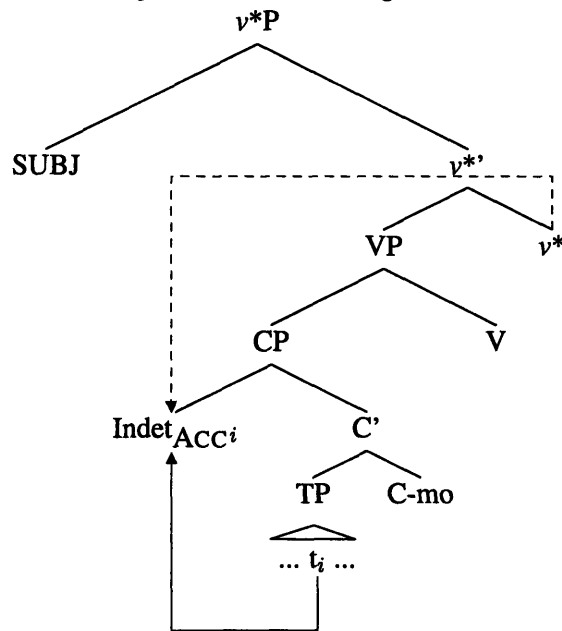
(4.38) Japanese:

- a. Taro-wa **Hanako-wa/wo/\*ga** baka da-naa to omot-ta  
 Taro-Top Hanako-Top/Acc/Nom stupid Cpl-M C think-Pst  
 ‘Taro thought that Hanako was stupid.’
- b. Taro-wa **dare-wo/\*ga** baka da-naa to-mo omowa-nak-ta.  
 Taro-Top Indet-Acc/Nom stupid Cpl-M C-Q think-Neg-Pst  
 ‘Taro did not think that anyone was stupid.’

(4.38a) and (4.38b) show that a sentence final modal *-naa* is incompatible with the nominative subject, whereas it is perfectly compatible with a topicalized subject or an ECMed accusative subject. I take this parallel between a topicalized DP and an ECMed DP to be an indication of structural parallelism.

A careful consideration of the derivation, however, brings to light one significant question. As we have proposed in (4.16), the Q-particle must *c*-command the head of the chain of the indeterminate before Transfer. That’s why the nominative object, being dislocated to the edge of  $v^*P$ , cannot license Indeterminate-Agreement in (4.28). Now, if we take this to be literally true with the CP edge, there will be a contradiction: phase theory demands that the ECMed indeterminate subject be dislocated to the edge of CP, but why does it license Indeterminate-Agreement with the Q-particle attached to C?

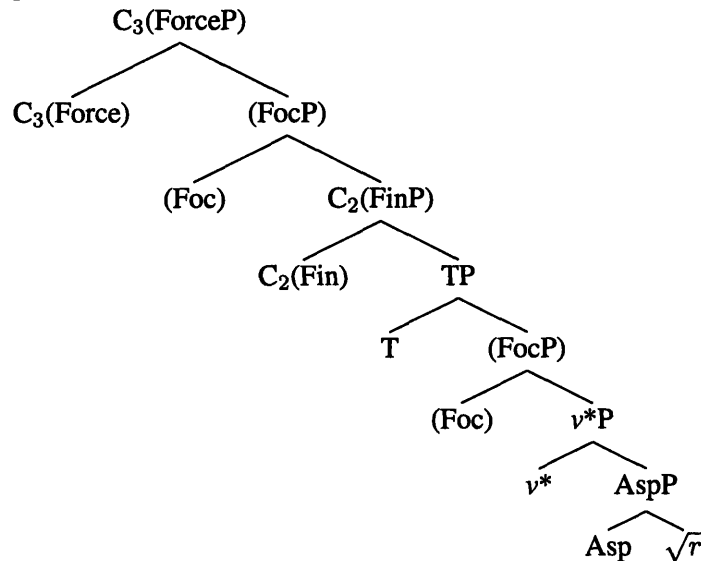
(4.39) ECMed Subject Raised to the Edge of the CP Phase



4.4.2 The Layered C Structure and v\*-Asp Relation

I propose that the key to solving this paradox is the articulated Left Periphery of CP (Rizzi 1997). Rizzi argues that the functional heads of the left periphery are richer than we have assumed.

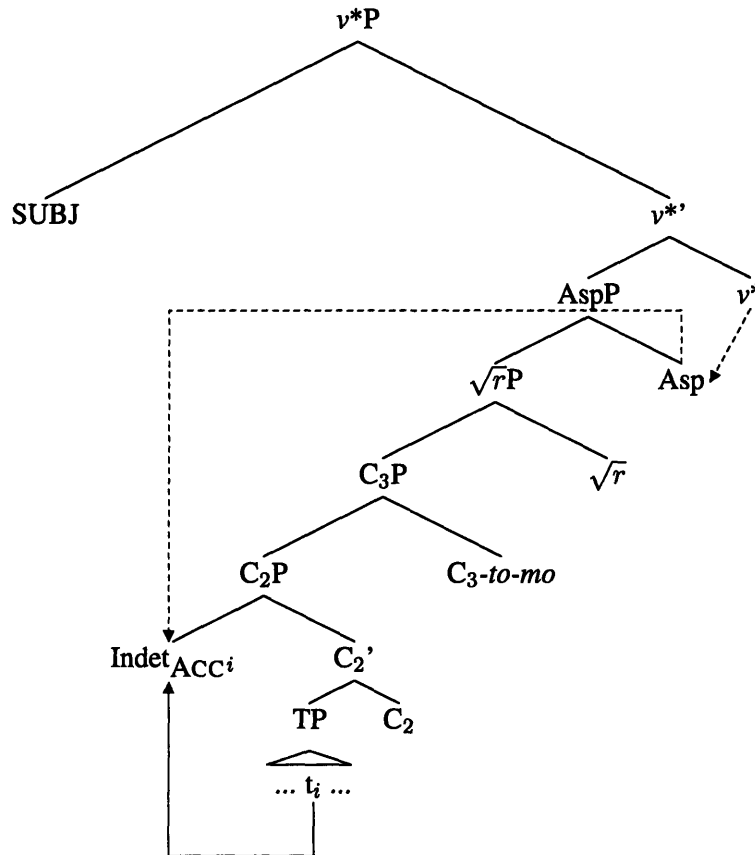
(4.40) Split CP-TP Structure



In this structure, the CP has a layered C structure:  $C_2$  and  $C_3$ . I propose that the Q-particle *-mo* attaches to  $C_3$ , while the ECMed subject DP undergoes movement to the edge of  $C_2$ P. In this con-

figuration, the Q-particle still *c*-commands the indeterminate and hence Indeterminate-Agreement is licensed. I assume here that  $C_3$  is not a strong phase head. I will turn to this soon in the next section.

(4.41) ECMed Subject Raised to the Edge of the  $C_2$ P Phase



Now one prediction is that if an indeterminate is dislocated to the edge of the higher CP left periphery, Indeterminate-Agreement between the indeterminate and the Q-particle attached to the  $C_3$  should be blocked. This is indeed borne out.

Long-distance scrambling has been known to target an  $\bar{A}$ -position –namely [Spec, CP] (Saito 1992, Miyagawa 1997). In Hiraiwa (2003c), I have further refined this observation by showing that the element undergoing long-distance scrambling targets the left-most –“the edge”– position of the CP domain. Thus long-distance scrambled element must precede a topicalized element (4.42b) and (4.42c).

(4.42) Japanese:

- a. Taro-wa Hanako-ni [Jiro-ga katteni ringo-wo tabe-ta to] iitsuke-ta.  
 Taro-Top Hanako-Dat Jiro-Nom without.permission apple-Acc eat-Pst C tell-Pst  
 ‘Taro said to Hanako that Jiro ate some apples without permission.’

- b. ? **ringo-wo<sub>j</sub>** Hanako-ni-wa<sub>i</sub> Taro-ga t<sub>i</sub> [Jiro-ga katteni t<sub>j</sub> tabe-ta  
apple-Acc Hanako-Dat-Top Taro-Nom Jiro-Nom without.permission eat-Pst  
to] iitsuke-ta.  
C tell-Pst  
'To Hanako, Taro said that Jiro ate some apples without permission.'
- c. \*? Hanako-ni-wa<sub>i</sub> **ringo-wo<sub>j</sub>** Taro-ga t<sub>i</sub> [Jiro-ga t<sub>j</sub> katteni tabe-ta  
Hanako-Dat-Top apple-Acc Taro-Nom Jiro-Nom without.permission eat-Pst  
to] iitsuke-ta.  
C tell-Pst  
'To Hanako, Taro said that Jiro ate some apples without permission.'

Now consider long-distance scrambling of indeterminates.

(4.43) Japanese:

- a. \* boku-wa [Taro-ga [Hanako-ga **dare-ni** at-ta to] sinjitei-ta to-mo]  
I-Top Taro-Nom Hanako-Nom Indet-Dat meet-Pst C believe-Pst C-Q  
omow-anakat-ta.  
think-Neg-Pst  
'I didn't think that Taro believes that Hanako met anyone.'
- b. \* boku-wa [Taro-ga [**dare-ni<sub>i</sub>** Hanako-ga t<sub>i</sub> at-ta to] sinjitei-ta to-mo]  
I-Top Taro-Nom Indet-Dat Hanako-Nom meet-Pst C believe-Pst C-Q  
omow-anakat-ta.  
think-Neg-Pst  
'I didn't think that Taro believes that Hanako met anyone.'
- c. \* boku-wa [**dare-ni<sub>i</sub>** Taro-ga [ Hanako-ga t<sub>i</sub> at-ta to] sinjitei-ta to-mo]  
I-Top Indet-Dat Taro-Nom I Hanako-Nom meet-Pst C believe-Pst C-Q  
omow-anakat-ta.  
think-Neg-Pst  
'I didn't think that Taro believes that Hanako met anyone.'

These sentences have the Q-particle attached to the middle CP clause with the indeterminate originating in the lowest CP clause.

(4.43a) shows that the indeterminate is too far away from the Q-particle (separated by phase boundaries). (4.43b) indicates that Indeterminate-Agreement is still illicit if the indeterminate is moved to the edge of the lowest CP clause. The sentence is still bad since the Q-particle and the scrambled indeterminate are still separated by phase boundaries. Now the ungrammaticality of (4.43c) is quite important. It shows that the indeterminate cannot be licensed even if it is dislocated to the edge of the middle CP-edge position. Recall that there is no problem if the indeterminate is the subject of the middle clause as in (4.44).

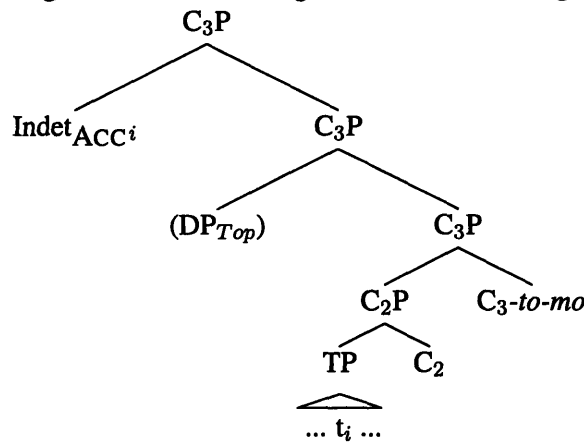
(4.44) Japanese:

? boku-wa [**dare-ga** [Hanako-ga Taro-ni at-ta to] sinjitei-ta to-mo]  
 I-Top Indet-Nom Hanako-Nom Taro-Dat meet-Pst C believe-Pst C-Q  
 omow-anakat-ta.  
 think-Neg-Pst

‘I didn’t think that anyone believes that Hanako met Taro.’

The derivation below explains the ungrammaticality of (4.43c).

(4.45) Long-Distance Scrambling and Indeterminate-Agreement



The indeterminate has been moved to the left edge of the second CP clause. Since, as evidenced by (4.42c), the landing position of the long-distance scrambled element is the left edge of the clause, it is [Spec,  $C_3P$ ]. Since this position is outside the domain of the Q-particle attached to  $C_3$ , the Indeterminate-Agreement is illicit in (4.43c).

Now turning to the case where actual raising occurs, the same question arises: if RTO-movement targets the edge of  $v^*P$ , it is expected that the Indeterminate-Agreement with the Q-particle attached to  $v^*$  is blocked as it is in the nominative object construction (4.12). The prediction is indeed true; the raised indeterminate, preceding the matrix subject floating quantifier (4.46a) or adverb (4.46b), cannot establish Indeterminate-Agreement with the Q-particle on  $v^*$ .

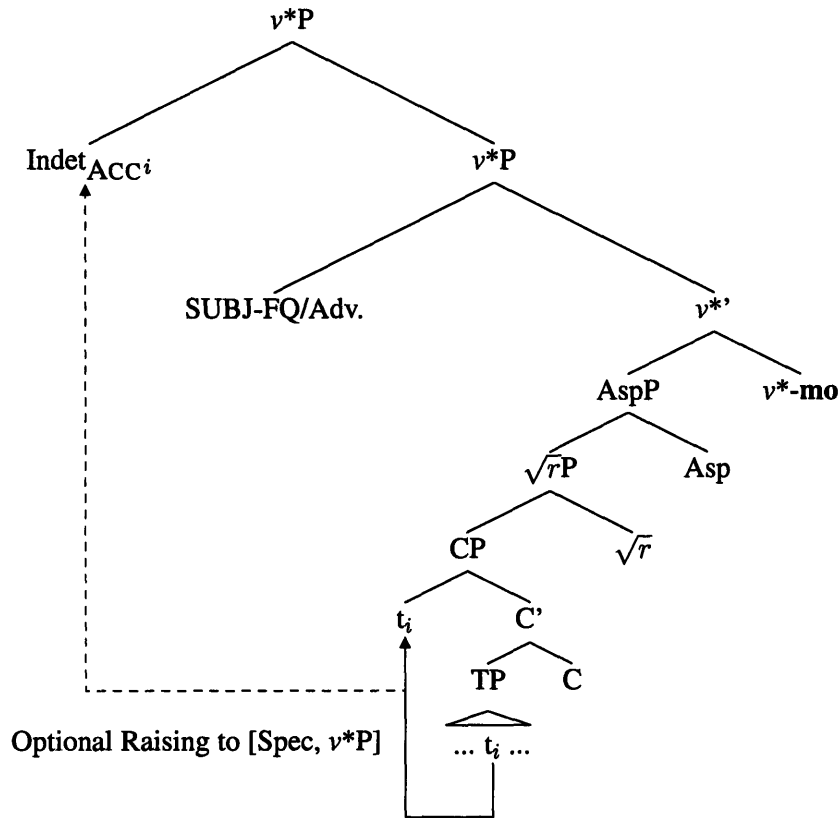
(4.46) Japanese:

- a. \* karera-wa **dare(-no-koto)-wo**<sub>i</sub> zen-in  $t_i$  baka da to omoi-mo si-nakat-ta.  
 they-Top Indet(-Gen-thing)-Acc all stupid Cpl C think-Q do-Neg-Pst  
 ‘All of them didn’t consider anyone to be stupid.’
- b. \* Taro-wa **dare(-no-koto)-wo**<sub>i</sub> orokanimo  $t_i$  baka da to omoi-mo si-nakat-ta.  
 Taro-Top Indet(-Gen-thing)-Acc stupidly stupid Cpl C think-Q do-Neg-Pst  
 ‘Stupidly, Taro didn’t consider anyone to be stupid.’



Thus this is consistent with the standard assumption that Object Shift is a movement to [Spec,  $v^*P$ ].

## (4.47) Raising-to-Object



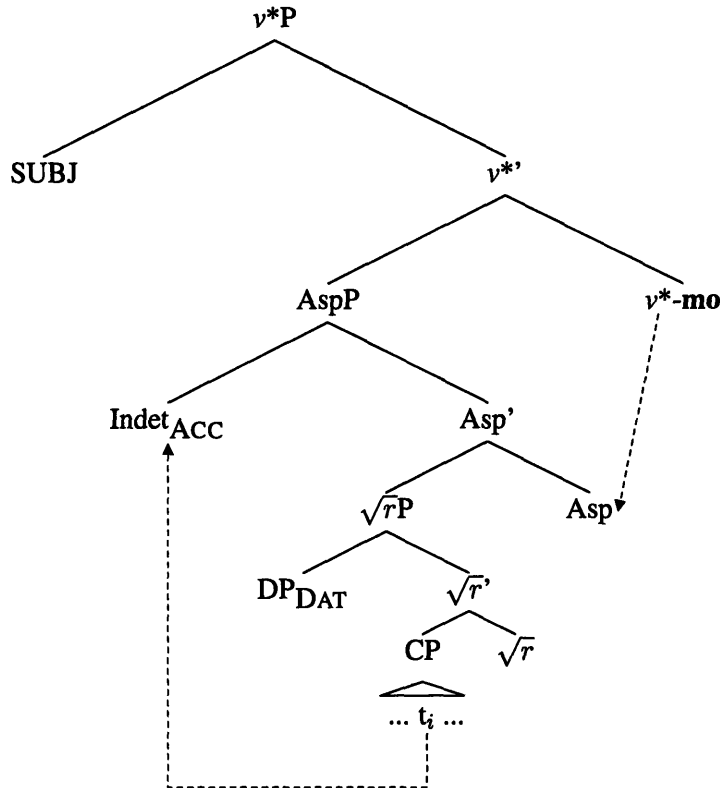
There is a case, however, that shows that the raised subject lands at a lower position. In (4.48a), the raised subject precedes the matrix dative argument. Significantly, in this case, Indeterminate-Agreement becomes licit as shown in (4.48b).

## (4.48) Japanese:

- a. Taro-wa boku-no-koto-wo; Hanako-ni  $t_i$  baka da to ii-mo si-nakat-ta.  
 Taro-Top I-Gen-thing-Acc Hanako-Dat stupid Cpl C say-Q do-Neg-Pst  
 'Taro didn't even tell Hanako that I was stupid.'
- b. Taro-wa **dare-no-koto-wo**; Hanako-ni  $t_i$  baka da to ii-mo si-nakat-ta.  
 Taro-Top Indet-Gen-thing-Acc Hanako-Dat stupid Cpl C say-Q do-Neg-Pst  
 'Taro didn't tell Hanako that anyone was stupid.'

This suggests that the landing site of the raised subject in RTO is actually lower than the edge of  $v^*P$ . The most natural possibility is that raising targets the edge of AspP.

(4.49) Raising-to-Object (A new framework)

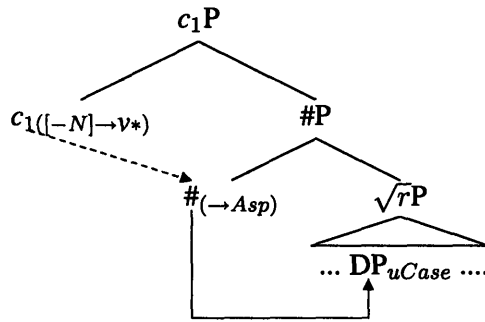


In (4.49), the raised indeterminate still remains in the  $cd(Q)$  and hence can license Indeterminate-Agreement. In (4.47), on the other hand, the indeterminate has undergone displacement to the edge of  $v^*P$ , which precedes the positions for the external subject and the  $v^*P$  adverb.

The interesting question is why the raising-to-object operation is able to attract the goal to the edge of VP but not to the edge of  $v^*P$ . Chomsky (2004b) has recently suggested an insightful solution to the problem of Koizumi's Split VP Hypothesis (Koizumi 1993, 1995). Chomsky argues that just as T and C probe as a whole,  $v^*$  and # also probe as a unit and hence # attracts an A-chain element. Translating the idea into our terms, the theory of Case is summarized as follows.

- (4.50) a. Nominative Case is valued by  $c_2$ -T.  
 b. Accusative Case is valued by  $c_1$ -#.

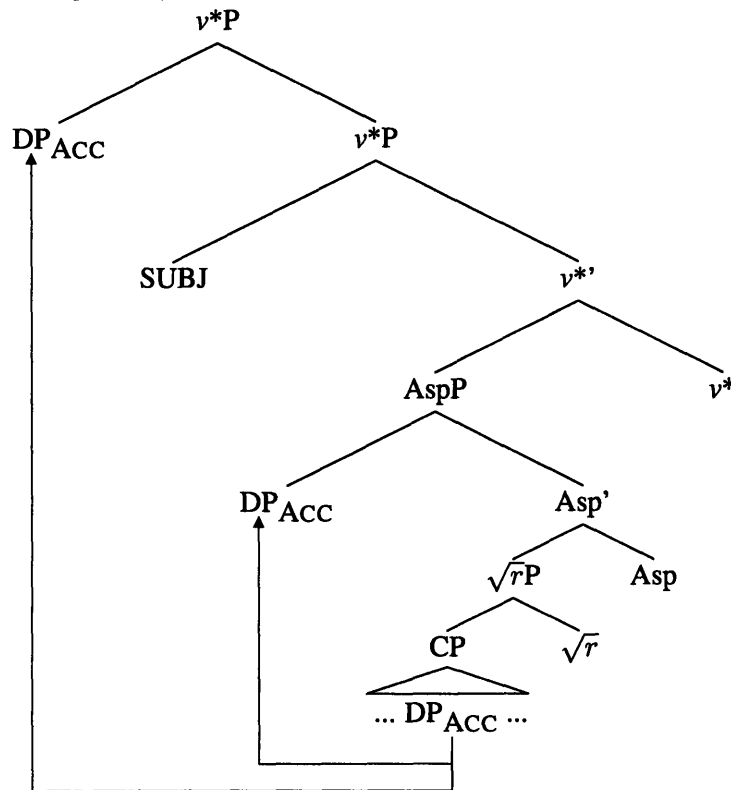
(4.51) The  $c$ - $\tau$  Theory of Case: Accusative Case Assignment as  $v^*$ -Asp Relation



Chomsky further puts forward the parallelism and proposes that the EPP of  $C/v^*$  is passed down to T and V, respectively. If this is on the right track, object shift is expected to target the edge of “VP”, just as movement of the subject targets the edge of “TP”. This explains why in (4.49), the movement of the ECMed DP to the edge of AspP is possible.

Drawing a further parallelism under the PTPD, the derivation of Raising-to-Object should involve the following steps, with raising to [Spec,  $v^*$ P] optional.

(4.52) Raising-to-Object (A new framework)



### 4.4.3 Optionality, Case, and Tense

The cartographic approach outlined above has shown that RTO/ECM in Japanese involves movement to the edge of  $C_2P$ . This explains the behaviors of indeterminates in RTO/ECM in Japanese.

The theory, however, has only partially answered a more fundamental question about the mechanisms of RTO/ECM. In Japanese, as in Cuzco Quechua and Modern Greek, RTO is optional. That is, the embedded subject is marked either Accusative or Nominative. Furthermore, Japanese apparently disallows “multiple Case-marking” unlike Cuzco Quechua. So what makes the RTO/ECM possible in terms of Case? In particular, why can a DP that originates within a lower finite clause Agree with a higher probe?

There is an asymmetry in tense between ECM/RTO and the nominative counterpart. At first glance, the predicate of the ECM/RTO clause can take either a present form or a past form. There is some speaker variation, but (4.53b) are not totally unacceptable.

(4.53) Japanese:

- a. Boku-wa **Hanako-ga/wa** **kawai-i/kawaikat-ta** to omot-ta.  
1Sg.-Top Hanako-Nom/Top pretty-Prs/pretty-Pst C think-Pst  
'I thought that Hanako was pretty.'
- b. Boku-wa **Hanako(-no-koto)-wo** **kawai-i/?kawaikat-ta** to omot-ta.  
1Sg.-Top Hanako(-Gen-matter)-Acc pretty-Prs/pretty-Pst C think-Pst  
'I thought that Hanako was pretty.'

A careful investigation, however, soon reveals that it is not the case that tense is freely allowed in RTO/ECM complement clauses. The past tense on the embedded predicate is allowed only when the matrix tense is also past. If we change the tense of the matrix, the past tense downstairs becomes ungrammatical when ECM/RTO occurs, as shown in (4.54b).

(4.54) Japanese:

- a. Boku-wa **Hanako-ga/wa** **kawai-i/kawaikat-ta** to omo-u.  
1Sg.-Top Hanako-Nom/Top pretty-Prs/pretty-Pst C think-Prs  
'I think that Hanako was pretty.'
- b. Boku-wa **Hanako(-no-koto)-wo** **kawai-i/\*?/??kawaikat-ta** to omo-u.  
1Sg.-Top Hanako(-Gen-matter)-Acc pretty-Prs/pretty-Pst C think-Prs  
'I think that Hanako was pretty.'

Furthermore, it is worth pointing out that in (4.53), tense interpretations differ. In (4.53a), the past tense may refer to either the time identical to the matrix past tense or the time preceding the matrix time. In (4.53b), however, the past tense of the embedded predicate can only refer to the same time as the matrix past tense. Thus in (4.53b), there is no semantic difference in terms of tense.

The contrast becomes even clearer if we consider the tense patterns under Indeterminate-Agreement.

(4.55) Japanese:

- a. Boku-wa **dare-ga** **kawai-i/kawaikat-ta** to-mo omow-ana-i.  
 1Sg.-Top Indet-Nom pretty-Prs/pretty-Pst C think-Neg-Prs  
 'I don't think think that anyone was pretty.'
- b. Boku-wa **dare(-no-koto)-wo** **kawai-i/\*kawaikat-ta** to-mo omow-ana-i.  
 1Sg.-Top Indet(-Gen-matter)-Acc pretty-Prs/pretty-Pst C think-Neg-Prs  
 'I don't think that anyone was pretty.'

Here, the past tense in the ECM clause is quite bad, when the matrix tense is present.

A similar, but not identical, situation has been observed for Modern Greek in Iatridou (1988/1993). She observes that when the embedded subject gets Accusative under ECM/RTO in Modern Greek, the embedded predicate cannot take a past form, while either present or past tense is allowed for non-RTO/ECM complements.

(4.56) Modern Greek (Iatridou 1988/1993, 176-7)

- a. vlepo ton Kosta na **tiganizi** psaria.  
 see D Kosta(Acc) NA fries fish  
 'I see Kostas fry fish.'
- b. \* vlepo ton Kosta na **tiganize** psaria.  
 see D Kosta(Acc) NA fried fish  
 '(Lit.) I saw Kostas fried fish.'

(4.57) Modern Greek (Iatridou 1988/1993, 176-7)

- a. elpizo o Kostas na **tiganizi** psaria.  
 hope D Kosta(Nom) NA fries fish  
 'I hope Kostas fries fish.'
- b. elpizo o Kostas na **tiganise** psaria.  
 hope D Kosta(Nom) NA fried fish  
 'I hope Kostas fried fish.'

These indicate that Case in Japanese and Modern Greek is also sensitive to Tense, not only to Agreement (see Iatridou (1988/1993) for detailed discussions on Greek). Reconsidered in the present framework, I propose that the (un)availability of the past tense on the embedded predicates in (non-)ECM/RTO reduces to optional choice of Tense on  $c_3$ .

(4.58) Tense on T comes from C. (cf. Koster 2003)<sup>11</sup>

(4.59) Nominative is valued by  $C_{+T/u\phi-T}$ .

Irish provides visible evidence for the claim that C is tense-related. McCloskey (1979) shows that in embedded clauses in Irish, the complementizer changes its form depending on the Tense value.

<sup>11</sup>den Besten (1978, 1983) observes that C is the locus of tense operators. See also Koster (2003).

- (4.60) Irish (McCloskey 1979)
- a. Deir sé goN dtuigeann sé an scéal.  
says he C understands he the story  
'He says that he understands the story.'
- b. Deir sé gurL thuig sé an scéal.  
says he C understands he the story  
'He says that he understood the story.'

Thus the optionality reduces to two derivations one with  $C_{+T}$  and the other  $C_{-T}$ . Raising out of the finite CP clause does not give rise to Case problems because of the asymmetry of tense feature distribution between these two types of C. When C comes with [+T], the  $C_2$ -T probe is capable of assigning nominative Case in its domain and hence no ECM/RTO takes place. If, on the other hand, C comes with [-T], the  $C_2$ -T system is unable to value uCase of a goal in its domain. Hence, the goal DP is dislocated to the edge of  $C_2$ P and Agrees with the higher  $v$ -Asp probe. The proposed theory, if correct, makes a contribution to the PIC: what initially appears to violate the PIC does obey it through dislocation to the edge.

One remaining problem is how a higher probe can Agree with and assign a Case value to an element at the edge of  $C_2$ P, crossing the  $C_3$ P. If  $C_3$  is a strong phase head, this should be impossible. I just suggest here that the distinction between strong and weak phase heads may be related to the presence/absence of Tense on  $C_3$ . If it comes with Tense, it becomes a strong phase head, while if Tense is missing, it becomes a weak phase head. Another issue is why there are languages that do not allow raising out of CP clauses (e.g. English). I suggest that the difference may reduce to the availability of scrambling. In scrambling languages like Japanese and Cuzco Quechua, C can have EPP<sup>12</sup>. This, as I argued, results in dislocation to the edge, which is saved from the PIC. A further cross-linguistic confirmation is necessary in future investigation (see also Ura 1994).

#### 4.4.4 No "Super Long-Distance" Agree

The proposed phase-based theory of RTO predicts that RTO across a finite CP should be impossible across more than one CP phase boundary due to the PIC. For example, (4.61) is structurally ambiguous between (4.62a) and (4.62b), but the prediction is that the derivation of (4.61) is (4.62a) but not (4.62b).

(4.61) Japanese:

Taro-wa Hanako-wo baka da to omow-arete-iru to omotte-iru.  
Taro-Top Hanako-Acc stupid Cpl C think-PASS-Prs C think-Prs

'Taro believes Hanako to be believed to be stupid.'

(4.62) a.  $[v_{*P} v^* [CP_1 DP_{Acc,i} C [TP \dots [CP_2 t_i C [t_i \dots ]]]]]$

<sup>12</sup>Miyagawa (2001) argues that A-scrambling in Japanese is driven by EPP. It seems natural to extend this view of EPP-scrambling to C, perhaps with a distinction of A/ $\bar{A}$ -scrambling reduced to the edge/non-edge distinction.

- b.  $[v^*P \ v^* \ [CP_1 \ C \ [TP \dots \ [CP_2 \ DP_{Acc,i} \ C \ [t_i \dots \ ]]]]]$
- 

This prediction is in fact borne out. When the ECMed indeterminate is bound to the lower clause (4.63b), Agree ( $v^*$ , Indet) fails and accusative Case cannot be assigned, whereas Agree ( $v^*$ , Indet) is licit when it is bound to the higher embedded CP (4.63a).

(4.63) Japanese:

- a. Taro-wa  $[CP_1 \ \mathbf{dare-wo/ga}_i \ [CP_2 \ t_i \ \mathbf{baka \ da \ to}] \ \mathbf{omow-arete-iru \ to-mo}]$   
 Taro-Top Indet-Acc/Nom stupid Cpl C think-PASS-Prs C-Q  
 omottei-na-i.  
 think-Neg-Prs  
 ‘Taro thinks that no one is thought to be stupid.’
- b. Taro-wa  $[CP_1 \ [CP_2 \ \mathbf{dare-wo/ga}_i \ \mathbf{baka \ da \ to-mo}] \ \mathbf{omow-aretei-na-i \ to}]$   
 Taro-Top Indet-Acc/Nom stupid Cpl C-Q think-PASS-Neg-Prs C  
 omotte-iru.  
 think-Prs  
 ‘Taro thinks that it is thought that no one is stupid.’

## 4.5 Varieties of Raising

If our syntactic generalization of Indeterminate-Agreement is correct, then Indeterminate-Agreement provides us with a solid tool to detect overt raising out of a domain headed by the Q-particle. In this final section, I examine varieties of raising constructions through applications of Indeterminate-Agreement.

### 4.5.1 Raising Types

#### 4.5.1.1 Raising-to-Subject

I have claimed that an indeterminate cannot be moved out of  $cd(Q)$ . The same is true of Raising-to-Subject (RTS; (4.64)) as well, as shown by Indeterminate-Agreement in (4.65). When the raised subject precedes the matrix experiencer argument (4.65a), Indeterminate-Agreement is blocked, while it is licit when the raised indeterminate subject follows the experiencer (4.65b).

(4.64) Japanese: Raising-to-Subject

- a. **Hanako-ga**<sub>i</sub> minna-ni  $[t_i \ \mathbf{wagamama-ni}] \ \mathbf{omow-are-ta}$ .  
 Hanako-Nom everyone-by selfish-Inf think-PASS-Pst  
 ‘Hanako seemed to everyone to be selfish.’
- b. Minna-ni  $[\mathbf{Hanako-ga} \ \mathbf{wagamama-ni}] \ \mathbf{omow-are-ta}$ .  
 everyone-by Hanako-Nom selfish-Inf think-PASS-Pst  
 ‘Hanako seemed to everyone to be selfish.’

## (4.65) Japanese: Raising-to-Subject and Indeterminate-Agreement

- a. \* **Dare-ga**<sub>i</sub> minnna-ni [ t<sub>i</sub> wagamama-ni]-**mo** omow-aretei-na-i.  
 Indet-Nom everyone-by selfish-Inf-Q think-PASS-Neg-Prs  
 ‘No one seemed to everyone to be selfish.’
- b. Minna-ni [**dare-ga** wagamama-ni]-**mo** omow-aretei-na-i.  
 Taro-by Indet-Nom selfish-Inf-Q think-PASS-Neg-Prs  
 ‘No one seems to everyone to be selfish.’

One might wonder what happens to the EPP of T when raising-to-subject does not occur above. Whatever the explanation is, however, the facts seem to indicate that EPP is optional for unaccusative/passive predicates in Japanese. Kuroda (1978) points out that Japanese has a kind of null expletive construction in which no overt counterpart is found.

## (4.66) Japanese:

Sigurete-ki-ta.  
 shower-start-Pst

‘It started to shower.’ (Kuroda 1978)

The following impersonal passive example further shows that the sentence is fine even if there is no subject.

## (4.67) Japanese:

Kaigi-de(-wa) [department-no samazamana mondai]-nituite hanasiaw-are-ta.  
 meeting-at(-Top) department-Gen various problems-about talk-PASS-Pst

‘(Lit.) It was discussed about various problems of the department at the meeting.’

## 4.5.1.2 Possessor Raising

It should be noted that Indeterminate-Agreement is blocked in the Possessor Raising construction.<sup>13</sup> In (4.68a), the inalienable possessor is marked Genitive and it forms a constituent with the possessee. Hence the adverb cannot intervene. In (4.68b), on the other hand, the inalienable possessor is marked Accusative and it is raised out of the host possessee DP. This is indicated by the fact that it can precede the adverb.

## (4.68) Japanese: Possessor Raising

- a. Taro-wa [DP **Hanako-no** (\*tsuyoku) te]-wo/-mo tatai-ta.  
 Taro-Top Hanako-Gen hard hand-Acc/-also hit-Pst  
 ‘Taro hit Hanako’s hand (hard).’

<sup>13</sup>Possessor Raising has been assumed –wrongly in my view– to be missing in Japanese because of the so-called *Double-o Constraint*. See Kuroda (1988, 1992) and in particular Hiraiwa (2002b) for full discussions on the nature of the constraint and a discovery of the existence of Possessor Raising in Japanese.



- b. Taro-wa **Hanako-wo<sub>i</sub>** (tsuyoku) [DP t<sub>i</sub> te]-<sup>??</sup>wo/-mo tatai-ta.  
 Taro-Top Hanako-Acc hard hand-Acc/-also hit-Pst  
 ‘Taro hit Hanako’s hand (hard).’

Now Indeterminate-Agreement reveals that this movement out of the DP –“possessor raising”– is obligatory when the possessor is marked Accusative. In other words, the possessor cannot Agree with  $v^*$  from within the edge of the DP.

(4.69) Japanese:

- a. Taro-wa [DP **dare-no** te]-**mo** tataka-nakat-ta.  
 Taro-Top Indet-Gen hand-Q hit-Neg-Pst  
 ‘Taro did not hit anyone’s hand.’
- b. \* Taro-wa **dare-wo<sub>i</sub>** [DP t<sub>i</sub> te]-**mo** tataka-nakat-ta.  
 Taro-Top Indet-Acc hand-Q hit-Neg-Pst  
 ‘Taro did not hit anyone’s hand.’

#### 4.5.1.3 Light-Verb Constructions

The same is observed for the Light-Verb construction (Kageyama 1993, Saito and Hoshi 2000). In the Light-Verb construction (4.70),  $v^*$  Agrees with the genitive DP in the specifier of the verbal noun DP and the former DP moves out of the latter DP.

(4.70) Japanese:

- a. Taro-wa [VN **Navajo-no** kenkyuu]-wo/-\* $\emptyset$  si-ta.  
 Taro-Top Navajo-Gen study-Acc do-Pst  
 ‘Taro did a study on Navajo (as well).’
- b. Taro-wa **Navajo-wo** [VN t<sub>i</sub> kenkyuu]-<sup>??</sup>wo/-mo/- $\emptyset$  si-ta.  
 Taro-Top Navajo-Acc study-Acc/-also/- $\emptyset$  do-Pst  
 ‘Taro did a study on Navajo (as well).’

Again, when the indeterminate direct object of the verbal noun is marked Accusative, Indeterminate-Agreement shows that it is obligatorily moved out of *cd(Q)* (see (4.71a) and (4.71b)). On the other hand, (4.71c) indicates that Indeterminate-Agreement is licensed if the Q-particle is attached with the light verb *-sur*, which is supposed to be  $v^*$ .

(4.71) Japanese:

- a. Taro-wa [VN **nani-go-no** kenkyuu]-**mo** si-nakat-ta.  
 Taro-Top Indet-language-Gen study-Q do-Neg-Pst  
 ‘Taro did not do a study of any language.’
- b. \* Taro-wa **nani-go-wo<sub>i</sub>** [VN t<sub>i</sub> kenkyuu]-**mo** si-nakat-ta.  
 Taro-Top Indet-language-Acc study-Q do-Neg-Pst  
 ‘Taro did not do a study of any language.’

- c. Taro-wa **nani-go-wo**<sub>i</sub> [VN t<sub>i</sub> kenkyuu]-si-**mo** si-nakat-ta.  
 Taro-Top Indet-language-Acc study-do-Q do-Neg-Pst  
 ‘Taro did not do a study of any language.’

#### 4.5.1.4 CP-Restructuring

Finally, let us consider the CP-restructuring construction discussed in Kuno (2002). As shown in (4.72), the object of the verb ‘speak’ can be assigned regular accusative Case or nominative Case.

(4.72) Japanese:

- a. Taro-wa [<sub>CP</sub> **nihongo-wo** hanas-u koto]-ga/sae deki-ru.  
 Taro-Top Japanese-Acc speak-Inf C-Nom/even can-Prs  
 ‘Taro can speak Japanese.’
- b. Taro-wa **nihongo-ga**<sub>i</sub> [<sub>CP</sub> t<sub>i</sub> hanas-u koto]-ga/sae deki-ru.  
 Taro-Top Japanese-Nom speak-Inf C-Nom/even can-Prs  
 ‘Taro can (even) speak Japanese.’ (Kuno 2002)

Since nominative Case cannot be assigned to the object by the verb as shown in (4.73), the nominative Case in (4.72) comes from the higher matrix T.<sup>14</sup>

(4.73) Japanese:

- Taro-wa **nihongo-wo/\*ga** hanas-u.  
 Taro-Top Japanese-Acc/Nom speak-Prs  
 ‘Taro speaks Japanese.’

Now significantly, (4.74) indicates that Indeterminate-Agreement is licit with accusative whereas it is illicit with nominative.

(4.74) Japanese:

- a. Taro-wa [**nani-go-wo** hanas-u koto]-**mo** deki-na-i.  
 Taro-Top Indet-foreign.language-Acc speak-Inf C-Q can-Neg-Prs  
 ‘Taro cannot speak any foreign language.’
- b. \* Taro-wa **nani-go-ga**<sub>i</sub> [t<sub>i</sub> hanas-u koto]-**mo** deki-na-i.  
 Taro-Top Indet-foreign.language-Nom speak-Inf C-Q can-Neg-Prs  
 ‘Taro cannot speak any foreign language.’

<sup>14</sup>Kuno (2002) independently concludes, based on intonation breaks, that the nominative DP in (4.72) is obligatorily raised into the matrix clause.

### 4.5.2 $\phi$ -over- $\phi$

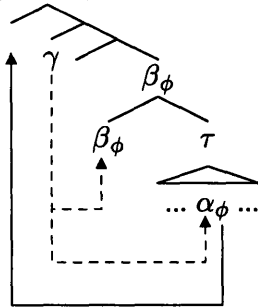
We have two distinct cases of raising: optional raising (RTO/RTS) on the one hand, and forced raising (poss-raising, light-verb constructions, CP-restructuring) on the other. The important question is what principle determines the optionality of raising. Syntactic raising in fact seems to be forced in Object Possessor-Raising cross-linguistically. (cf. Baker 1988, Massam 1985).

I propose the following descriptive generalization.

(4.75) The  $\alpha$ -over- $\alpha$  Generalization

Agree ( $\gamma$ ,  $\alpha$ ) always triggers Move ( $\gamma$ ,  $\alpha$ ), if  $\alpha$  is dominated by  $\beta$ , which also contains a feature matching with the probe  $\gamma$ .

(4.76)  $\phi$ -over- $\phi$  Generalization



(4.75) says that raising of  $\alpha$  out of  $\beta$  is forced in the “A-over-A configuration” (cf. Chomsky 1964) like (4.76), where a probe  $-\phi$ -features of  $\delta$  enters into an Agree relation with a goal  $-\phi$ -features of  $\alpha$  in [Spec,  $\beta$ ], where the head of  $\beta$  also has matching  $\phi$ -features.

Finally, it should be recalled that there is a significant asymmetry between Japanese and Cuzco Quechua: raising in RTO is optional in the former but forced in the latter (see Section 4.3–4.5). This asymmetry is precisely predicted under the  $\phi$ -over- $\phi$  generalization (4.75); the embedded CP out of which RTO occurs is a nominalized clause in Cuzco Quechua and it is a non-nominalized clause in Japanese. The complementizer is nominalized and the whole CP in Cuzco Quechua is Case-marked accusative by the matrix verb, thereby triggering the  $\phi$ -over- $\phi$  effects. In Japanese, on the other hand, the complementizer *-to* is non-nominalized and the CP is Case-less. Therefore, raising is not forced in Agree ( $v^*$ , DP). A theoretical elucidation of the generalization (4.75), however, remains to be investigated in the future.

## 4.6 Concluding Remarks

To summarize the chapter, I have demonstrated, contra Kishimoto (2001), that Indeterminate-Agreement is subject to strict c-command and that the valuation of structural accusative Case is a property of action at a distance Agree ( $v^*$ -Asp, G). One of the important consequences of our conclusion is that it reveals that Raising-to-Object in Japanese involves Agree, not prolepsis or Control (Saito 1985, Hoji 1991, Takano 2003 etc.). I have further argued that syntactic raising of the ECMed subject to the matrix clause is optional and when the raising takes place, it is a two-step process: first, it is raised to the edge of VP and then, if necessary, it moves to the edge of  $v^*$ P. The

derivation adds further support for the claim that Case assignment is a property of a phase head *c* plus a tense/aspect head  $\tau$ : nominative Case C-T and  $v^*$ -Aspect, respectively, and that A-movement targets the positions lower than the phase heads (C/ $v^*$ ).

## Chapter 5

# Head-Internal Relative Clauses

### 5.1 Introduction

In Chapter 3, I have argued that Interweaving under CP/DP Symmetry triggers special Case and agreement patterns on the subject –so called Nominative-Genitive Conversion.<sup>1</sup> In this chapter, I would like to highlight another aspect of CP/DP Symmetry: Multiple Selection and Head-Internal Relative Clauses (HIRC).

It has been long noted that CP (clauses) and DP (nouns) show striking parallelism in a number of syntactic and semantic respects (see Chomsky 1977, Abney 1987, Lefebvre and Muysken 1988, Szabolcsi 1994, Ogawa 2002, Nakanishi 2004 among others). One goal of this chapter is to explain the syntax of HIRC on the basis of an elaborated theory of CP/DP parallelism, based on and extending Rizzi's Left Periphery Theory (Rizzi 1997). Significantly, however, I will further propose that *CP/DP Parallelism feeds Interweaving* as a result of the Supercategorical Theory of the CP/DP Symmetry introduced in Chapter 1.

Relative clauses have attracted exceptionally high levels of attention in the study of natural languages. One reason for this, I believe, lies in the intriguing fact that they realize both nominal ("DP") and sentential ("CP") features simultaneously. Putting it differently, relative clauses are peculiar in that they have rich internal as well as external relations: externally, they behave as DP whereas internally they behave as CPs. And more intriguingly, often these features are interleaved in terms of Case and agreement, verbal morphology, and determiner/complementizer systems (see Chapter 3 for an illustration of Case and agreement systems and their interaction with C). The

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<sup>1</sup>I am very grateful to my Bùlì consultant and co-investigator George Akanlig-Pare for his help, insight and patience. I would also like to thank the following language consultants: Gizel Bougoumpiga for Mooré, Sam Atintono for Gurene, Adams Bodomo for Dàgáárè. I would like to thank Noam Chomsky, Peter Cole, Chris Collins, Victor Manfredi, Lea Nash, David Pesetsky, Norvin Richards, Shoichi Takahashi, and in particular, Akira Watanabe for discussions at the earlier stage of this chapter. Portions of this chapter have been presented at the 78th Annual Meeting of the Linguistic Society of America (January 7-11, 2004, Boston) and at The Syntax of the World's Languages 1 (SWL 1) (August 5-8, 2004, University of Leipzig and Max Planck Institute for Evolutionary Anthropology). I am grateful to the participants for questions and feedback. This chapter also benefited from earlier discussions with the late Ken Hale for whom I am grateful. All the Bùlì and Mooré data, unless otherwise noted, come from sessions at MIT (February-July 2002) and fieldwork in Ghana (March-June 2003 and September 2003 -May 2004). This work has been partially funded by the Ken Hale Fellowship for Linguistic Fieldwork Research, MIT (2003-2004).

relative clause in which properties of CP and DP are most drastically interleaved is the so-called Head-internal Relative Clause, which is the focus of this chapter.

These “interweaving” features are often realized as “nominalization” of CPs. One question to be answered is whether “nominalization” is uniform among languages. Another question is what the nature of the “nominalization” is. Evidently, not every relative clause uses a real nominalizing affix. Some languages use nominalizing complementizers (e.g. Japanese, Chinese, Quechua) and others use determiners (e.g. Bùlì, Mooré, Dagbani, Georgian, Lakhota).

From a theoretical viewpoint, a detailed investigation of relative clauses in languages with rich DP-internal/-external markings provides us with a good touchstone to reveal the array of functional categories involved in CP and DP. Yet another question is the mechanism of HIRC. As noted by Tellier (1989) for Mooré, all the Gur languages that allow HIRC constitute counterevidence for Peter Cole’s generalization that HIRC is restricted to languages with (i) SOV word order and (ii) null pronouns.<sup>2</sup>

The aim of this chapter is two-fold. First, we examine the syntactic properties of HIRC in Bùlì. The second goal is to show how the current theoretical framework provides a principled account for the mechanism of HIRC in Gur. It will be shown that our theory makes fresh sense of the relation between HIRC and Wh/Focus in-situ noted by Kayne (1994) and Watanabe (2003).

The organization of this chapter is as follows: first, Section 5.2 describes the internal syntax of HIRC, focusing on the relativized internal head nouns. Then Section 5.3 turns to the external syntax of HIRC. Section 5.4 is an illustration of the theoretical proposals, building on the Supercategorical Theory of the CP/DP Symmetry. Section 5.6 demonstrates that HIRC comes in two varieties: in-situ HIRC and Left-Headed HIRC. Section 5.7 further argues that in some languages, what look like Head-External Relative Clauses are really internally-headed. Section 5.8 discusses some typological consequences of the results we obtain. Finally, Section 5.10 re-examines Cole’s Generalization in light of the HIRC in Gur languages and explores alternatives. Section 5.11 summarizes the discussion.

The following three chapters of this thesis are built on a detailed study of Bùlì. Bùlì is a Gur language of the Niger-Congo family that is mainly spoken in villages in Northeastern Ghana, West Africa and has approximately 80,000 speakers.<sup>3</sup> Bùlì is an SVO language without scrambling and hence the word order is pretty much fixed. The only word-order-permuting operations are  $\bar{A}$ -movements. In the nominal domain, however, it is head-final. Bùlì has two strategies of relativization, Head-Internal Relative Clauses (HIRC) (5.1a) and what looks like Head-External Relative Clauses (HERC) (5.1b).<sup>4</sup> I leave open here whether (5.1b) is really externally-headed or it is a species of HIRC and defer the discussion until Section 5.6, where I present arguments for the latter structure. Therefore, we will focus on HIRC (5.1a) here.

<sup>2</sup>Williamson (1987, f.n., 9) also notes that Lakhota does not fit with Cole’s theory. See also Tellier (1989) and Gil (2000). We will return to this in the last section of this chapter.

<sup>3</sup>For more information of grammatical aspects of the language, see Kröger (1992), Schwarz (1999, 2002), Akanlig-Pare and Kenstowicz (2003a) and papers therein. For classifications of Gur languages among African languages, see Westermann and Bryan (1952), Greenberg (1963), Naden (1988), and Dakubu (1988) among others

<sup>4</sup>I will use a neutral term “Left-Head RC” just for convenience until Section 5.6, where in fact I will argue that what looks like HERC in some languages, including Bùlì, is actually internally-headed with the head noun dislocated to the left-edge of the relative clause. Hence, the bracketing will not be justified until then

In (5.1a), the embedded subject *Àm̀̀ak* is moved to the left of the complementizer *àlì/àtì* and the head noun of the relative clause *mángò-kū:y* is left in-situ. The right edge of the relative clause is delimited by the distal demonstrative determiner *lá*. (5.1b) differs from HIRC in that the relativized head noun is moved to the left of the complementizer and the subject is left in-situ, presumably in [Spec, TP]. There is no truth-conditional difference between (5.1a) and (5.1b).

(5.1) B̀̀lì<sup>5</sup>

## a. HIRC

Àtìm dè [Àm̀̀ak àlì/\*àtì dà máǹ̀gò-kū:-y dīem lá].  
 Àtìm ate Àm̀̀ak C bought mango-Rel yesterday Dem  
 ‘Àtìm ate the mango that Àm̀̀ak bought yesterday.’

## b. Left-Headed RC

Àtìm dè [máǹ̀gò-kū:-y \*àlì/àtì Àm̀̀ak dà dīem lá].  
 Àtìm ate mango-Rel C Àm̀̀ak bought yesterday Dem  
 ‘Àtìm ate the mango that Àm̀̀ak bought yesterday.’

B̀̀lì does not allow Subject HIRC. As shown below, the relativized subject DP must be dislocated to the left-edge of the relative clause. More generally, the language does not allow operator subjects to remain in-situ under  $\bar{A}$ -dependencies. Hence in the discussions below, I will only use non-subject HIRCs (see Chapter 7 for detailed discussions on the syntax of  $\bar{A}$ -dependencies and for an explanation for the ungrammaticality of subject Operator-in-situ.).

## (5.2) B̀̀lì: \*Subject HIRC

- a. ǹ̀r̀̀wā:y àlì/\*àtì dà máǹ̀gò-kú lá  
 man-Rel C bought mango-D Dem  
 ‘the man who bought the mango’
- b. \* àlì/àtì/∅ ǹ̀r̀̀wā:y dà máǹ̀gò-kú lá  
 C man-Rel bought mango-D Dem  
 ‘the man who bought the mango’
- c. \* máǹ̀gò-kú àlì/àtì ǹ̀r̀̀wā:y dà lá  
 mango-D C man-REL bought Dem  
 ‘the man who bought the mango’

As far as restrictiveness of modification is concerned, both HIRC and Left-Headed RC are clearly restrictive and do not show any truth-conditional semantic difference. The point is made clear by the fact that either HIRC or Left-Headed RC can be used as an answer to a *Wh*-Question in B̀̀lì.

## (5.3) B̀̀lì:

- a. ká máǹ̀gò kú-ná àtì fi dè?  
 F mango Class.Pron.-which C you ate

<sup>5</sup>Complementizer alternation in  $\bar{A}$ -dependencies is discussed in Chapter 7 in detail.

‘Which mango did you eat?’

b. HIRC

̀̀ d̀̀ m̀̀ng̀̀-k̀̀ỳ̀ à̀̀t̀̀ d̀̀ d̀̀m̀̀ l̀̀.  
I ate mango-Rel C Àtìm bought yesterday Dem

‘I ate the mango that Àtìm bought yesterday.’

c. Left-Headed RC

̀̀ d̀̀ À̀t̀̀m̀̀ à̀̀l̀̀ d̀̀ m̀̀ng̀̀-k̀̀ỳ̀ d̀̀m̀̀ l̀̀.  
I ate Àtìm C bought mango-Rel yesterday Dem

‘I ate the mango that Àtìm bought yesterday.’

This sharply contrasts with Japanese, whose HIRC is never interpreted as restrictive and hence it cannot be used as answer to a *Wh*-Question.

## 5.2 Internal Syntax

First, we investigate the interiors of HIRC in B̀̀l̀̀, with a special attention to the syntax of the internal heads.

### 5.2.1 Indefiniteness Restrictions

As observed in many other languages of the world, the internal head of HIRC must be indefinite. This is called *Indefiniteness Restrictions* in Williamson (1987). Williamson (1984, 1987) first observed that in Lakhota HIRC, internal heads of relative clauses cannot be definite and hence must take indefinite determiners.<sup>6</sup>

(5.4) Lakhota: HIRC (Williamson 1987, 171)<sup>7</sup>

a. Mary owj̀̀ža ẁ̀ k̀̀g̀̀e ki he ophewath̀̀  
Mary quilt Id make D Dem 1Sg.-buy

‘I bought the quilt that Mary made.’

b. \* Mary owj̀̀ža ki k̀̀g̀̀e ki/k'̀̀p̀̀/cha he ophewath̀̀  
Mary quilt D make D/D/Id.F. Dem I-buy

‘I bought a/the/the (previously mentioned) quilt that Mary made.’

The same is true in Mooré. The internal head noun cannot be definite.

(5.5) Mooré: HIRC (Tellier 1989)

a. fo s̀̀ ỳ̀ daw-ninga zaam̀̀ ẁ̀ kula me.  
you C saw man-Spec.Id yesterday Dem went-home Cfp

<sup>6</sup>Lakhota is one of the Dakotan dialects of the Siouan Indian languages of the North America.

<sup>7</sup>As far as we can tell from the translation, the demonstrative *he* in Lakhota HIRC seems to lack a deictic meaning, like in B̀̀l̀̀.



- ‘The man who you saw yesterday went home.’
- b. \* fo sē yā daw-**wa** zaamē wā kula me.  
 you C saw man-D yesterday Dem went-home Cfp  
 ‘The man who you saw yesterday went home.’

As shown below, the head of HIRC in Bùlì cannot be definite, either, while it is allowed in Left-Headed RC.

## (5.6) Bùlì: Definite Relative Clauses

- a. HIRC  
 \* Àtìm dà [nú-rú-wá àlī/\*àtì s<sup>w</sup>à **nā:-mú** lá]  
 Àtìm bought man-D C own cow-D Dem  
 ‘Àtìm bought the cow which the man owns.’
- b. Left-Headed RC  
 Àtìm dà [**nā:-mú** \*àlī/àtì nú-rú-wá s<sup>w</sup>à lá]  
 Àtìm bought cow-D C man-D own Dem  
 ‘Àtìm bought the cow which the man owns.’

As shown in (5.7), however, the head noun cannot be a bare indefinite. Rather it has to take what I gloss as the relativizing suffix -y.

## (5.7) Bùlì: Indefinite Relative Clauses

- a. HIRC  
 \* Àtìm dè [Àmòak àlī dà **mángò** dīem (lá)].  
 Àtìm ate Àmòak C bought mango(Id) yesterday Dem  
 ‘Àtìm ate a mango that Àmòak bought yesterday.’
- b. Left-Headed RC  
 Àtìm dè [**mángò** àtì Àmòak dà dīem (\*lá)].  
 Àtìm ate mango(Id) C Àmòak bought yesterday Dem  
 ‘Àtìm ate a mango that Àmòak bought yesterday.’

The indefiniteness restriction is seen in a more striking way when relative clauses are stacked. As the examples (5.8) and (5.9) indicate, the demonstrative determiner *lá* cannot appear twice; it must appear at the right edge of the outer relative clause. Note that the first occurrence of *lá* marks the lower relative clause as definite.

## (5.8) Bùlì: Left-Headed RC+HIRC

- [Àtìm [àlì dè [**mángò-kū:y** [àtì Àmòak dà] (\*lá)]] lá] māsā  
 Àtìm C ate mango-Rel C Àmòak bought Dem Dem delicious  
 ‘The mango that Àmòak bought and Àtìm ate is delicious.’

## (5.9) Bùlì: HIRC+HIRC

[Àtìm [àlì dè [Àmòk [àlì dà **mángò-kū:y**] (\*lá)] lá] māsā.  
 Àtìm C ate Àmòak C bought mango-Rel Dem Dem delicious

‘The mango that Àmòak bought and Àtìm ate is delicious.’

That these sentences are not instances of *lá* deletion due to a ban on two adjacent occurrences of *la* can be easily shown by splitting them with an adverb (contra Fongbe and Hatian Creole: see Aboh 2004 and Lefebvre 1992a, Larson and Lefebvre in press). The sentences are still ungrammatical.

## (5.10) Bùlì: Left-Headed RC+HIRC

\*[Àtìm [àlì dè [**mángò-kū:y**] [àtì Àmòk da] lá] **dīem**] lá] māsā.  
 Àtìm C ate mango-Rel C Àmòak bought Dem yesterday Dem delicious

‘The mango that Àmòak bought yesterday and Àtìm ate is delicious.’

## (5.11) Bùlì: HIRC+HIRC

\*[Àtìm [àlì dè [Àmòk [àlì dà **mángòk-ū:y**] lá] **dīem**] lá] māsā.  
 Àtìm C ate Àmòak C bought mango-Rel Dem yesterday Dem delicious

‘The mango that Àmòak bought yesterday and Àtìm ate is delicious.’

On the contrary, the stacking data reveal an important aspect of the nature of the phenomenon. Significantly, the deletion of the first *lá* leads to grammaticality, whereas the deletion of the second keeps the sentence ungrammatical.

## (5.12) Bùlì:

## a. Left-Headed RC+HIRC

[Àtìm [àlì dè [**mángò-kū:y**] [àtì Àmòk dà] (\*lá)] **dīem**] lá] māsā.  
 Àtìm C ate mango-Rel C Àmòak bought Dem yesterday Dem delicious

‘The mango that Àmòak bought yesterday and Àtìm ate is delicious.’

## b. HIRC+HIRC

[Àtìm [àlì dè [Àmòk [àlì dà **mángò-kū:y**] (\*lá)] **dīem**] lá] māsā.  
 Àtìm C ate Àmòak C bought mango-Rel Dem yesterday Dem delicious

‘The mango that Àmòak bought yesterday and Àtìm ate is delicious.’

Lakhota exactly parallels Bùlì in this respect. Williamson (1987, 174) observes that when relative clauses are stacked in Lakhota, the right edge of the inner relative clause must not be marked by any definite determiner.

(5.13) Lakhota: (Williamson 1987, 174)

- a. \* [wowapi wə Deloria owa **ki**] blawa cha ...  
 book a Deloria write D I-read Ind  
 ‘the book that Deoria wrote that I read’
- b. \* [Ogle eya šapšapa **ki**] agli pi wachį ki lena e  
 shirt some dirty D take-home Pl I-want D Dem be  
 ‘These are the shirts that are dirty that I want them to take home.’

To summarize the data, the internal head of HIRC in Bùlì must be indefinite. Keeping this Indefiniteness Restrictions in mind, let us consider the function of the relativizing suffix *-y* in Bùlì.

### 5.2.2 Relativizers and the Specific-Indefinite Suffix

One significant characteristic of relativization in Bùlì, Mooré, and Dagbani is the existence of relativizer morphemes: *-y* for Bùlì, *-ninga* for Mooré, and *-so* for Dagbani. Before examining the suffix *-y* in Bùlì, it is better to take a look at its counterparts in the closely related languages, Mooré and Dagbani. Wilson (1963) and Peterson (1974) observe that in Mooré and Dagbani, (i) the relativizing suffixes are obligatory on internal heads and (ii) they function as specific-indefinite determiners outside relative clauses.

Consider the Mooré examples below. Mooré has a definite determiner (5.14b) and a specific-indefinite determiner (5.14c) and (5.14d).

(5.14) Mooré: Determiner System (Peterson 1974, G. Bougoumpiga p.c.)

- a. dawa-∅  
 man(Sg.)  
 ‘a man’
- b. da-wā  
 man(Sg.)-D  
 ‘the man’
- c. daw-ninga  
 man(Sg.)-Spec.Id  
 ‘a certain man’
- d. daw-ninga-wā  
 man(Sg.)-Spec.Id-D  
 ‘the certain man’

HIRC in Mooré requires the specific-indefinite determiner on the internal head as shown in (5.15a). It is, however, optional for Left-Headed RC as illustrated by (5.15b) and (5.15c)

## (5.15) Mooré: Relative Clauses (Peterson 1974)

## a. HIRC

fo sě yā daw-ninga zaamě wā kula me.  
 you C saw man-Spec.Id yesterday Dem went-home Cfp  
 ‘The man who you saw yesterday went home.’

## b. Left-Headed RC

daw-ninga fo sě yā a zaamě wā kula me.  
 man-Spec.Id you C saw him yesterday Dem went-home Cfp  
 ‘The man who you saw yesterday went home.’

## c. Left-Headed RC

da-wā fo sě yā a zaamě wā kula me.  
 man-D you C saw him yesterday Dem went-home Cfp  
 ‘The man who you saw yesterday went home.’

Additional examples are illustrated below in Dagbani. Dagbani differs from Mooré in that the specific indefinite determiner is obligatory when the relativized element is a non-subject, whether the relative clause is Left-Headed RC or HIRC.

## (5.16) Dagbani: Determiner System (Wilson 1963, Peterson 1974, Olawsky 1999)

## a. m puhi saan-so

I greeted stranger-Spec.Id  
 ‘I greeted a certain stranger.’

## b. m puhi san-a

I greeted stranger-D  
 ‘I greeted the stranger.’

## (5.17) Dagbani: Relative Clauses (Peterson 1974)

## a. Left-Headed RC

saan-so/\*san-a n nə puhi la tɕaŋya.  
 stranger-Spec.Id/stranger-D I nə greeted la has-gone  
 ‘The stranger who I greeted has gone.’

## b. HIRC

n nə puhi saan-so/\*san-a la tɕaŋya.  
 I nə greeted stranger-Spec.Id/stranger-D la has-gone  
 ‘The stranger who I greeted has gone.’

In Dagbani, as shown above, even when the relativized head precedes the C-like element (which is apparently realized as *nə* for non-subject relativization and *sa* for subject relativization), the specific indefinite suffix is obligatory. The ungrammaticality of the definite suffix on the in-situ internal head can be considered to be due to the Indefiniteness Restrictions, which has been discussed above.

But it is more important to note that the specific indefinite determiner is required for the in-situ internal head and hence, even a bare indefinite form is excluded in Dagbani.

Interestingly, Wilson (1963), Peterson (1974), and Tellier (1989) observe that both *-so* (Dagbani) and *-ninga* (Mooré) have a focus function. Tellier (1989) draws further attention to Rochemont (1986), who observes a correlation between (constructional) focus and indefiniteness (Rochemont 1986, 122). However, it should be noted that in HIRC, these morphemes yield neither specific indefinite nor focus interpretations. The hypothesis that a (specific) indefinite determiner can have a focus force is supported by Dutch exclamative constructions. Bennis (1998) observes that in Dutch exclamatives, the indefinite singular determiner must be always used.

(5.18) Dutch: (Bennis 1998, 29)

- a. Er staan in die kast **een** mooie boeken!  
there stand in that bookcase a beautiful books  
'What a lot of beautiful books there are in that cupboard!'
- b. Wat **\*(een)** boeken heeft hij gekocht!  
what a books has he bought  
'What a lot of books he bought!'

Bùlì differs from Mooré and Dagbani in that it lacks a specific indefinite determiner. The relativizing suffix *-y* in Bùlì cannot be used to refer to a specific indefinite entity.<sup>8</sup>

(5.19) Bùlì: Determiner System

- a. ná:b  
cow(Id)  
'a cow'
- b. ná:-mũ  
cow-D  
'the cow'
- c. ná:-bú-lá  
cow-Cl-Dem  
'that cow'
- d. ná:-bū:-y  
cow-Rel  
'\*a certain cow'

Rather, Bùlì does not make any morphological distinction between specific and non-specific indefinites. The indefinite form can mean either indefinite or specific-indefinite.

<sup>8</sup>I assume that *-y* in Bùlì has a floating mid-tone, which is linked to the adjacent vowel (i.e. class pronoun). Thus every relativized noun has *-y* with a mid-tone, even though the class pronoun itself has a high tone.

## (5.20) Bùlì:

ná:b  
cow(Id)

‘a cow’  
‘a certain cow’

## (5.21) Dem and D in Bùlì for Class I

	Id	D	Spec.Id	Dem <sub>Prox.</sub>	Dem <sub>Dist.</sub>
Sg.	∅	wá	∅	dé	lá
Pl.	∅	má	∅	dé	lá

Furthermore, the -y suffix in RC in Bùlì, unlike Mooré and Dagbani, does not have any explicit focus function, to the best of my knowledge. The relativizer -y is obligatorily required for HIRC.

## (5.22) Bùlì: HIRC

- a. Àtìm dè [Àmòak àlì/\*àtì dà **mángò-kū\*(-:y)** dīem lá].  
 Àtìm ate Àmòak C bought mango-Rel yesterday Dem  
 ‘Àtìm ate the mango that Àmòak bought yesterday.’
- b. \* Àtìm dè [Àmòak àlì/\*àtì dà **mángò-mu** dīem lá].  
 Àtìm ate Àmòak C bought mango-D yesterday Dem  
 ‘Àtìm ate the mango that Àmòak bought yesterday.’

Significantly, however, this -y suffix in Bùlì is optional with Left-Headed RC, whereas it is obligatory with HIRC, just as in Mooré and Dagbani. When -y is not used, the head noun must take a definite determiner.

## (5.23) Bùlì: Left-Headed RC

- a. [ná:-bū:y [\*àlì/àtì nùrú-wá s<sup>w</sup>à] lá]  
 cow-Rel C man-D own Dem  
 ‘the cow which the man owns’
- b. [ná:-mú [\*àlì/àtì nùrú-wá s<sup>w</sup>à] lá]  
 cow-D C man-D own Dem  
 ‘the cow which the man owns’

This parallelism between Bùlì, Mooré, and Dagbani in the behavior of the “relativizing suffixes” leads us to think that the relativizing suffix -y in Bùlì can be considered to be the head of a Focus/Specific-Indefinite determiner. Some qualifying notes are in order here. As we have seen, the ungrammaticality of the in-situ definite internal head (5.24) is due to the Indefiniteness Restrictions (Williamson 1987), according to which the head of HIRC cannot be definite.

## (5.24) Bùlì: Indefiniteness Restrictions

\* Àtìm dè [Àmòak àlì/\*àtì dà **mángò-mu** dīem lá].  
 Àtìm ate Àmòak C bought mango-D yesterday Dem

‘Àtìm ate the mango that Àmòak bought yesterday.’

Now consider the well-formed HIRC in Bùlì again.

(5.25) Àtìm dè [Àmòak àlì/\*àtì dà **mángò-kū:-y** dīem lá].  
 Àtìm ate Àmòak C bought mango-Rel yesterday Dem

‘Àtìm ate the mango that Àmòak bought yesterday.’

The relativized form in Bùlì consists of a noun stem and a class pronoun, followed by -y.

## (5.26) Bùlì: Relativized Form

ná:-**bū**-y  
 cow-Cl-y

Bùlì has 9 classes. Each noun belongs to one of these classes (Kröger 1992, Akanlig-Pare 1997, 1999). Class markers also function as pronouns, as shown below.

## (5.27) Bùlì: Class Pronouns

Àtìm dà ná:**b** Àmòak nà̀yì **bú**.  
 Àtìm bought cow(Id) Àmòak beat Cl

‘Àtìm bought a cow. Àmòak beat it.’

Now given that the relativized form contains a class marker –a definite pronoun–, the entire complex (e.g. *ná:-bū:y*) should be interpreted as a definite description. Definiteness, however, conflicts with the Indefiniteness Restrictions. What is it going on here? I will propose that the relativizing suffix -y in fact functions as an “indefinitizer” in Bùlì, on a par with the specific-indefinite determiners in Mooré and Dagbani. Thus the complex *ná:-bú* is converted into an indefinite noun by the suffix -y.<sup>9</sup>

## (5.28) -y is an “indefinitizer” determiner in Bùlì.

Although the suffix -y cannot be used as a specific-indefinite determiner in Bùlì, there is some evidence to support this hypothesis. The noun class I *wá* is used to refer to a singular human entity or other entities that belong to this class.

<sup>9</sup>This is reminiscent of Kuroda’s *Definitization* operation as relativization. See Kuroda (1968) for discussions.

## (5.29) Bùlì: Class Pronoun (Class I)

wá  
D  
'he/she'

Significantly, the class pronoun *wá* can combine with *-y* to form an indefinite pronoun or an NPI.

## (5.30) Bùlì:

a. Àtìm àn ñyà wā:-y yá.  
Àtìm Neg see Cl-y Cfp  
'Àtìm didn't see anyone.'

b. Àtìm ñyà ā-wā:-y.  
Àtìm saw a-Cl-y  
'Àtìm saw someone (non-specific or specific).'

This use of *-y*, however, is not productive in contemporary Bùlì. Thus whereas *wá* as a definite pronoun is neutral as to its animacy, (*a*)*wā:-y* only refers to an indefinite human.<sup>10</sup> Furthermore, this kind of use of the Cl-*y* complex is restricted to this class. For example, it is ungrammatical with other Class pronouns.<sup>11</sup>

## (5.31) Bùlì:

\* Àtìm àn ñyǎ bū:-y yá.  
Àtìm Neg see Cl-y Cfp  
'Àtìm didn't see anything (e.g. any cow).'

Thus the following generalization emerges.

## (5.32) In HIRC in Gur, a specific-indefinite determiner (Mooré and Dagbani) or an indefinitizer determiner (Bùlì) is required on the internal relativized head.

<sup>10</sup>I have no diachronic information available as to this use of *-y*. The nature of the affix *a-* is unknown, but it is productively used to make a thing human. For example, a lot of names for Balsa people begin with *a-*.

<sup>11</sup>Whereas the Cl-*y* form itself cannot be used by itself with other Class pronouns, it can be used with indefinite noun phrases.

## (i) Bùlì: (Kröger 1992)

núrú-bā bā:-y kàn ñòb wa:uṅ lām.  
person-Id.Pl. Cl-y Neg eat monkey meat

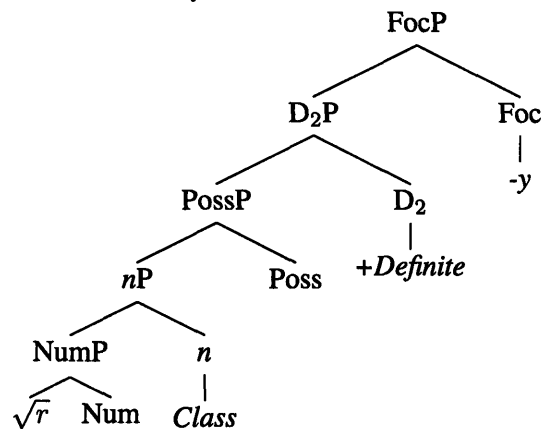
'Some people do not eat the meat of a monkey.'



### 5.2.3 Structure of the Internal Head

We now ask what kind of structure the relativized head has. I will propose the following structure. I assume that the class marker in Bùlì consists of Num, *n*, and D, and these functional heads morphologically fuse into one under adjacency, being realized as a so-called noun class marker in the literature. Furthermore, following the preceding discussions, I assume that *-y* is a kind of specific-indefinite determiner, which resides in a Foc position. This gives rise to, superficially, doubling with a noun and a pronoun.<sup>12,13</sup>

(5.33) DP<sub>Rel</sub>-internal Syntax



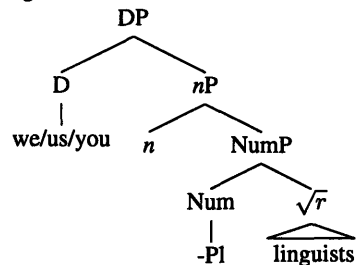
(5.34) A noun class marker in Bùlì is a morphological reflex of fused Num, *n*, and D.

## 5.3 External Syntax

Having examined the interiors of the internal heads in Bùlì, Mooré and Dagbani, now let us turn to the exteriors of the internal heads. We focus on two points: the distribution of “D” (distal demon-

<sup>12</sup>Class markers/pronouns in Bùlì show a great similarity with definite determiners. In fact, English shows a similar kind of doubling, as discussed by Postal (1969) and in particular by Pesetsky (1978).

(5.1) English



Now one crucial difference between Bùlì and English/Japanese is that in the latter, doubling is restricted to plural nouns, whereas in the former, there is no such restriction. Thanks to David Pesetsky for bringing my attention to the literature.

<sup>13</sup>Collins (1993) discusses another example of doubling in Ewe, where a full non-subject/object NP is doubled. Another famous doubling case is, of course, clitic doubling in Romance.

stratives and definite determiners) and its syntactic functions.

### 5.3.1 Distal Demonstratives and Definite Determiners in HIRC

The use of definite determiners or demonstratives is a significant characteristic of HIRC in Gur. There are three important properties to note here.

First, as the following examples show, the demonstrative at the right edge of the relative clause is obligatory whether in HIRC or Left-Headed RC, when the head of the relative clause is definite.

(5.35) Bùlì:

a. HIRC

Àtìm dè [Àmòak àlì/\*àtì dà mǎngò-kū:-y dīem \*(lá)].

Àtìm ate Àmòak C bought mango-Rel yesterday Dem

‘Àtìm ate the mango that Àmòak bought yesterday.’

b. Left-Headed RC

Àtìm dè [mǎngò-kū:-y \*àlì/àtì Àmòak dà dīem \*(lá)].

Àtìm ate mango-Rel C Àmòak bought yesterday Dem

‘Àtìm ate the mango that Àmòak bought yesterday.’

Since in Bùlì the demonstrative, in contrast with definite determiners, does not show any distinct morphology for number, *lá* retains its form irrespective of the number specification of the internal head.

Second, the demonstrative used in relative clauses is morphologically exactly the same as those used in nominals and clauses (see Chapter 6 for clausal determiners.)

(5.36) Bùlì: Demonstrative Determiner

ná:-mù-lá

cow-Cl-Dem

‘that cow’

(5.37) Bùlì: Matrix Clausal Determiner

Àtìm nàyì Àmòak lǎ.

Àtìm hit Àmòak Dem

‘Àtìm hit Àmòak (as I said).’

Third, demonstratives in a relative clause loses its deictic function.<sup>14</sup> As the translations indicate, the use of *lá* in relative clause (and matrix clauses), in contrast with the one in nominals, does

<sup>14</sup>In fact the use of distal demonstratives in RC is not restricted to HIRC. Thus English also manifests the use of the distal plural demonstrative. Thanks to David Pesetsky for bringing my attention to the examples. Note that the proximate plural demonstrative “these” does not allow non-deictic interpretation. The same is true in Ewe (Dzamashie 1995), for example. Kuroda (1968, 250) observes that in English, some uses of *that* are more like the determiner *the* or the pronoun

not bear any distal deictic meaning. Thus it becomes more like a definite determiner. The presence of the demonstrative determiner indicates that the whole relative clause –what is relativized– is definite.

Now recall, as we have seen, that the head noun of HIRC cannot be a bare indefinite.

(5.38) Bùlì: Indefinite Relative Clauses

a. HIRC

\* Àtìm dè [Àmòak àlī dà mǎngò dīem].  
 Àtìm ate Àmòak C bought mango(Id) yesterday  
 ‘Àtìm ate a mango that Àmòak bought yesterday.’

b. Left-Headed RC

Àtìm dè [mǎngò àtì Àmòak dà dīem (\*lǎ)].  
 Àtìm ate mango(Id) C Àmòak bought yesterday Dem  
 ‘Àtìm ate a mango that Àmòak bought yesterday.’

The same is true in Mooré. Peterson (1974) notes that indefinite relativization has only one form, which is the following. Crucially, there is no indefinite HIRC. Note also that in indefinite relative clauses, the external determiner must go away.

(5.39) Mooré: Indefinite Relativization (Peterson 1974, 77)

daw fo se mi \*(wā) kula me.  
 man(Id) 2Sg. NML know D went-home Cfp

‘A man who you know went home.’

There is an asymmetry between HIRC and Left-Headed RC, however. Whereas HIRC does not allow the internal head to be a bare indefinite, Left-Headed RC allows a bare indefinite head noun. Note that since the demonstrative determiner indicates definiteness, it must be absent in indefinite relative clause examples. Crucially, the HIRC counterpart is ungrammatical.

This brings to light an important aspect of the mechanism of HIRC, in which the external determiner plays a crucial role in licensing HIRC.

(5.40) HIRC must be headed by D.

This is in fact true cross-linguistically. A number of languages utilize definite determiners or demonstratives to quantify the relative clause in HIRC. Some examples are illustrated in Georgian, Lakhota, and Diegueño.<sup>15</sup>

*it.*

- (i) a. Those books that are on the shelves are to be moved to the department library.  
 b. \*These books that are on the shelves are to be moved to the department library.

<sup>15</sup>Gorbet (1976) glosses *pu* as a demonstrative, but notes that it is also used as a definiteness determiner, a definite determiner itself being absent in the language.

## (5.41) Demonstrative and HIRC

- a. Georgian (Lea Nash MIT Fall 2002 lecture)

Sen rom cigni dancere **imas**  
 2Sg. rom book wrote Dem

‘the book that you wrote’

- b. Lakhota: (Williamson 1984, 171)

Mary owįža wą kađe **ki/cha/k’ų** (he) ophewathų.  
 Mary quilt Id make D/Id/D Dem 1Sg.-buy

‘I bought the/(previously mentioned)/a quilt that Mary made.’

- c. Diegueño: (Gorbet 1976, 52)
- <sup>16</sup>

xatçok(-0) wi:m tuc-**pu**-c n<sup>y</sup>L<sup>y</sup>.  
 dog(-OBJ) rock.Comit 1Sg.hit-Dem-SUBJ black

‘The rock that I hit the dog with is black.’

‘The dog that I hit with the rock is black.’

## 5.3.2 Islands

Relative clauses are subject to island constraints, suggesting that they involve a probe-goal relation, rather than unselective binding. The head of a relative clause cannot be inside another relative clause, for example. Compare with the stacking examples in (5.8).

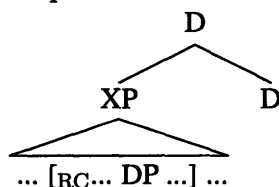
## (5.42) Bùlì: Island Effects

\* [Àtìm [àlì nẹ [núró-wā:y [àlì da **mángò-kū:y** (lá)]] lá] māsā.  
 Àtìm C saw man-Rel C bought mango-Rel Dem Dem delicious

‘The mango that Àmòak saw the man who bought is delicious.’

Here, the head of the outer relative clause *mángò-kū:y* is embedded under another relative clause XP, whose head is *núró-wā:y* and the sentence is ungrammatical.

## (5.43) Complex NP Islands in Bùlì



<sup>16</sup>Basillico (1996) has a typo in the translations of this sentence. See Gorbet (1976, 52) for correct translations.

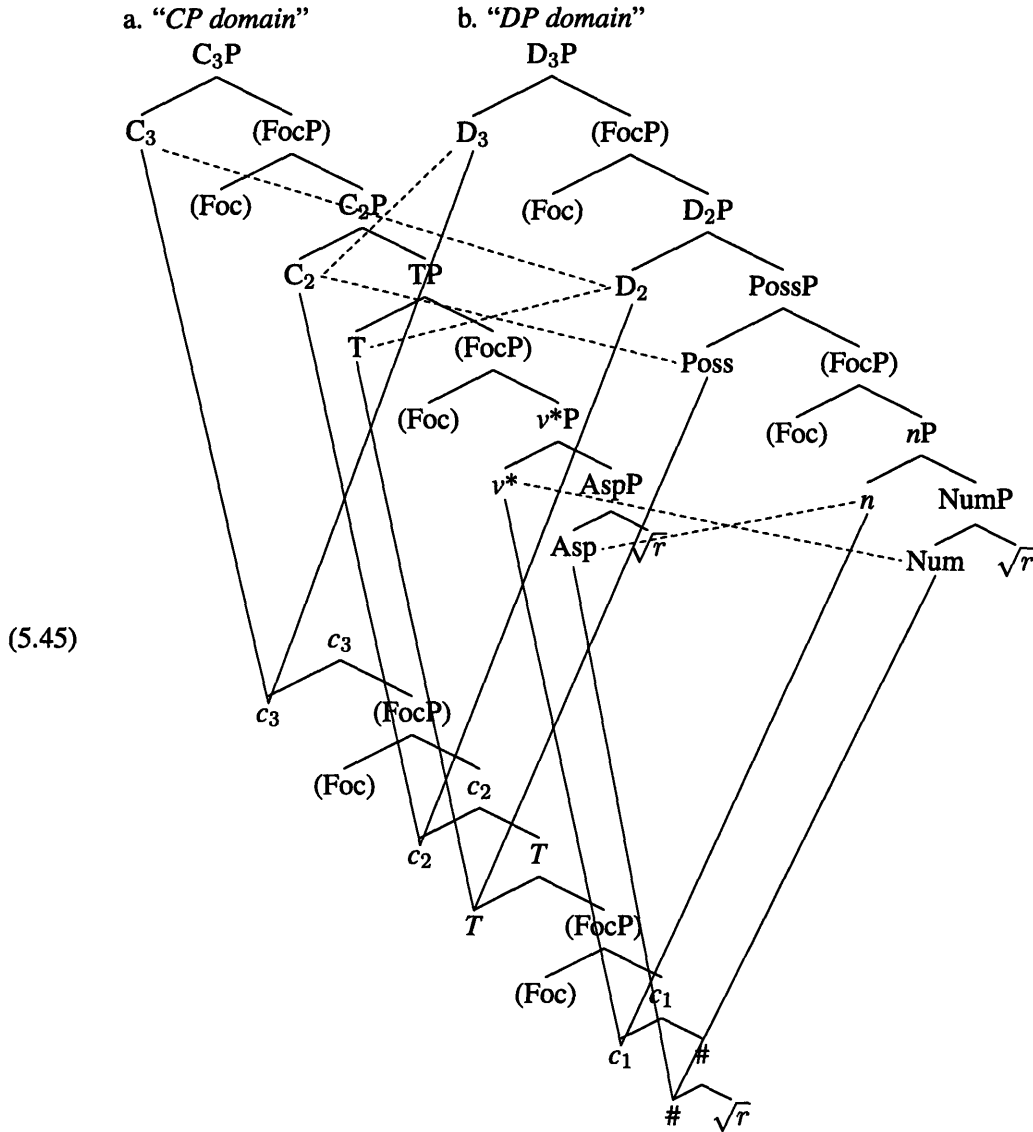
## **5.4 Multiple Selection and CP/DP Symmetry**

Now having established the internal and external syntax of HIRC in Bùlì, now I show show how those two structures get integrated. Building on the theory of CP/DP Symmetry proposed, I will argue that HIRC has an interweaving structure.

### **5.4.1 CP/DP Symmetry and Interweaving**

I argue that HIRC is another instance of structural interweaving between CP and DP domains (See Chapter 3 and 6). The general schema for the CP/DP Symmetry and Interweaving is repeated here below. Under this theory, what we see as CPs and DPs are manifestations of the super-categorial structure (5.45) mapped to (5.44a) and (5.44b).

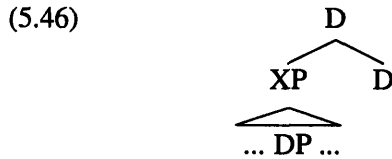
## (5.44) SUPERCATEGORIAL THEORY OF CP/DP SYMMETRY



In this representation, it is not the case that there are two different structures for DP and CP; rather, there is one single structure and those two apparently different objects are created by each phase head ( $c_1$ ,  $c_2$ , and  $c_3$ ). The most significant consequence is that it gives rise to structures in which pieces of nouns and sentences are interwoven. Crucially, it allows structures where D takes CP as a complement.

### 5.4.2 Layered D

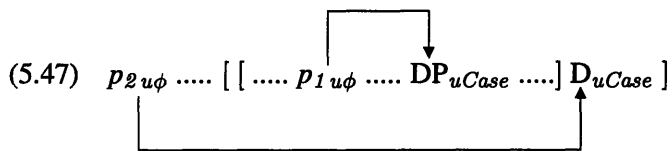
Now, I propose that the structure of HIRC involves interweaving and a layer of D elements as schematically shown in (5.46). Here, the relative clause XP, containing an internal head DP, is headed by an external D.



As we have seen, D –determiners or demonstratives– seems to play a defining role in the syntax of HIRC in Gur languages. I propose that this reflects a deep mechanism of the internal and external syntax of HIRC and, more generally, of DPs.

In HIRC, the internal head functions as an argument internal to the clause. In other words, it Agrees with probe  $u\phi$ -features and has its uCase valued. Given that uCase can be valued only once per DP, HIRC faces a Case-theoretic problem: the relativized head at the same time functions as an argument externally to the clause.

The external D –demonstrative or determiner– solves this problem. Given the layered D structure, the syntax of HIRC now falls in place. First, D of the DP below is the locus for the internal  $\phi$ -syntax.



The head noun DP has  $\phi$ -features and uCase, which act as a goal within the relative clause. The relative clause CP, on the other hand, is headed by D. C has  $u\phi$ -features and hence acts as a probe with T (=P<sub>1</sub>), internal to the clause. It should be noted that all the  $u\phi$ -features are valued clause-internally.

The same layered structure has been observed for the CP domain in various languages in the literature (see Iatridou and Kroch 1992 for CP-recursion phenomena in Germanic languages).

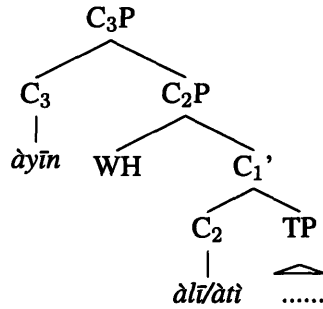
In Bùlì, *Wh*/Focus-movement can occur within an embedded clause, in which case a *Wh*/Focus element moves to a position below a complementizer *àyīn* and above a complementizer *àlī/àtī*.

(5.48) Bùlì:

- a. Long-distance Non-Subject *Wh*-Question  
 ká bwà àlī/àtī Àtīm wē:nī àyīn Àmðak s<sup>w</sup>à (\*ka).  
 F what C Àtīm say that Àmðak own (it)  
 ‘What did Àtīm say that Àmðak owned?’
- b. Long-distance Non-Subject *Wh*-Question  
 Àtīm wē:nī àyīn ká bwà àlī/àtī Àmðak s<sup>w</sup>à.  
 Àtīm say that F what C Àmðak own

'What did Àtìm say that Àmðak owned?'  
 'Did Àtìm said what Àmðak owned?'

(5.49)

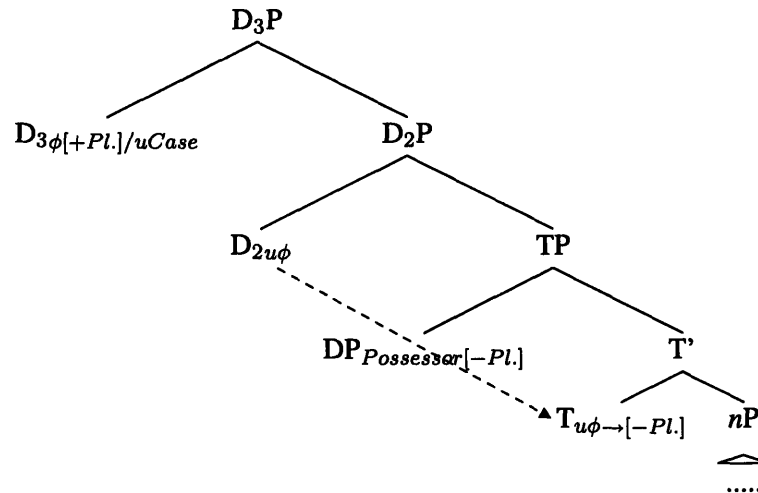


Such a layered D structure is in fact necessary even for simple noun phrases. Consider a simple example below.

(5.50) John's books were donated to the library.

Genitive Case-marking here, by the null hypothesis, is a result of agreement on a par with Nominative and Accusative Case-marking in clauses. The probe  $D_2$ -T within the DP gets its  $u\phi$ -features valued by the goal possessor DP. This gives a singular value to  $u\phi$ -features of  $D_2$ -T. However, the entire DP, which is the subject of the matrix clause, functions as a plural DP. Thus  $\phi$ -features available for the external syntax must be located above the valued  $\phi$ -features of  $D_2$ -T.<sup>17</sup>

(5.51)



<sup>17</sup>One might entertain a possibility that there is no layer and there is just a single D where  $uCase$ ,  $u\phi$ -features and  $\phi$ -features are located. It is not immediately clear that this is a viable option but on a simple assumption,  $u\phi$ -features are immediately valued by  $\phi$ -features without any Search, since they are very local to each other. There would then be no  $u\phi$ -features left for the internal syntax of  $D_2P$ , which seems to be a problem.



## 5.5 HIRC

### 5.5.1 Bùlì

Now integrating the structure of the internal head (5.53) and the outer distal demonstrative structure of HIRC under CP/DP Symmetry yields the following two structures of HIRC.<sup>18</sup>

(5.52) Bùlì

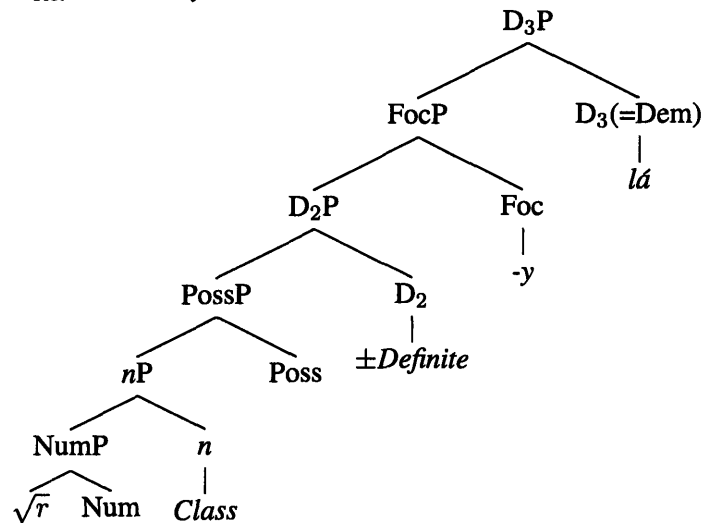
a. HIRC

Àtìm dè [Àmòak àlì/\*àtì dà **mángò-kū:-y** dīem lá].  
 Àtìm ate Àmòak C bought mango-Rel yesterday Dem  
 ‘Àtìm ate the mango that Àmòak bought yesterday.’

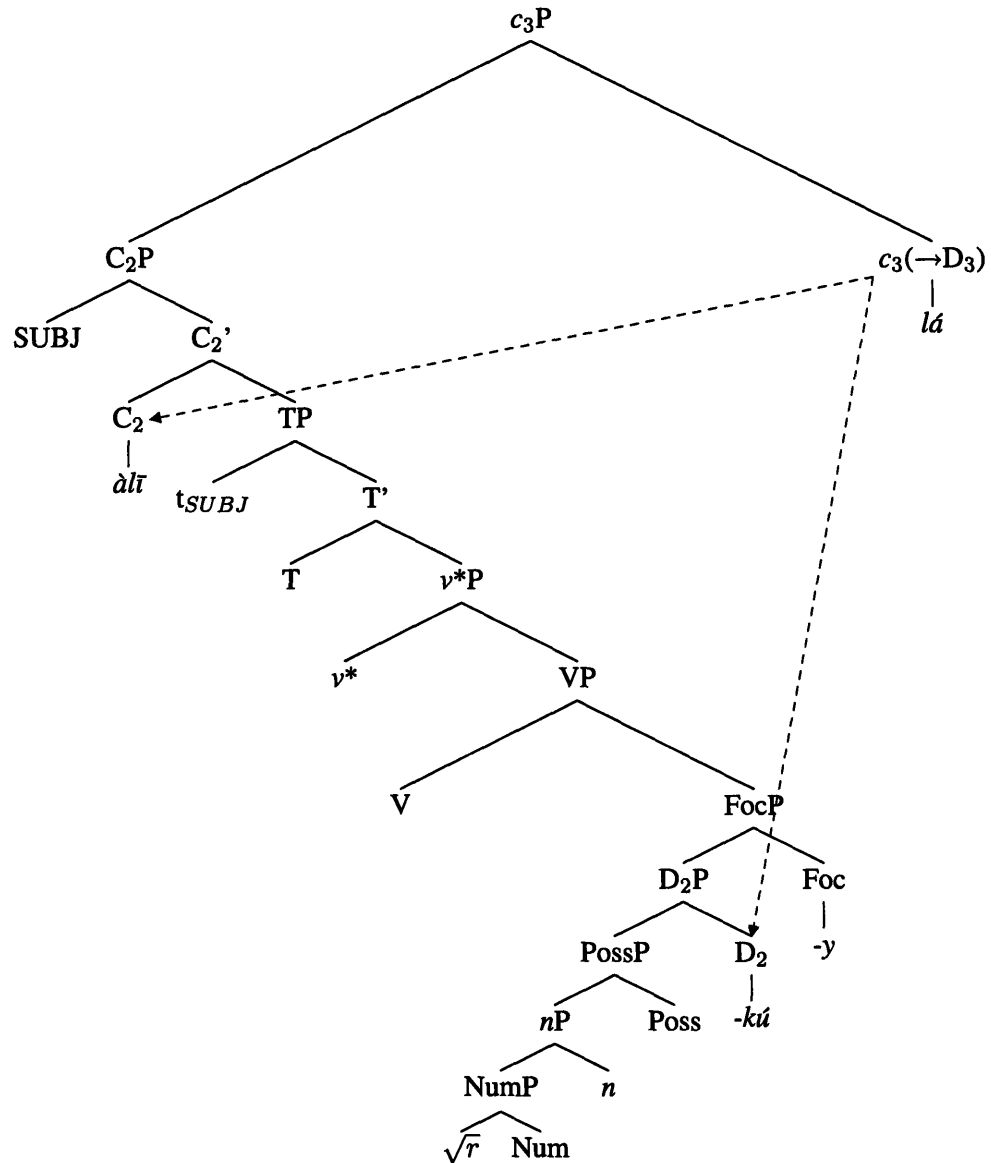
b. Left-Headed RC

Àtìm dè [**mángò-kū:-y/-kú** \*àlì/àtì Àmòak dà dīem lá].  
 Àtìm ate mango-Rel/D C Àmòak bought yesterday Dem  
 ‘Àtìm ate the mango that Àmòak bought yesterday.’

(5.53) DP<sub>Rel</sub>-internal Syntax



<sup>18</sup>It is often observed that typologically demonstratives and determiners grammaticalize into C(omplementizers). For example, the demonstrative *that* in English also serves as a declarative complementizer. Likewise, a definite determiner *ki* and *k'w/u* in Lakhota are also homophonous with a declarative complementizer in the language.

(5.54) The Structure of Object Relativization in Bùlì (Left-Headed HIRC)<sup>19</sup>

Let us explicate the derivation in more detail. Suppose that  $C_2P$  has been created. Now  $c_3$  is merged with  $C_2P$ . Upon Merger of  $c_3$ ,  $c_3$  enters into two selection relations.

- (5.55) a. A specific-indefinite determiner and the Focus head are the same occurrence –i.e.  $Foc$ .  
 b.  $c_3$  –Dem– selects  $C_2$  locally.  
 c.  $c_3$  –Dem– selects  $D_2$  non-locally.

<sup>19</sup>I omit

The demonstrative *lá*, thus, selects  $C_2$  and  $D_2$ . We can formalize this multiple selectional-relation as follows:

- (5.56) In HIRC, the head  $D_3$  enters into multiple selectional relations: the  $C_2$  head of the relative clause (CP) and the  $D_2$  head of the relativized noun (DP/NP).  
=Multiple Select ( $C_3, C_2, D_2$ )

Put differently, HIRC is an instance of sharing by  $D_3$  –Dem shares “CP” and “DP” under CP/DP Symmetry. This one-to-many relation can be considered to be another form of what I call Multiple Agree (Hiraiwa 2001a, 2002a,d, to appear), with the probe establishing syntactic relations with more than one element derivationally simultaneously (see Chapters 1 & 2).<sup>20,21</sup>

Notice that the selectional relation above is purely syntactic. At the C-I Interface, however, semantic relation must be uniquely determined<sup>22</sup>. Thus the derivation (5.54) chooses either (Dem,  $C_2P$ ) or (Dem,  $D_2P$ ). I propose that HIRC interpretation is nothing but a reflection of the latter.

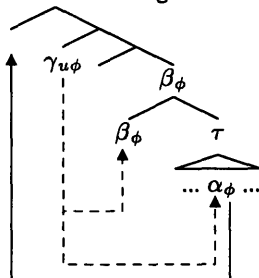
Finally, let us consider the function of the “specific-indefinite” determiner or “indefinitizer” determiner in HIRC. As it has been noted by Tellier (1989) and Williamson (1987), it has some focus function. If this is true, it is not unreasonable to think that the determiner in question has a feature  $F_{Op}$ . Given that  $c_3$  is the locus of the uOp feature, the role of the specific-indefinite determiner is to make it computationally easier to locate the goal for the uOp-feature of C (i.e.  $c_3$ =Dem). Incidentally, it should be noted that the focus marker *ká* is obligatory in in-situ Focus constructions in Bùlì (see Chapter 7 for discussion).

Recall, however, that the relativized head noun is dislocated to the left edge of the relative clause, the determiner is optional in Bùlì and Mooré. One way to understand this is to think that

<sup>20</sup>One question remains as to the apparent unbound dependency of the multiple selectional relation (5.54), where the relativized head remains in situ. Clearly, in this case, the relation violates subjacency (or the PIC). One way to get around this problem is to assume that the derivation involves one more step; namely, operator movement of the internal head (Watanabe 1992). This may sound natural given the fact that Bùlì relative clauses obey island constraints (Ross 1967). But whether island effects diagnose movement or Agree remains an issue to be seen and hence not conclusive. More significantly, the validity of “null operator movement” needs rethinking in the current framework. Thus another possibility is a reconsideration of PIC/opacity from the purview of the theory of CP/DP Interweaving proposed here. See Nissenbaum (2001) for relevant discussions.

<sup>21</sup>The same process is found, for example, in possessor raising configurations, where a probe  $\gamma$  enters into Agree relations with  $\beta$  and  $\alpha$ . Note the structural similarity.

(i) Possessor Raising



<sup>22</sup>Although narrow syntactic derivation of  $C_{HL}$  allows “simultaneous computation” to some degree. (See Chapter 1 & 2), such simultaneity may be lethal for the interface systems.

overt movement does the job and makes it unnecessary. In this respect, it may be worth pointing out that in Bùlì focus constructions, focus in-situ requires a focus marker *ká*, whereas the focus marker becomes optional once it is dislocated to a focus position [Spec, FocP].<sup>23</sup>

(5.57) a. Focus Movement

(ká) ná:mú àlì/àtì kparWa-wa tà.  
Foc cow C farmer-D have  
It is the cow that the farmer owns.'

b. Focus-in-situ

kpar<sup>w</sup>a-wa tà \*(ká) ná:mú.  
farmer-D own Foc cow-D  
It is the cow that the farmer owns.'

To summarize, the structure of HIRC is a full clause (CP) headed by a determiner (D), where the head of the relative clause stays in-situ.<sup>24</sup>

## 5.5.2 Mooré and Dagbani

### 5.5.2.1 Mooré

The proposed structure, at first sight, does not extend to Mooré readily. First, the locus of FocP seems to be lower than DP within a noun phrase. This is illustrated in (5.58) and (5.59).<sup>25</sup>

(5.58) Mooré: HIRC (Peterson 1974, 74)

fo sě yā a daw\*(-ninga) zaamě wā kula me.  
you C saw 3Sg. man-Spec.Id yesterday Dem went-home Cfp  
'The man who you saw yesterday went home.'

(5.59) Mooré: Left-Headed RC

- a. daw-ninga fo sě yā a zaamě wā kula me.  
man-Spec.Id you C saw him yesterday Dem went-home Cfp  
'The man who you saw yesterday went home.'
- b. da-wā fo sě yā a zaamě wā kula me.  
man-D you C saw him yesterday Dem went-home Cfp  
'The man who you saw yesterday went home.'

<sup>23</sup>This is different from *Wh*-questions, where *ká* seems to be optional irrespective of whether the *Wh*-phrase is in-situ or moved. See Chapter 7.

<sup>24</sup>I will leave open exactly how the semantics interprets this structure as a "relative clause". The point of emphasis in this chapter is what the syntax of HIRC must look like, given evidence and current stage of understanding of syntax.

<sup>25</sup>According to Peterson (1974), the resumptive pronoun is optional. Tellier (1989) does not indicate any resumptive pronouns in the examples.

- c. **dá-o-ńíng-w'ǎ** fò sèn ség zàamé yáa mám zóa.  
 man-Spec.Id-D you C meet yesterday is my friend  
 'The certain man (that we talked about) that you met yesterday is my friend.'

Crucially, as shown in (5.59c), the specific-indefinite determiner *-ninga* can co-occur with the definite determiner *-wá* and in such a case, *wá* must follow *-ninga*.

Another obstacle is clearly the placement of the definite determiner *wá*, not a definite demonstrative, at the end of RC, unlike Bùlì. The demonstratives and the definite determiners in Mooré are illustrated below.<sup>26</sup>

(5.60) Dem and D in Mooré (Peterson 1971, 1974, Nikiema 1980)

	Id	D	Spec.Id	Dem <sub>prox.</sub>	Dem <sub>dist.</sub>
Sg.	∅	wa	ninga	kāngá	kāngá
Pl.	∅	wa	ninsb	?	?

How can we make sense out of the Mooré data? I propose that two parametrizations are involved. First, the role of Dem can be taken over by D in some languages. Notice that the semantic features of the demonstrative *lá* in Bùlì relativization are reduced: it loses its deictic meaning and hence is more like a definiteness marker.<sup>27</sup>

Second, the locus of FocP within a noun phrase comes in two varieties: FocP-DP or DP-FocP (like Bùlì). This stipulation immediately explains the ordering between the definite determiner and the specific-indefinite determiner in Mooré.

But a more interesting solution is available if we consider the parasitic gap data in Tellier (1989, 312). Whereas the internal head (the direct object) cannot license parasitic gaps in-situ, it can license a parasitic gap if it is moved over the indirect object, but still below the subject.

(5.61) Mooré: HIRC and a Parasitic Gap (Tellier 1989, 312)

- a. \*? ìn yáá Màarí sèn tóol kwásá **rúms nínsb** zàamé nýyàol ò ká  
 1Sg see Mary Rel send vendor animals Spec.Id(Pl.) yesterday before 1Sg. Neg  
 góolá e<sub>i</sub>.  
 tame  
 'I saw the animals that Mary sent to the saleman yesterday without taming.'
- b. ìn yáá Màarí sèn tóol **rúms nínsb** kwásá zàamé nýyàol ò ká  
 1Sg see Mary Rel send animals Spec.Id(Pl.) vendor yesterday before 1Sg. Neg  
 góolá e<sub>i</sub>.  
 tame  
 'I saw the animals that Mary sent to the saleman yesterday without taming.'

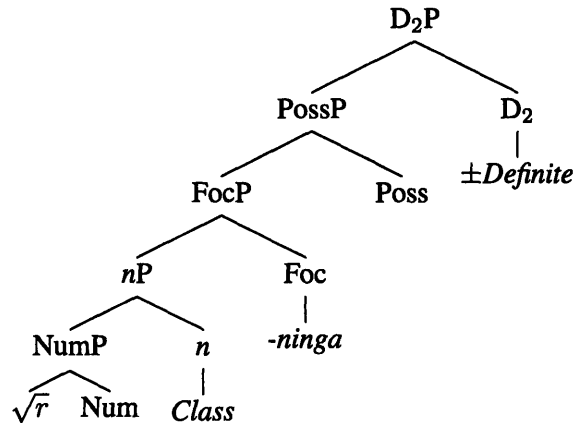
Thus Tellier (1989) observes that in Mooré, FocP in the “*v*\*P domain” is also active and argues that “short partial  $\bar{A}$ -movement” of the internal head to the edge of *v*\*P is available in Mooré.

<sup>26</sup>I do not have information about number distinction in demonstrative determiners in Mooré at this point.

<sup>27</sup>Such a semantic shift seems to be a cross-linguistic tendency. Cf. *that* in English and *det* in Swedish, for example.

Then, in terms of the proposed CP/DP Symmetry, it is not so unreasonable, by parity of reasoning, to assume that there is a “low” Foc position available below  $D_2$  and above  $v/n$  in Mooré. Given that the Foc in the clausal domain is located just above  $v^*P$ , I propose that FocP in the nominal domain is also located just on top of  $nP$  and that this is the locus of the specific-indefinite determiner in Mooré.

(5.62) Mooré:  $DP_{Rel}$ -internal Syntax



There is confirming evidence for this hypothesis. The specific indefinite suffix *ninga* shows number agreement, in contrast with *-y* in Bùlì. Note that the definite determiner *wa*, on the other hand, does not change its form for number.

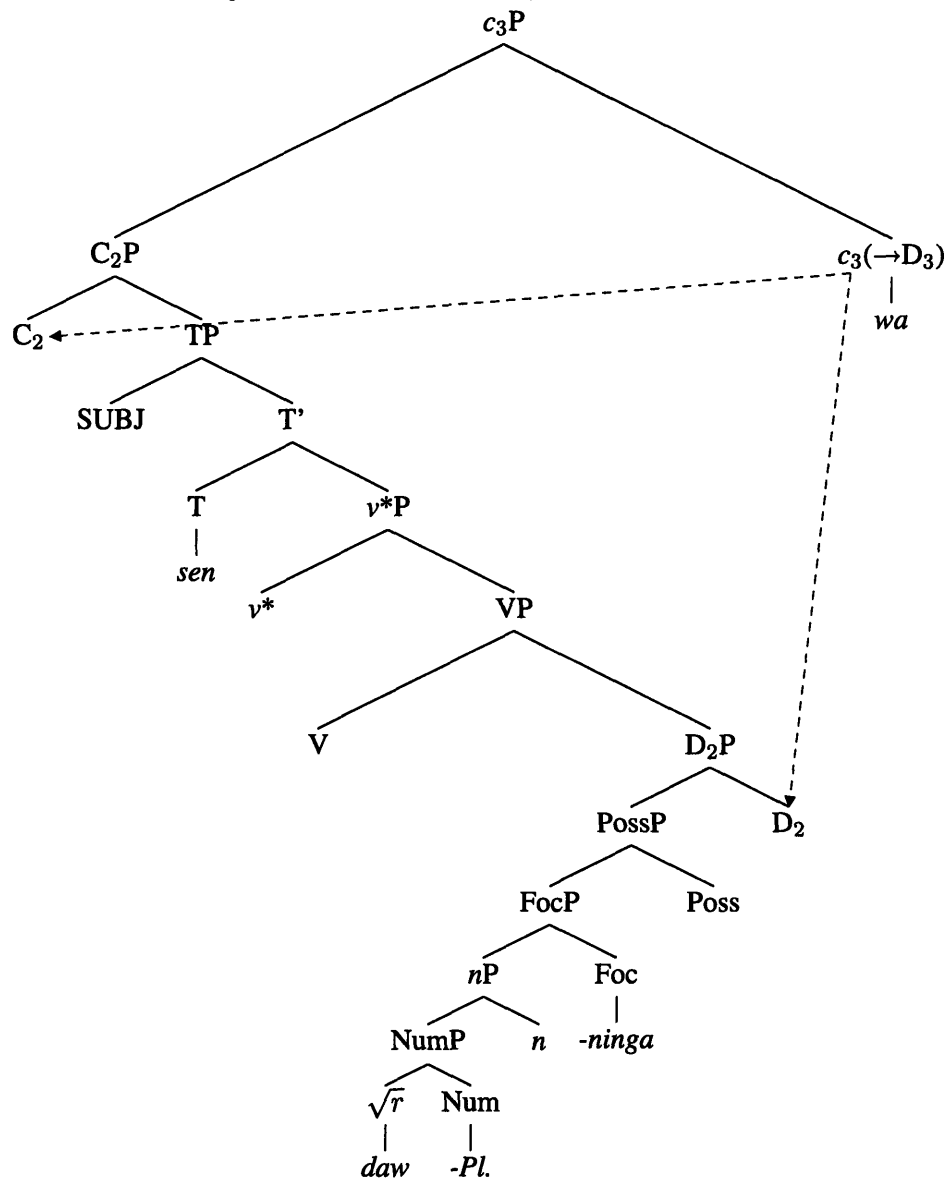
(5.63) Mooré:

rowa ninsb  
 man Spec.Id.Pl.  
 ‘two certain men’

This fact may indicate that the specific-indefinite determiner is morphophonologically close enough to the Number head to allow fusion.

This suggests that HIRC in Mooré can be considered to be an instance of  $c_3$  sharing by  $C_2P$  and  $D_2P$ . The structure is schematically represented below.

(5.64) The Structure of Object Relativization (HIRC) in Mooré



A question arises immediately as to the nature of T *sen* in Mooré relativization. Supporting evidence for the structure above comes from the difference in the role of *àlì/àtì* in Bùlì and *sen* in Mooré; whereas the former is also utilized for other  $\bar{A}$ -dependencies, the latter is used neither in *Wh*-Questions nor Focus constructions. This leads us to think that *sen* in Mooré is not C, but T, as assumed in Tellier (1989), contra Peterson (1974), Haïk et al. (1985), and Haïk (1990).

### 5.5.2.2 Dagbani

Due to lack of sufficient relevant data of Dagbani, I will give a tentative analysis of Dagbani HIRC, building on the data reported in Wilson (1963) and Peterson (1974). However, it should be noted that the same analysis explains the properties of HIRC in Dagaare that we know of.

The data are repeated here below.<sup>28</sup>

#### (5.65) Dagbani: Relative Clauses (Peterson 1974, 77)

##### a. Object Left-Headed RC

saan-so/san-a                      n nə puhi    la tʃaŋya.  
 stranger-Spec.Id/stranger-D I nə greeted D has-gone  
 ‘The stranger who I greeted has gone.’

##### b. Object HIRC

n nə puhi    saan-so/\*san-a                      la tʃaŋya.  
 I nə greeted stranger-Spec.Id/stranger-D D has-gone  
 ‘The stranger who I greeted has gone.’

The specific-indefinite determiner is obligatory in object HIRC and in object Left-Headed RC.<sup>29</sup> Given the fact that the specific-indefinite determiner inflects for number as shown in the table (5.66), I assume that the structure of the internal head is parallel with the one in Mooré.

#### (5.66) Dem and D in Dagbani

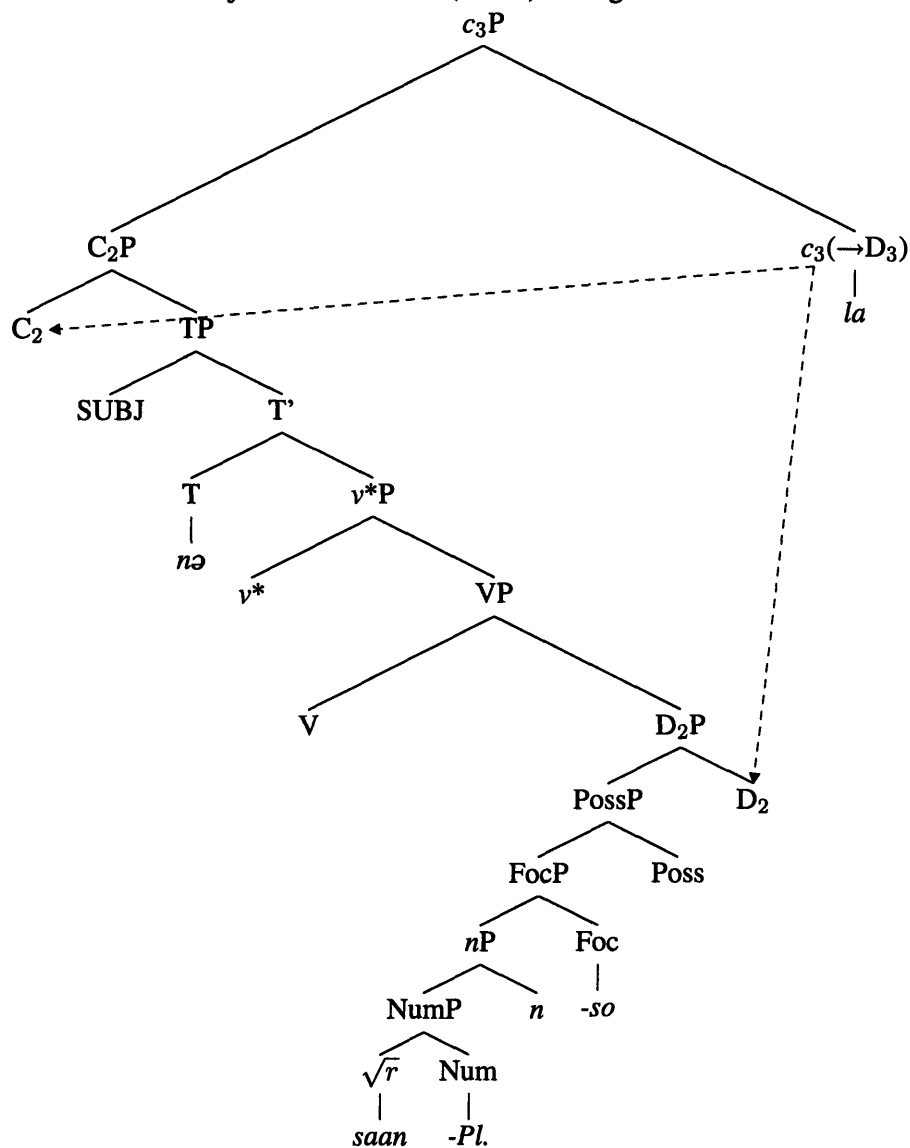
	Id	D	Spec-Id	Dem <sub>prox.</sub>	Dem <sub>dist.</sub>
Sg.	∅	maa/la	so/sheeli	ŋɔ	ŋɔ-ha
Pl.	∅	maa/la	sheba/sheɲa	ŋɔ	ŋɔ-ha

<sup>28</sup>The particle nə is not glossed in Peterson (1974). According to Olawsky (1999), it is a subordination marker.

<sup>29</sup>I do not have an account for why the specific-indefinite determiner is required for Left-Headed RC in Dagbani.



(5.67) The Structure of Object Relativization (HIRC) in Dagbani



The patterns of HIRC in Bùlì, Mooré, and Dagbani are summarized below.

(5.68) Typology of HIRC in Bùlì, Dagbani, and Mooré

	Spec.Id	Dem or D	Comp	v*P
Bùlì	*	Dem	√	*
Dagbani	√	D	*	?
Mooré	√	D	*	√

## 5.6 Two Types of HIRC in Bùlì: In-Situ and Left-Headed

In this section, we turn our eyes to the structure of Left-Headed RC and argue that Left-Headed RC, even though it looks as if it is externally-headed, is actually internally-headed.

The typology of relativization has often been based on a “surface/linear” characterization.

(5.69) Typology of Relativization (see Greenberg 1963, Downing 1978, Keenan 1985)

- a. Post-Nominal Relative Clauses
- b. Pre-Nominal Relative Clauses
- c. Head-Internal Relative Clauses

Bùlì, Mooré, and Dagbani allow HIRC as well as what looks like post-nominal Left-Headed RC, as we have seen.

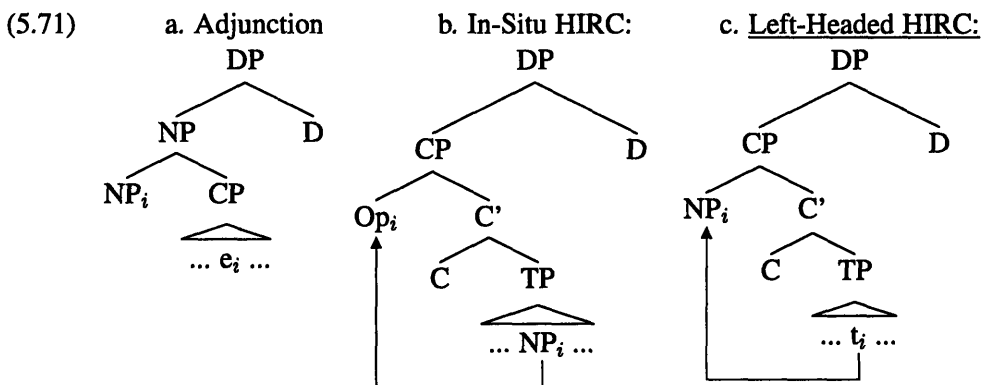
(5.70) a. Bùlì: HIRC

Àmɔ̀ak ɲà [À̀tìm àlɪ/\*àtì s<sup>w</sup>à nā:-būy lá].  
 Àmɔ̀ak saw À̀tìm C own cow-Rel Dem  
 ‘Àmɔ̀ak saw the cow which À̀tìm owns.’

b. Bùlì: Left-Headed RC

Àmɔ̀ak ɲà nā:-būy \*àlɪ/àtì À̀tìm s<sup>w</sup>à lá.  
 Àmɔ̀ak saw cow-Rel C À̀tìm own Dem  
 ‘Àmɔ̀ak saw the cow which À̀tìm owns.’

The surface strings of (5.71a) and (5.71c) are the same. In the structure (5.71a), however, the relativized head is external to the CP clause, whereas in the structure (5.71c) the head is in fact internal to the CP clause.



It is easy to uncover the structure of these clauses in languages with Case-marking. For example, in Diegueño, the question can be solved unambiguously. Consider below.

(5.72) The Mesa Grande dialect of Diegueño: (Gorbet 1976, 56)

- a. [<sup>y</sup>wil<sup>y</sup>+pu 'xaɬ(+∅) n<sup>y</sup>i+m 'tu:] +pu+c n<sup>y</sup>iL<sup>y</sup>cis.  
 rock+Dem dog(+OBJ) that=Comit 1Sg.-hit+Dem+SUBJ black  
 'The rock that I hit the dog with was black.'
- b. \* [<sup>y</sup>wil<sup>y</sup>+pu+c 'xaɬ(+∅) n<sup>y</sup>i+m 'tu:] +pu+c n<sup>y</sup>iL<sup>y</sup>cis.  
 rock-Dem-SUBJ dog(+OBJ) that=Comit 1Sg.-hit+Dem+SUBJ black  
 'The rock that I hit the dog with was black.'

In Diegueño, the head of the relative clause can be at the left edge of the clause. The unavailability of nominative Case-marking, however, indicates that it is still internal to the clause and the entire clause, instead, must be Case-marked by a higher probe.

Thus, it is critically important to ask what structure the Left-Headed RCs in Bùlì (and Mooré and Dagbani) have. This point has quite often been missed in the literature and hence is examined with serious care in the following discussions.

In the following section, I will show that there are several pieces of evidence to indicate that in fact Left-Headed RC in Bùlì has the structure (5.71c), not (5.71a).

### 5.6.1 Adverb Placement

First, adverbs can precede the relativized head noun at the left-edge and take embedded scope. This shows that the dislocated head noun is still internal to the clause.

(5.73) Bùlì: Adverb Placement

- a. Àtìm dè [(dīem) Àm̀àk (dīem) àlì dà mángò-tì: (dīem) lá].  
 Àtìm ate yesterday Àm̀àk yesterday C bought mango-Rel yesterday Dem  
 'Àtìm ate the mango that Àm̀àk bought yesterday.'
- b. Àtìm dè [(dīem) mángò-tì: (dīem) àtì Àm̀àk dà (dīem) lá].  
 Àtìm ate yesterday mango-Rel yesterday C Àm̀àk bought yesterday Dem  
 'Àtìm ate the mango that Àm̀àk bought yesterday.'

### 5.6.2 The Scope of the Negative Particle *-kà-dū*

A second piece of evidence comes from the scope of the negative particle *-kà-dū*. As (5.74a) shows, it forms a negative polarity item with the subject, while it cannot with non-subjects (e.g. the object in (5.74b)). The negative particle takes scope over the subject and yields the interpretation 'No farmers saw Àtìm yesterday.'

(5.74) Bùlì: Negative Particle

- a. kpār<sup>w</sup>ā/kpār<sup>w</sup>a-bā kà-dū nà Àtìm dīem.  
 farmer(Id.Sg.)/farmer-Id.Pl. Neg-LOC saw Àtìm yesterday  
 'No farmers saw Àtìm yesterday.'

- b. \* Àtìm **kà-dū** nà kpār<sup>w</sup>ā/kpār<sup>w</sup>a-bā dīem.  
 Àtìm Neg-LOC saw farmer(Id.Sg.)/farmer-Id.Pl. yesterday  
 ‘Àtìm saw no farmers yesterday.’

Now let us see what happens if we embed (5.74a) as a relative clause as in (5.75). If the relativized head is outside the relative clause, then the negative particle should not be able to take scope over it because of the clause-boundary and it should yield an interpretation ‘The farmers that didn’t see Àtìm yesterday ate the mangos.’. On the other hand, if the relativized head at the left edge is still internal to the clause, the negative particle should take a scope over it and yield an ungrammatical interpretation ‘#No farmers saw Àtìm yesterday and they ate the mangos.’. (5.75) confirms that the second prediction is correct; it only has the ill-formed interpretation where no farmers saw Àtìm yesterday and they ate the mango.’. Hence the relative clause in (5.75) must be internally-headed.

(5.75) Bùlì: Relative Clauses and the Negative Particle

- \* [kpār<sup>w</sup>ā-wā:y/-bā:y **kà-dū** àlì nà Àtìm dīem lá] dè mángò-táná.  
 farmer-Rel(Sg.)/-Rel(Pl.) Neg-LOC C saw Àtìm yesterday Dem ate mango-D.Pl.

- ‘\*No farmer that saw Àtìm yesterday ate the mangos.’  
 ‘\*The farmers that didn’t see Àtìm yesterday ate the mangos.’  
 ‘#No farmers saw Àtìm yesterday and they ate the mangos.’

### 5.6.3 Quantifier Interpretation

Bùlì contrasts with Lakhota in that it allows various kinds of quantifiers on the internal head, while Williamson (1987) shows that “quantified expressions” in the sense of Milsark (1979) are excluded from the internal heads in Lakhota.

In Bùlì, quantifiers attached to the relativized heads must be interpreted internally; the positions of the head noun do yield semantic differences. Note that in the in-situ HIRC (5.76a) and the non-in-situ relative clauses (5.76b) and (5.76c), the interpretation does not change; all of these three sentences mean ‘Amok bought all/some/most of the mangos and Àtìm ate them or just some of them.’; the quantifiers indicate the amount of mangos that Amok bought but never indicate the amount that Àtìm ate. Thus to yield the interpretation ‘Àtìm ate all/most/some the mangos that Amok bought.’, the quantifiers must be placed after the relative clause; namely, in the position following the clause-final demonstrative *la* as in (5.76d), which is clearly outside the relative clause. In that case, the sentence is not committed to the amount that Amok bought; it only indicates the amount that Àtìm ate.

(5.76) a. Bùlì: Quantifiers and Relative Clauses

- Àtìm dè [Àmòak àlì dà **mángò-tī:** **mé:ná/gèlà/yègà** lá].  
 Àtìm ate Àmòak C bought mango-Rel(Pl.) all/some/most Dem  
 ‘Àmòak bought all/some/most (of the) mangos and Àtìm ate them.’

- b. Àtìm dè [mángò-tí: mé:ná/gèlà/yègà àtì Àmòak dà lá].  
 Àtìm ate mango-Rel(Pl.) all/some/most C Àmòak bought Dem  
 ‘Àmòak bought all/some/most (of the) mangos and Àtìm ate them.’
- c. Àtìm dè [mángò-tí: àtì Àmòak dà mé:ná/gèlà/yègà lá].  
 Àtìm ate mango-Rel(Pl.) C Àmòak bought all/some/most Dem  
 ‘Àmòak bought all/some/most (of the) mangos and Àtìm ate them.’
- d. Àtìm dè [mángò-tí: àtì Àmòak dà lá] mé:ná/gèlà/yègà.  
 Àtìm ate mango-Rel(Pl.) C Àmòak bought Dem all/some/most  
 ‘Àtìm ate all/most/some the mangos that Àmòak bought.’

The same is true with numerals. As is the case with the universal quantifier, the numeral explicitly expresses the number of mangos that Amok bought. Thus for the sentences below to be well-formed, it must be the case that Àmòak bought five mangos. Placing the numerals after the demonstrative *lá*, on the other hand, yields an interpretation where the numerals take scope over the relative clause.

(5.77) Bùlì: Numerals and Relative Clauses

- a. Àtìm dè mángò-ta ŋa-nu-tí: àtì Amok dà dīem lá.  
 Àtìm ate mango-Id.Pl. Class.Pron.(Pl.)-five-Rel C Amok bought yesterday Dem  
 ‘Àtìm ate all the five mangos that Amok bought yesterday.’
- b. Àtìm dè Amok àlī dà mángò-ta ŋa-nu-tí: dīem lá.  
 Àtìm ate Amok C bought mango-Id.Pl. Class.Pron.(Pl.)-five-Rel yesterday Dem  
 ‘Àtìm ate all the five mangos that Amok bought yesterday.’
- c. Àtìm dè mángò-tí:/\*-ta-tí: àtì Amok dà dīem lá  
 Àtìm ate mango-Rel/-Id.Pl.-Rel C Amok bought yesterday Dem  
 ŋa-nu.  
 Class.Pron.(Pl.)-five  
 ‘Àtìm ate five of the mangos that Amok bought yesterday.’
- d. Àtìm dè Amok àlī dà mángò-tí:/\*-ta-tí: dīem lá  
 Àtìm ate Amok C bought mango-Rel/-Id.Pl.-Rel yesterday Dem  
 ŋa-nu.  
 Class.Pron.(Pl.)-five  
 ‘Àtìm ate five of the mangos that Amok bought yesterday.’

In contrast with the universal quantifier, however, George Akanlig-Pare reports that the interpretation is strongly preferred where the number of mangos that Àtìm ate is also five. This point merits further investigation. To cancel the maximality effect, one can use *gélá* “some”, which needs to be placed after the relative clause.

(5.78) Bùlì:

- a. Àtìm de **mángò-ta** **ɲa-nu-tí:** àtì Amok dà ðiēm lá  
 Àtìm ate mango-Id.Pl. Class.Pron.(Pl.)-five-Rel C Amok bought yesterday Dem  
**gélá.**  
 some  
 ‘Àtìm ate some of the five mangos that Amok bought yesterday.’
- b. Àtìm de Amok àlī dà **mángò-ta** **ɲa-nu-tí:** ðiēm lá  
 Àtìm ate Amok C bought mango-Id.Pl. Class.Pron.(Pl.)-five-Rel yesterday Dem  
**gélá.**  
 some  
 ‘Àtìm ate some of the five mangos that Amok bought yesterday.’

#### 5.6.4 PP Relativization and Pied-Piping

Finally, PP relativization and Possessor Relativization also support Left-Headed HIRC. Bùlì allows a type of relativization that is not available in English. (5.79a) is an example of in-situ HIRC where the object of the postposition *zuk* “on” is relativized “The roof that I slept on is big.’. In (5.79b), on the other hand, the relativized object of the postposition has been dislocated to the left, leaving the postposition in situ with the resumptive pronoun. What is most significant to note is (5.79c); in this example, the whole PP has been pied-piped to the left edge. If the structure is externally-headed, then the whole PP should be the external head of the relative clause. But a PP cannot be merged as the argument of the matrix predicate *zyuagi* “big”. Thus the grammaticality of (5.79c)-type PP relativization comes as a surprise if the relative clause in question is externally-headed.

(5.79) Bùlì: PP-Relativization

- a. [n̄ àlī gwà **gbòŋ-kū:y** zúk lá] zyùàyi.  
 1Sg. C slept roof-Rel on Dem be-big  
 ‘The roof that I slept on is big.’
- b. [**gbòŋ-kū:y** àtì n̄ gwà \*(kù) zúk lá] zyùàyi.  
 roof-Rel C 1Sg. slept 3Sg. on Dem be-big  
 ‘The roof that I slept on is big.’
- c. [**gbòŋ-kū:y** zúk àtì n̄ gwà lă] zyùàyi.  
 roof-Rel on C 1Sg. slept Dem be-big  
 ‘The roof that I slept on is big.’

#### 5.6.5 Possessor Relativization and Pied-Piping

The same point holds in the case of possessor relativization in (5.80). (5.80a) is an example of in-situ possessor HIRC. (5.80b) is a case of relativization where the possessor has been relativized and dislocated to the left of the complementizer, with the resumptive pronoun left in-situ. (5.80c) is the crucial example here, where the whole possessor-possessee complex has been pied-piped to the left of the complementizer, although the relativized head is the possessor alone.

(5.80) Bùlì: Possessor Relativization

- a. Àtìm dà [Àmòak àlì ηmìrìsì gbán-kā:y nà:η-ká lá].  
 Àtìm bought Àmòak C designed book-Rel cover-D Dem  
 ‘Àtìm bought the book whose cover Àmòak designed.’
- b. Àtìm dà [gbán-kā:y àtì Àmòak ηmìrìsì \*(kà) nà:η-ká lá].  
 Àtìm bought book-Rel C Àmòak designed 3Sg. cover-D Dem  
 ‘Àtìm bought the book whose cover Àmòak designed.’
- c. Àtìm dà [gbán-kā:y nà:η-ká àtì Àmòak ηmìrìsì lá].  
 Àtìm bought book-Rel cover-D C Àmòak designed Dem  
 ‘Àtìm bought the book whose cover Àmòak designed. (cf. ‘\*Àtìm bought the book’s cover that Àmòak designed’ to mean ‘Àtìm bought the book’.)’

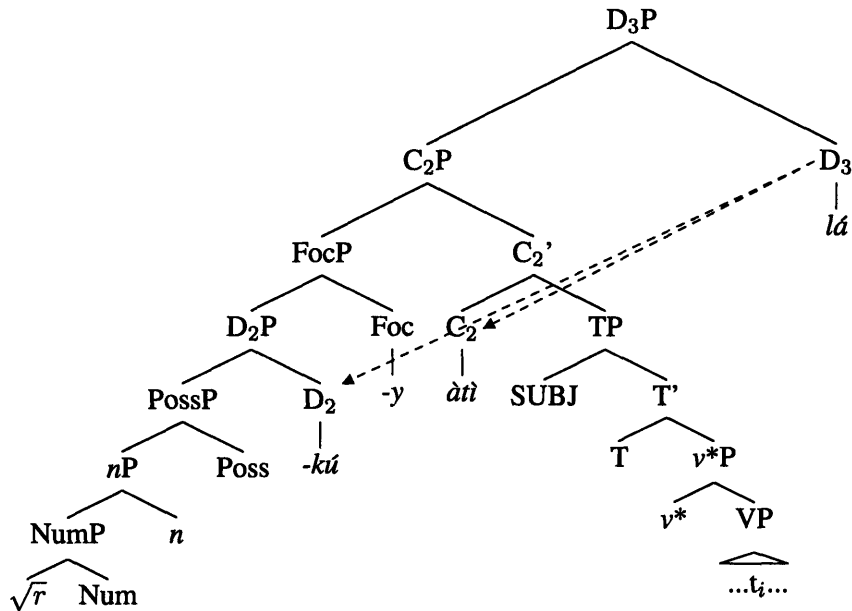
This indicates, again, that the element moved to [Spec, CP] is still internal to the clause.

To conclude the discussions, several pieces of evidence demonstrate that what looks like Left-Headed RC in Bùlì is actually internally-headed with the relativized head noun dislocated to the edge of the relative clause. We will term this kind of HIRC *Left-Headed HIRC*.

(5.81) Bùlì has two types of HIRC: In-Situ HIRC and Left-Headed HIRC.

The structure for the Left-Headed HIRC is represented as follows.

(5.82) The Structure of Object Relativization (Left-Headed HIRC)



## 5.7 “Masked” HIRC: Left-Headed HIRC in Gureɛ and Dàgáárè

In the preceding section, we have demonstrated that Bùlì has two kinds of HIRC: in-situ HIRC and Left-Headed HIRC.

This, in turn, requires a thorough reconsideration of the structure of relative clauses in the languages of the world. In particular, it becomes a serious question whether languages that have been considered to disallow HIRC allow Left-Headed HIRC. In this section, we will examine two such languages, Gureɛ and Dàgáárè and uncover the existence of masked HIRCs.

### 5.7.1 Other Gur Languages That Disallow In-Situ HIRC

As we have seen above, not all the Gur languages allow HIRC. Gureɛ and Dàgáárè, for example, do not allow in-situ HIRC.

(5.83) Gureɛ: (Atintono 2002, 2003, S. Atintono p.c.)

[**bu**-**la** **z**a **ti** **A**tia **da'** **da'**a **la**] **b**oi **m**ɛ.  
goat-D yesterday C Atia buy market D lose Cfp

‘The goat that Atia bought at the market got lost.’

(5.84) Dàgáárè: (Bodomo and Hiraiwa 2004)

̀ **n** **d**à **s**óré **l**á [(à) **g**ánè (ná) **D**àkóráà **n**áng **n**gmàà **d**èyàng].  
1Sg. Pst read F D book Dem Dakoraa Rel write last-year

‘I read the book that Dakoraa wrote last year.’

Information in the literature leads us to think that Kɔ̀nni and Sisaala-Passale do not allow HIRC, either.

(5.85) Kɔ̀nni: (Cahill 1999)

**naa** **y**i [**v**ɔ̀rɪ**k**a **f**i **y**ala].  
pick give person you want

‘Give it to the person you want.’

(5.86) Sisaala-Pasaale: (Stuart McGill and Toupin 1999, 135)

**ku**wori **h**a **b**i **n**a [**b**iŋ **h**u **u** áá **k**yɛ].  
chief still Neg see faces D he IMPF want

‘The chief still didn’t see the faces he was wanting.’

In Gureɛ, the relativized head must always come at the left-edge of the relative clause.



(5.87) Gurene: (Atintono 2003)

a. Left-Headed RC

**bu**a la ti kɔɔsa la da' da'a la bɔi mɛ.  
goat D Rel trader D buy market Foc lose Cfp  
'The goat that the trader bought is lost.'

b. \*HIRC

\* kɔɔla sa n/ti da' **bu**a la da'a la bɔi mɛ.  
trader D Rel buy goat D market Foc lose Cfp  
'The goat that the trader bought is lost.'

(5.87b) indicates that no HIRC is allowed in Gurene; in (5.87a), the noun left of the particle *ti* is necessarily interpreted as the head of the relative clause.

Dàgáàrè patterns with Gurene. The head of the relative clause must come to the left of the relative clause.

(5.88) Dàgáàrè: (Bodomo and Hiraiwa 2004)

a. Left-Headed RC

̀̀n dà sɔ́rɛ lá (à) **g**ánè (ná) Dàkóràà náng ngmàà dèyàng.  
1Sg. Pst read F D book Dem Dakoraa Rel write last-year  
'I read the book that Dakoraa wrote last year.'

b. \*HIRC

\* ̀̀n dà sɔ́rɛ lá [à Dàkóràà náng ngmàà **g**ánè (kámgà) dèyàng].  
1Sg. Pst read F D Dakoraa Rel write book Id last-year  
'I read the book that Dakoraa wrote last year.'

### 5.7.2 Possessor Relativization and PP Relativization

The same diagnostic tests show that the relative clauses in question are internally-headed –Left-Headed HIRC in Gurene and Dàgáàrè. Consider Possessor Relativization and PP Relativization, respectively.

(5.89) Gurene: Possessor Relativization

a. Mam nye **budaa-la** ti nayigesi la zu \*(a) ligeri la.  
1Sg. see man-D Rel thieves D steal 3Sg. money D  
'I saw the man whose money the thieves stole.'

b. Mam nye **budaa-la** ligeri la ti nayigesi la zu.  
1Sg. see man-D money D Rel thieves D steal  
'I saw the man whose money the thieves stole.'

## (5.90) Gurene: PP-Relativization

- a. **Bɔ-la** ti Atia ga'ane \*(ku) zuo la dela kate.  
 roof-D Rel Atia slept 3Sg. on F be big  
 'The roof on which Atia slept is big.'
- b. **Bɔ-la** zuo ti Atia ga'ane la dela kate.  
 roof-D Rel on Atia slept F be big  
 'The roof on which Atia slept is big.'

## (5.91) Dàgáárè: Possessor Relativization (Bodomo and Hiraiwa 2004)

- a. ñ dà nyé lá **a-pɔɔɔ-ná** ŋ nàng sóré \*(ò) gánè dèyâng.  
 1Sg. Pst saw F D-woman-Dem 1Sg. Rel read 3Sg. book last-year  
 'I saw the woman whose book I read last year.'
- b. ? ñ da nye la **à-pɔɔɔ-ná** gánè ŋ nang sore dèyâng.  
 1Sg. Pst saw F D-woman-Dem book 1Sg. Rel read last-year  
 'I saw the woman whose book I read last year.'

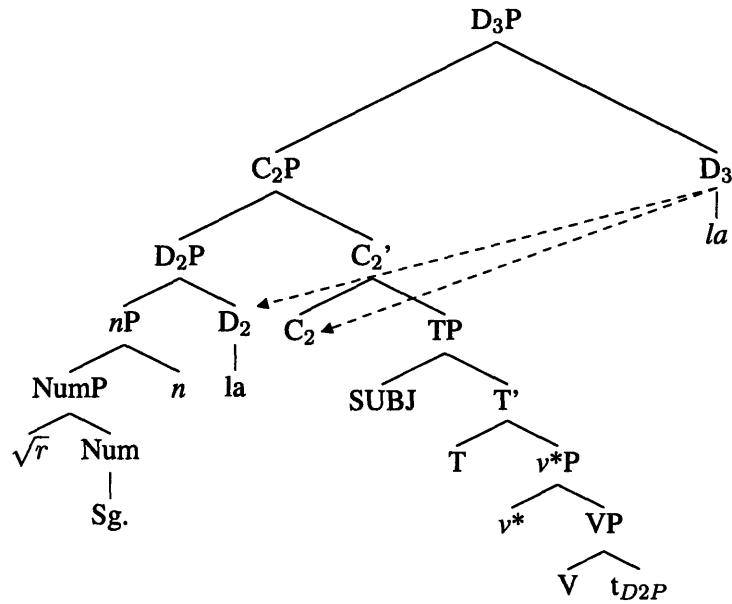
## (5.92) Dàgáárè: PP-Relativization (Bodomo and Hiraiwa 2004)

- a. **à-pèé-ná** zû Dàkòráá náng gâng é lá kpông.  
 D-roof-Dem on Dakoraa Rel lie.PERF be F big  
 'The roof top on which Dakoraa slept is big.'
- b. **à-pèé-ná** Dàkòráá náng gâng \*(ò) zû é lá kpông.  
 D-roof-Dem Dakoraa Rel lie.PERF 3Sg. on be F big  
 'The roof top on which Dakoraa slept is big.'

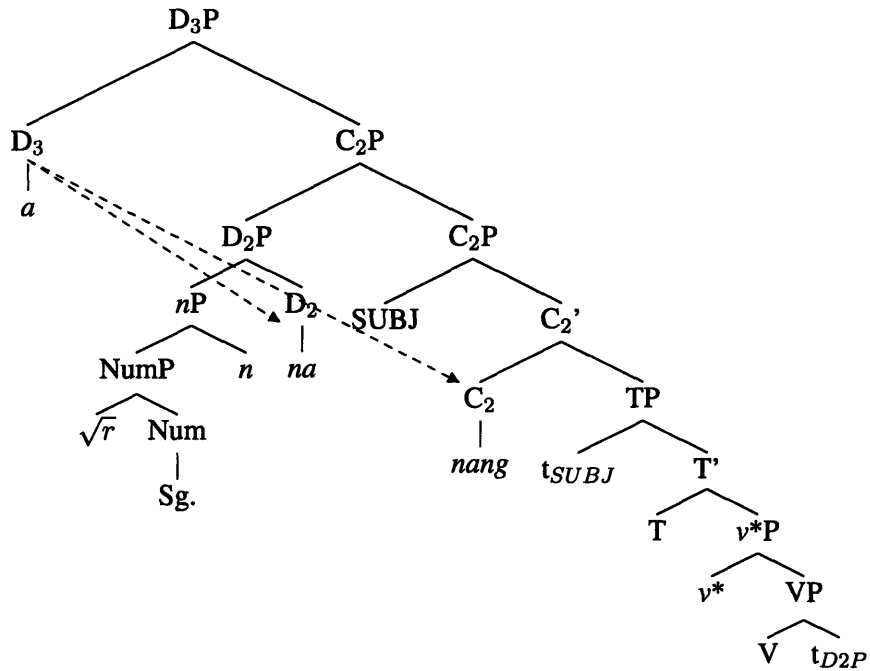
Both languages allow relativization of PP and possessors with pied-piping. This indicates that Left-Headed RC in these languages at least allows a derivation where the head noun is internally dislocated to the left-edge of the clause.<sup>30</sup>

<sup>30</sup>Adverb placement tests, however, fail in both languages: adverbs cannot precede the left-edge relativized head noun. For a detailed study of Dàgáárè relativization, see Bodomo and Hiraiwa (2004).

(5.93) The Structure of Gurene Object Relativization (Left-Headed HIRC)



(5.94) The Structure of Dagaare Object Relativization (Left-Headed HIRC)



## (5.95) Summary of Relativization in Gur Languages

	Poss-RC	PP-RC	Adverb	Q-Interpretation	Determiner
Bùlì	✓	✓	✓	CP-internal	Dem
Mooré	✓	✓	?	?	D
Dagbani	✓	✓	?	?	D
Dàgáàrè	✓	✓	*	Ambiguous	D
Gurenè	✓	✓	✓	Ambiguous	Dem

## (5.96) Typology of HIRC in Gur Languages

In-Situ HIRC	Left-Headed HIRC	HERC	Languages
✓	✓	*	Bùlì, etc.
✓	✓	?	Mooré, Dagbani, etc.
*	✓	✓	Dàgáàrè, Gurenè etc.

## 5.8 Typological Implications

Having established that there are two types of HIRC in Gur, we are now ready to re-examine some typological implications of our conclusion.

### 5.8.1 Two Strategies of HIRC

We have shown that HIRC in Gur uses two strategies. One is sharing by D. Another strategy that some languages of the world employ is nominalization. This is attested in languages without any overt definite determiners such as Japanese, Quechua, and Navajo.<sup>31</sup>

## (5.97) Strategies of Head-Internal Relativization

Demonstrative	Bùlì, Georgian, Digenō
Definite Determiner	Mooré, Dagbani, Lakhota,
Nominalization	Japanese, Quechua, Navajo,

Some examples of the nominalized-type HIRC are illustrated below.

## (5.98) Navajo (Platero 1974, 209)

ashkii téechą́'í yitztał-éé nahał'in  
 boy dog 3-Perf-3-kick-Rel Imp-3-bark

'The dog that the boy kicked is barking.'

## (5.99) Cuzco Quechua: (Lefebvre and Muysken 1988)

[ Xwancha-q runa-∅ riku-sqa-n] wasi-ta rura-n  
 Juan-Gen man-OBJ see-Nml-3 house-Acc build-3

<sup>31</sup>Lakhota uses both definite determiners and demonstratives: [[[CP ..... NP-Rel .....] D ] Dem]

‘The man that Juan saw builds a house’

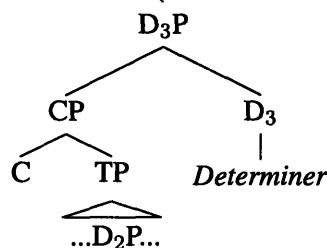
To the best of my knowledge, there are no languages that do not use any of these strategies for HIRC. If this is true, we expect to find a principled explanation for this limited cross-linguistic variation. I suggest that this reduces to Case Theory, where a single noun cannot get its uCase valued more than once; namely, the prohibition against *many-to-one* Case relations (see Chapter 2 and Hiraiwa to appear). Given that the locus of uCase is uniform from language to language, these strategies are a reflection of the strategies to avoid Case Filter violation.<sup>32</sup>

Section 5.4 argued that in the Gur-type HIRC, the lower determiner  $D_2$  of the internal head gets its uCase valued clause-internally and the higher determiner  $D_3$  gets its uCase valued clause-externally. The nominalization strategy basically does the same job. In Chapter 1, I have proposed that each of  $c_3$ ,  $c_2$ , and  $c_1$  in (5.45), which are phase heads, function as a category-determining head –nominalizer or verbalizer. The phase theory of nominalization leads us to think that these three varieties of HIRC strategies are instances of a single mechanism: nominalization by  $D_3$ , with the surface differences reduced to morphological variation (i.e. whether  $c$  is realized as a determiner or a nominalizing suffix).<sup>33</sup>

- (5.100) a. Bùlì-type  
 $D_3$ (=definite demonstrative) has uCase for HIRC-external relations and  $D_2$  has uCase for HIRC-internal relations.
- b. Mooré-type  
 $D_3$ (=definite determiner) has uCase for HIRC-external relations and  $D_2$  has uCase for HIRC-internal relations.
- c. Japanese/Quechua-type  
 $D_3$ (=nominalizer) has uCase for HIRC-external relations and  $D_2$  has uCase for HIRC-internal relations.

The two kinds of nominalizations are schematically represented as follows.

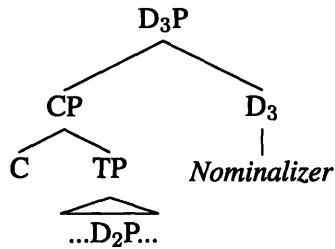
(5.101) HIRC in Gur (Bùlì and Mooré)



<sup>32</sup>The same holds of  $\theta$ -Theory, as well.  $D_3$  and  $D_2$  function as internal and external  $\theta$ -role assignees, respectively.

<sup>33</sup>See Chapter 3 for much empirical evidence that the C/Nominalizer *no* in Japanese HIRC is a morphological reflex of genitive Case, because it is a locus of uCase. This is indeed expected, if the nominalizer is a realization of  $C_3$ .

## (5.102) HIRC in Japanese/Quechua/Navajo



## 5.8.2 A New Typology of Relativization

The typology of HIRC needs to be reconsidered in terms of structural positions of internal heads, in particular in the light of the existence of Left-Headed HIRC.<sup>34</sup> On this view, relative clauses are classified according to the syntactic positions of their head nouns, rather than based on linear relations between head nouns and relative clauses.

## (5.103) Typology of Relative Clauses

- a. Head-External Relative Clauses (HERC)
  - i. Right-Headed (e.g. Japanese, Korean, Turkish, ...)
  - ii. Left-Headed (e.g. English, French, Italian, ...)
  - iii. Medially-Headed (None)
- b. Head-Internal Relative Clauses (HIRC)
  - i. In-situ (e.g. Bùlì, Mooré, Japanese, Cuzco Quechua, Lakhota, Mojave, Diegueño, Tamaina, Koyukon, ...)
  - ii. Left-Headed (e.g. Bùlì, Mooré, Digueño, Mojave, Cuzco Quechua, Tamaina, Koyukon, Lakhota<sup>35</sup>, ...)
  - iii. Medially-Headed (e.g. Mooré, Cocopa, ...)
  - iv. Right-Headed (None)

Significantly, whereas the typology of HERC remains the same, the picture reveals a more fine typology of HIRC. HIRC now comes in three varieties: Left-Headed, Medially-Headed, and In-situ HIRCs.

## (5.104) Positions of NP-Rel

- a. [*DP* NP-Rel [*CP* ..... ] ] (HERC)
- b. [*DP* [*CP* NP-Rel [*C'* ..... ] ] ] (Left-Headed HIRC)
- c. [*DP* [*CP* [*vP* NP-Rel [*v'* ..... ] ] ] ] (Medially-Headed HIRC)
- d. [*DP* [*CP* [*vP* ..... NP-Rel ..... ] ] ] (In-situ HIRC)

<sup>34</sup>Hastings (2004) has also discovered that relative clauses in Cuzco Quechua are left-headed. See Hastings (2004) for detailed discussions.

<sup>35</sup>Williamson (1987, 188;ff3) notes that some speakers prefer the head in clause-initial position.

The following table shows the distribution of each type of HIRC.

## (5.105) Typology of the Position of NP-Rel

	HERC	HIRC (CP)	HIRC (vP)	HIRC (in-situ)
Bùlì	*	✓	*	✓
Mooré	?	?	✓	✓
Dieguenõ	?	✓	*/✓	✓
Japanese	✓	✓	?	✓
Quechua	✓	✓	?	✓

The three positions for internal heads in HIRC fall in place if movement of them is driven by some  $\bar{A}$ -features, presumably Op-features. [Spec, CP] is the most natural position to target and hence Left-Headed HIRC is attested.

Gorbet (1976, 53) observes that the Mesa Grande dialect of Diegueño uses an optional head-fronting strategy to disambiguate HIRC. Whereas the sentence is ambiguous in the normal order (5.106), fronting to the edge of the clause disambiguates the sentence as in (5.107).

## (5.106) Diegueño:

[**xat**cok(+ $\emptyset$ ) **wi:m**      tuc]+pu+c      n<sup>y</sup>L<sup>y</sup>.  
dog(+OBJ) rock+Comit 1Sg-hit+Dem+SUBJ black

'The rock that I hit the dog with is black.'

'The dog that I hit with the rock is black.'

## (5.107) Mesa Grande dialect of Diegueño: (Gorbet 1976, 53)

[<sup>y</sup>wil<sup>y</sup> 'xat(+ $\emptyset$ )      n<sup>y</sup>i+m      'tu:]+pu+c      n<sup>y</sup>iL<sup>y</sup>cis.  
rock dog(+OBJ) that=Comit 1Sg.-hit+Dem+SUBJ black

'The rock that I hit the dog with was black.'

As shown in (5.108), the fronted head can neither be marked with the demonstrative nor get Case from outside the clause. This strongly indicates that the element moved to the edge of CP is still inside the clause.

## (5.108) Mesa Grande dialect of Diegueño: (Gorbet 1976, 56)

a. \* [<sup>y</sup>wil<sup>y</sup>+**pu** 'xat(+ $\emptyset$ )      n<sup>y</sup>i+m      'tu:]+pu+c      n<sup>y</sup>iL<sup>y</sup>cis.  
rock+Dem dog(+OBJ) that=Comit 1Sg.-hit+Dem+SUBJ black

'The rock that I hit the dog with was black.'

b. \* [<sup>y</sup>wil<sup>y</sup>+**pu+c** 'xat(+ $\emptyset$ )      n<sup>y</sup>i+m      'tu:]+pu+c      n<sup>y</sup>iL<sup>y</sup>cis.  
rock-Dem-SUBJ dog(+OBJ) that=Comit 1Sg.-hit+Dem+SUBJ

'the rock that I hit the dog with was black.'

The same disambiguation strategy with movement to the edge of the relative clause is also available in Mojave.

## (5.109) Mojave: (Munro 1976)

- a. masahay **ahvay** ?-u:ay-n<sub>y</sub>-č      ?ahot-m.  
 girl      dress I-give-Dem-SUBJ good-T  
 ‘The girl I gave the dress to is nice’  
 ‘The dress that I gave to the girl is nice.’
- b. **ahvay** masahay ?-u:ay-n<sub>y</sub>-č      ?ahot-m.  
 dress girl      I-give-Dem-SUBJ good-T  
 ‘\*The girl I gave the dress to is nice’  
 ‘The dress that I gave to the girl is nice.’

The difference between Diegueño/Mojave and Dàgáárè/Gureñ is that in the latter languages, “disambiguation” –movement to the edge of CP– is always obligatory.

Compared with Left-Headed HIRC, Medially-Headed HIRC appears to be extremely rare. The only examples that I know of are Cocopa, the Imperial Valley dialect of Diegueño (Gorbet 1976, 60-61) and Mooré (reported based on the parasitic gap data in Tellier (1989)). In the examples of Cocopa below, notice that the shifting of *xaṭ* “dog” makes the sentence perfectly grammatical (compare (5.110b) and (5.110c)), while the normal word order is as in (5.110a). The shifting operation also disambiguates the sentence, as the interpretative differences between (5.110c) and (5.110d) show.

## (5.110) Cocopa: (Gorbet 1976, 60)

- a. John xu:r ya:t xaṭ pacu:t.  
 John rock      dog hit  
 ‘John hit the dog with a rock.’
- b. ? John xu:r (ya:t) xaṭ pa:cu:s-p-t<sup>y</sup>      u:n<sup>y</sup>iL<sup>y</sup> cis.  
 John rock      dog hit-Dem-SUBJ black.Emph  
 ‘The dog John hit with the rock was black.’
- c. John xaṭ su:r pa:cu:s-p-t<sup>y</sup>      u:n<sup>y</sup>iL<sup>y</sup> cis.  
 John dog rock hit-Dem-SUBJ black.Emph  
 ‘The dog John hit with the rock was black.’
- d. John xu:r xaṭ pa:cu:s-p-t<sup>y</sup>      u:n<sup>y</sup>iL<sup>y</sup> cis.  
 John rock dog hit-Dem-SUBJ black.Emph  
 ‘The rock John hit the dog with was black.’

The Imperial Valley dialect of Diegueño presents another case where “partial movement” of the internal head to a position other than [Spec, CP] is observed. In the example below, the head noun ‘*wa:-k* “house” has been moved out of its original position, but is located still below the subject.

## (5.111) Imperial Valley dialect of Diegueño (Gorbet 1976)

- a. i:pac ‘wa:-k      wyiw.  
 man house-ABL come  
 ‘The man came from the house.’



- b. i:pac **wa:-k** n<sup>y</sup>i-k      wyiw-pu-c      n<sup>y</sup>imsap.  
 man house that-ABL come-Dem-SBUJ white  
 ‘The house that the man came from is white.’

The rarity of Medially-Headed HIRC is understandable in the light of the fact that HIRC involves  $\bar{A}$ -movement and that partial  $\bar{A}$ -movement to the edge of  $\nu^*P$  is extremely scarce cross-linguistically. The only case of partial  $\bar{A}$ -movement to the edge of  $\nu^*P$ , to my knowledge, is Apache, an Athabaskan language. In this language, in double-object constructions the direct object can precede the indirect object iff the former is a *Wh*-phrase.<sup>36</sup>

(5.112) Apache: Partial *Wh*-Movement (Potter 1997)

- a. # Isdzan **chách’il ishkiin** yaayiné’.  
 woman acorn boy 3Sg.Perf.give  
 ‘#The woman gave a boy to the acorn.’
- b. Isdzan **ishkiin hant’é** yaayiné’?  
 woman boy what 3Sg.Perf.give  
 ‘What did the woman give the boy?’
- c. **Hant’é<sub>i</sub>** isdzan **ishkiin t<sub>i</sub>** yaayiné’?  
 what woman boy 3Sg.Perf.give  
 ‘What did the woman give the boy?’
- d. Isdzan **hant’é<sub>i</sub> ishkiin t<sub>i</sub>** yaayiné’?  
 woman what boy 3Sg.Perf.give  
 ‘What did the woman give the boy?’

Finally, let us consider *Right-Headed HIRC*. To the best of my knowledge, Right-Headed HIRC has not been attested. For example, consider Quechua relative clauses.<sup>37</sup>

(5.113) Quechua (Cole 1987, 277)

- a. HERC  
 nuna ranti-shaq-n bestya      alli bestya-m ka-rqo-n.  
 man buy-Perf.-3 horse(NOM) good horse-EVD be-PAST-3  
 ‘The horse that the man bought was a good horse.’
- b. nuna bestya-ta ranti-shaq-n alli bestya-m ka-rqo-n.  
 man horse-ACC buy-Perf-3 good horse-EVD be-PAST-3  
 ‘The horse that the man bought was a good horse.’

<sup>36</sup>The prediction is that in Mooré, *Wh*-movement also allows partial movement to the edge of  $\nu^*P$ . The data needs to be investigated in future research. Also, Navajo, a language closely related to Apache, has HIRC. Thus it will be interesting to see if Apache allows HIRC, and if it does, if Medially-Headed HIRC is attested.

<sup>37</sup>Hastings (2004) has discovered that quantifier interpretations in HIRC differ between strong and weak quantifiers in Quecha. I refer the reader to Hastings (2004) for a detailed study and leave the matter open here.

It is impossible in (5.113a) for the relativized head *bestya* ‘horse’ to get assigned Accusative Case-marking. The same situation is true in Japanese, etc.. Note that under Kayne’s antisymmetric view, nothing prevents Left-Headed HIRC from being formed in human languages. The absence of Right-Headed HIRC follows if the operation Merge is properly constrained in grammar.

First, it is not possible for complements of phase heads to be moved since these heads are category-determiners under our theory, and hence cannot be stranded (See Chapter 6 for predicate clefts, where this restriction is satisfied in an interesting way). Secondly, by assumption, it is not licit to move a segment of a category. This is further expected, if *Wh/Focus*-movement is uniformly to the left and there is no remnant movement allowed, which seems to be well-established.<sup>38</sup> Thus, there should be no licit way of deriving Right-Headed HIRC.

## 5.9 Factive Constructions and Nominalization

On the face of this hypothesis, the fact that cross-linguistically, HIRC often yields another interpretation –namely, what Collins (1994) called *Factive* for Factive constructions in Kwa languages–naturally follows. The literature diverges on the terms for this construction; Collins (1994) calls it *Factive Construction*, Tellier (1989) dubs it a *Nominalized/Clausal reading*, and in the Japanese linguistics, it is called a *Cognitive Verb Complement*. Since this type of construction does not necessarily imply *factivity* and it does not always require cognitive verbs, either, I will adopt a neutral term *clausal reading*, rather than *factive reading*.

For example, the following Bùlì sentences cannot have both interpretations at the same time, while in Mooré, the sentence in question is in principle ambiguous between the relative reading and the nominalized clausal reading.<sup>39</sup>

(5.114) Bùlì:

a. Factive

[Àtìm àlī dè mángò-kú lá] tẹ̀ Àmòak pò pièntì.  
 Àtìm C ate mango-D Dem gave Àmòak’s stomach whiten

‘That Àtìm ate the mango pleased Àmòak.’

‘\*The mango that Àtìm ate pleased Àmòak.’

b. HIRC

[Àtìm àlī dè mángò-kú:-y lá] tẹ̀ Àmòak pò pièntì.  
 Àtìm C ate mango-D Dem gave Àmòak’s stomach whiten

‘\*That Àtìm ate the mango pleased Àmòak.’

‘The mango that Àtìm ate pleased Àmòak.’

<sup>38</sup> American Sign Language (ASL) has often been reported to have *Wh*-movement to the right and to allow HIRC. It remains to investigate the syntax of ASL.

<sup>39</sup> I have no relevant data about Dagbani at this moment.

(5.115) Mooré: Factive (Tellier 1989, 307)

m̄n m̄ī [fó s̄én tó b̄īg (níngá) záámé w̄á].  
 1Sg. know 2Sg. C insult child Spec.Id yesterday D

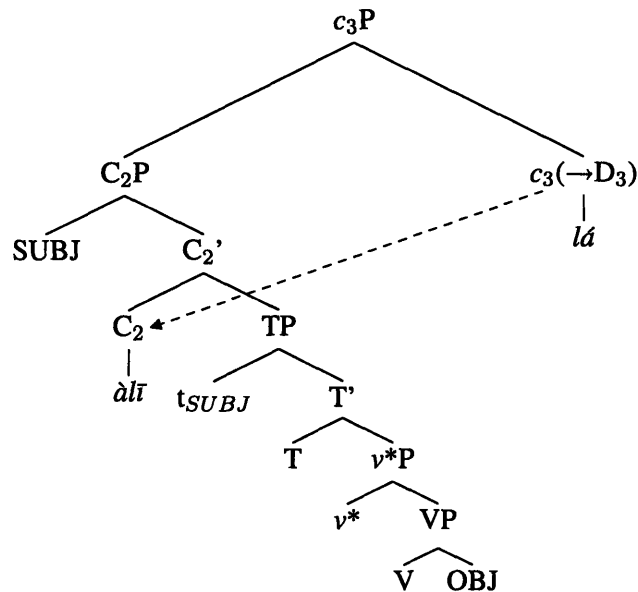
'I know that you insulted the child yesterday.'

'I know the child that you insulted yesterday.'

In Bùlì, the Factive is minimally different from HIRC in that there is no internal head marked by the relativizing suffix *-y*. Tellier (1989) also observes that in Mooré, a clausal reading is only available when there is no head marked by *-ninga* for some people, while for others, a clausal reading is still available even with the presence of a *-ninga*-marked element. What is common to these two languages is the fact that HIRC and the Factive are quite similar in their morphology and syntax.

We have argued that multiple selection by D/Dem is the key for a language to instantiate HIRC. In HIRC, therefore, D/Dem is shared by "clause" (the relative clause) and "nominal" (the relative head noun). One may wonder what would happen if D/Dem is only "shared" by the whole clause in the absence of any relative head noun. I argue that this is an instance of a Factive Construction.

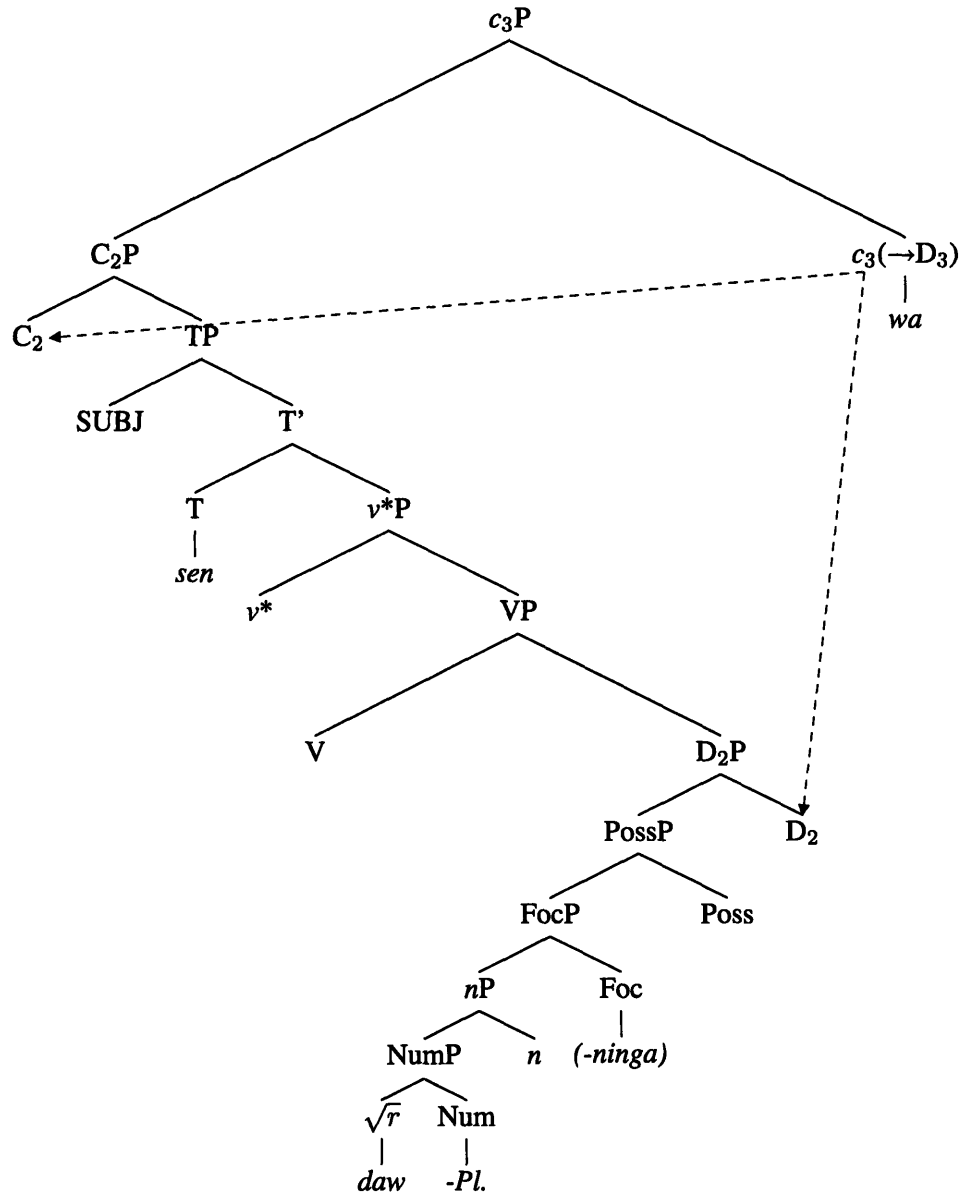
(5.116) The Structure of Bùlì Factive Construction



In Mooré, on the other hand, the two readings, relative and clausal, exactly correspond to the

two selectional relations at LF in (5.117).

(5.117) The Structure of Mooré Factive Construction



As we have seen, a relative reading (HIRC) is a consequence of interpreting the selection relation  $D_3$ - $D_2$  at LF. If, on the other hand, the relation  $D_3$ - $C_2$  is interpreted, it gives rise to a clausal reading. The proposed analysis provides theoretical support for Culy's observation that there is a close correlation between the availability of HIRC and the availability of clausal readings.<sup>40</sup>

<sup>40</sup>LF requires one and only one of the relations to be selected, since simultaneity results in semantic crash.

Culy (1990) observes that there is a close correlation between HIRC and the Factive (see also Collins 1994).

(5.118) Culy's Generalization (Culy 1990, 203)<sup>41</sup>

A language will have IHRCs (K.H.: Internally-Headed Relative Clauses) only if it also has other similar nominalized sentences with the independent properties.

Additional examples are illustrated below from the class of languages that use a nominalizing suffix in HIRC and the Factive.

(5.119) Factives

a. Mojave: (Munro 1979)

makhaav m-nyahuu'aak-n<sup>v</sup> suupaw-m.  
Mojave 2-marry.NML-Dem 1Sg.know-T

'I know that you married a Mojave.'

'I know the Mojave (woman) that you married.'

b. Japanese:

Taro-wa Hanako-ga nihon-ryoori-wo tsukut-ta no-wa mi-ta.  
Taro-TOP Hanako-NOM Japanese-dish-ACC cook-Pst NML see-Pst

'Taro saw Hanako cooking a Japanese dish.'

'Taro saw the Japanese dish that Hanako cooked.'

c. Navajo: (Platero 1974)

hastiin téechąą nishxashi-ígíí yi-ífnii'.  
man dog 2.Perf.3.bite-Nml 3.Perf.3.hear

'Tha man heard about the fact that the dog bit you.'

d. Cuzco Quechua: (Lefebvre and Muysken 1988)

Xwan-pa hamu-sqa-n-qa manchari-chi-wa-n-mi.  
Juan-Gen come-Nml-3-Top afraid-Caus-1Obj.-3-Af

'That John has come frightens me.'

These considerations, if on the right track, lead us to re-examine the fine structure of relativization in Kwa languages (Ewegbe, Gungbe, Yoruba, Igbo etc.), which according to Collins (1994) allow clausal readings of relative clauses. The relative clauses in these languages, however, do not allow in-situ HIRC. The question is, then, whether Left-Headed RC in Kwa is really externally-headed or it is in fact Left-Headed HIRC. Since this task, although extremely interesting, goes far beyond the scope of this thesis, I leave it for future research. The prediction of our theory is that relative clauses in Ewe, etc. are head-internal with the relativized head fronted to the initial position, presumably [Spec, CP], which makes the relative clause apparently look like HERC.

<sup>41</sup>Furthermore, I assume that Multiple Selection is subject to 'feature-matching'. Thus,  $\phi$ -features of the external Dem and the internal D match. A problem is that we have to say that feature values matter here. Another possibility is that in fact some languages show feature-mismatch in RC.

## 5.10 Remaining Issues: Cole's Generalization –Gur and Beyond–

In this final section, we first overview previous approaches to the typology of HIRC and then critically examine their empirical validity.

### 5.10.1 Gur and HIRC

A subgroup of the Gur languages in the Niger-Congo family spoken in West Africa is interesting in that they allow Head-internal Relative Clauses (HIRC). These languages include at least Bùlì (Hiraiwa 2003d), Mooré (Peterson 1974, Tellier 1989), and Dagbani (Wilson 1963), and Supyire (Carlson 1994). A subgroup of the Mande languages in the Niger-Congo family also allow HIRC. These include Dogon (Culy 1990), Bambara (Bird 1966, 1968, Koopman 1992), and Manika (Bird 1966, 1968). As far as I am aware, none of the Kwa languages of the Niger-Congo family allow HIRC.

(5.120) Bùlì:

Àtìm nyà [núrí-wá àlì/\*àtì s<sup>w</sup>à ná:-būy lá].  
 Àtìm saw man-D C own cow-Rel Dem

‘Àtìm saw the cow which the man owns’

(5.121) Mooré: (Peterson 1974)

[fo sē yā daw-ninga zaamē wā] kula me.  
 2Sg. C saw man-Spec.Id yesterday Dem went-home ME

‘The man who you saw yesterday went home.’

(5.122) Dagbani: (Peterson 1974)

[n nə puhi saan-so/\*san-a la] tʃaŋya.  
 1Sg. nə greeted stranger-Spec.Id/stranger-D LA has-gone

‘The stranger who I greeted has gone.’

(5.123) Supyire: (Carlson 1994)

ali níŋjǎà [jínàŋa à yaagé `ŋké-mù kàlǐfá ú ná ge], kuru na  
 even today jinn-D PERF thing-D Dem(G2S)-Rel entrust him on Rel it(Emph) Prog  
 wá aní.  
 be.there there

‘Even today, the thing which the jinn entrusted to him is there.’

Those Gur languages that do not allow HIRC include Dàgáárè (Bodomo 1997), Sisaala-Pasaale (Stuart McGill and Toupin 1999), and Gurenɛ/Frafra (Atintono 2002, 2003), Kurumfe (Rennison

1997), and Kɔ̀nni (Cahill 1999).<sup>42</sup> In the preceding sections, I have demonstrated that at least some of those languages –Dàgáárè and Gurenɛ– allow another kind of HIRC: Left-Headed HIRC.

Outside West Africa, HIRC has been observed in a wide range of languages across families. These include Old and Modern Japanese (Kuroda 1992, 1999, 2000, Watanabe 2003), Korean (Jhang 1991, Jung 1995, Kim 2004), Tungus languages of the Altaic family such as Udihe (Nikolaeva and Tolskaya 2001); Tibeto-Burman languages such as Meithei (Chelliah 1997), Tenyidie (Subbarao and Kevichüsa 1999), rGyalrong (Wei 2000); Austronesian languages such as Riau Indonesian (Gil 2000), Tukan Besi (Donobue 1999); Athabaskan languages such as Slave (Rice 1989, Basilico 1993), Dogrib (Saxon 2000), Navajo (Platero 1973, 1974, 1978, Barss et al. 1989, 1991), Tanaina (Thompson n.d.), Koyukon (Thompson n.d.); Kiowa-Tanoan languages such as Kiowa (Watkins 1984, Harbour 2002); Siouan languages such as Lakhota (Williamson 1984, 1987); Uto-Atzecan languages such as Hopi (Fauconnier (1971)), Yaqui, (Heath 1972); Yuman languages such as Yavapai (Kendall 1976), Cocopa (Gorbet 1976), Diegueño (Gorbet 1976), Jamul Tiipay (Miller 2001), Muskogian languages such as Choctaw (Broadwell 1992); Algonquian languages such as Passamaquoddy (Bruening 2001); Iroquoian languages such as Mohawk (Baker 1996); Quechuan languages such as Imbabura Quechua (Cole 1982, Cole and Harmon 1982) and Cuzco Quechua (Lefebvre and Muysken 1988), Mismaplan languages such as Miskitu and Sumu (Hale and Salamanca n.d.), American Sign Language (ASL) (Fontana 1990, Miller 1990); Mande languages of Niger-Congo family such as Bambara (Bird 1968, Koopman 1992, Zribi-Hertz and Hanne 1995), Maninka (Bird 1966, 1968) and Dogon (Culy 1990); Amazonian languages such as Gavião (Moore 1984, 1989), Karitiana (Storto 1999), and Kayapó (Andrés Pablo Salanova p.c.); South Caucasian languages such as Georgian (Lea Nash class notes 2002). Indo-European languages such as Hindi (Srivastav 1991). Among these languages, at least Maninka and Supyire reportedly show some diagnostics of adjunct/correlative clauses in that the entire clause is dislocated to the clause-periphery (cf. also Hale 1976 and Pensalfini 1997 for adjoined relative clauses in Walpiri and Jingulu, respectively). There is, however, a difficult question concerning explicit criteria for distinguishing HIRC and correlatives (cf. Srivastav 1991 for Hindi correlatives).

### 5.10.2 Cole's Generalization

A number of researchers in the 1970s and the 1980s have noted that HIRC appears to be restricted to SOV languages (Kuroda 1974-7/92, Gorbet 1977, Langendon 1977, Keenan 1978, 1985, and Culy 1990). (5.124) is Gorbet's (1977) observation.

(5.124) Gorbet's observation (Gorbet 1977)

Languages with HIRC are head-final and have powerful and productive patterns of nominalization which are at least superficially similar to RCs.

<sup>42</sup>Kɔ̀nni is supposedly the closest language to Bùlì and does not have HIRC, judging from a very brief description of its syntax in Cahill (1999). Other aspects of the syntax of the Kɔ̀nni Ā-dependency seem to be quite different from Bùlì; unlike Bùlì, it makes use of neither a "relativizing suffix", a complementizer, nor a demonstrative at the clause final position. Incidentally, the same seems to be true of Dàgáárè and Sisaala-Passale, which disallows HIRC. I have no decisive evidence to determine whether this is just an accidental coincidence or not.

Gorbet made two insightful observations here. First, (5.124) explicitly mentions importance of nominalization in HIRC. Second, it notes a correlation between head-finality and HIRC.

Similar observations about the correlation between HIRC and the word order have been noted by others (Kuroda 1974 (originally personal communication made to him by S.I. Harada), Langendon 1977, Keenan 1978, 1985). Let us call this *The OV Generalization*.

(5.125) The OV Generalization

Languages with HIRC are head-final (OV).

Presumably, the most famous generalization of HIRC is Peter Cole's Generalization (5.126). Cole (1987) made a step forward in that he relates the SOV word order (and left-headedness of relative clauses) with anaphoric binding.

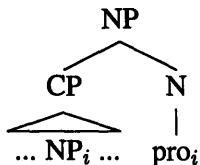
(5.126) Cole's Generalization

HIRC is restricted to languages with (i) SOV word order and (ii) null anaphora.

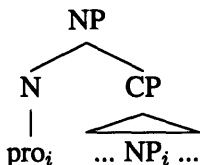
The gist of his proposal is that HIRC is LF-representationally identical to its HERC counterpart; HIRC is externally-headed by a null anaphora and the null anaphora is subject to a linear Binding Condition that anaphora cannot be both preceded and c-commanded by the antecedent (see (5.127)). On this view, (5.128) is licit whereas (5.129) is illicit.

(5.127) An anaphor cannot both precede and command its antecedent. (Cole 1987, 283)

(5.128) Left-Branching and HIRC



(5.129) \*Right-Branching and HIRC



Now let us consider the generalization in terms of Gur languages. The most significant properties of the HIRC in these Gur languages are (i) the absence of pro-drop; (ii) SVO word order (except Supyire); and (iii) the use of a "relativizing suffix". Among these, the first two characteristics refute the famous Cole's Generalization that HIRC is restricted to languages with SOV word order and pro-drop (Cole 1987). Tellier (1989) was the first to point out this from Mooré. In fact, to my knowledge, all the Gur languages I know that have HIRC seem to be against Cole's Generalization (see also Carlson 1994; see Hiraiwa 2003d for more detailed discussions of the validity of the generalization based on the data from more than 40 languages. See also Watanabe 2003 for relevant discussions.).



## (5.130) Bùlì: \*Pro-Drop

- a. 'n nàyí wà.  
1Sg. hit 3Sg.  
'I hit him.'
- b. \*∅ nàyí wà.  
1Sg. hit 3Sg.  
'I hit him.'
- c. \* ñ nàyí ∅.  
1Sg. hit 3Sg.  
'I hit him.'
- d. \*∅ nàyí ∅.  
1Sg. hit 3Sg.  
'I hit him.'

## (5.131) Typology of In-Situ HIRC in Gur

HIRC	Languages
✓	Bùlì, Mooré, Dagbani, Supyre
*	Dàgáárè, Sisaala-Pasaale, Gureñ/Frafra Kónni

As for the word order generalization, it is somewhat hard to evaluate because it is not clear whether the relevant head-parameter meant to be crucial by the generalizations above is for clauses or nominals.<sup>43</sup> Strictly speaking, Gorbet-Harada-Kuroda-Langendon's OV Generalization and Cole's Generalization make different predictions; whereas the former depends on the clausal word order, the latter in essence crucially rests on the ordering between a relative clause and a head. A number of people have pointed out that the OV Generalization is not quite right (for SVO languages with HIRC, see Tellier 1989 for Mooré, Fontana 1990 and Miller 1990 for ASL, and for VOS languages with HIRC, Gil 2000 for Riau Indonesian and Donobue 1999 for Tukang Besi). It should be also noted that languages with allegedly radically free word order, such as Mohawk, also allow HIRC (Baker 1996). While Bùlì and Mooré refute the naive word order generalizations proposed by the former linguists, they are still compatible with the word order part of Cole's generalization, since the language is strictly head-final in nominal domains while it is head-initial in clausal domains.

Kayne (1994), building on Cole's generalization, proposed an antisymmetric explanation for the correlation between HIRC and word order/null anaphora. Kayne proposes to drop the linear condition by deriving the HIRC with head noun raising to [Spec, CP] followed by a remnant IP movement and PF-deletion of the element in [Spec, CP].

In this respect, Bùlì and Mooré do not immediately refute Kayne's theory of HIRC. What is crucial for Kayne's theory is for a given language to show head-final order within the nominal

<sup>43</sup>On the other hand, there is no correlation between the directionality of the head in relative clauses and HIRC; Mohawk (Baker 1996), Kiowa (Watkins 1984, Harbour 2002), Passamquoddy (Bruening 2001), Supyire (Carlson 1994), Bambara (Bird 1968), Tukang Besi (Donobue 1999), Mooré (Tellier 1989), for example, allow HIRC even though HERCs in those languages are left-headed. Furthermore, Supyire, Bambara, and Mooré allow HIRC despite the fact that they have left-headed HIRC and disallow null anaphora.

domain. The validity of Kayne's analysis depends on whether the derivation involves movement of the complement of D to [Spec, D], obviating the Condition C violation. Yet, Bùlì and Mooré do not allow null pronouns and hence require reconsideration of the Cole-Kayne generalizations of HIRC.<sup>44</sup>

### 5.10.3 Watanabe's Generalization

Watanabe (2002, 2003), based on Ishigaki (1955), observes that in Old Japanese HIRC was not observed until overt phrasal *Wh*-movement was lost –significant diachronic correlation. If this is true, it is a piece of empirical evidence, as Watanabe correctly argues, for the hypothesis that *Wh*-in-situ is a crucial mechanism for HIRC. He notes, however, that there are languages such as Imbabura Quechua, which allow HIRC but require overt *Wh*-movement for *Wh*-Questions. He observes that Imbabura Quechua makes use of optional movement for Focus, allowing focus-in-situ.

#### (5.132) Imbabura Quechua

- a. **Ima-ta-taj** ya-ngui Juan rankishka-ta?  
what-Acc-Q think-2Pl. Juan bought-Acc  
'What do you think that Juan bought?'
- b. \*Ya-ugui Juan **ima-ta-taj** randishka-ta?  
thnk-2Pl. Juan what-Avc-Q bought-Acc  
'What do you think that Juan bought?'

Interestingly, HIRC is allowed in Quechua.

#### (5.133) Imbabura Quechua

- a. Juan Quito-man-**chu** rirka?  
Juan Quito-to-Q went  
'Did Juan go to Quito?' (Cole and Harmon 1994)
- b. Kan-paj ushi-wan Agatu-pi-**mi** tupari-rka-ni.  
2Sg.-of daughter-with Agato-in-F meet-Pst-1  
'I met your daughter in Agato.' (Cole 1982)

Watanabe, then, proposes to explain the correlation between Focus-in-situ and HIRC by parametrization of quantificational determiners.

#### (5.134) HIRC-Indeterminate Generalization (Watanabe (2003))

Languages with an indeterminate system make available for ordinary nominal expressions the long-distance dependency (checking or binding) used by the indeterminate. This recruitment makes HIRC possible.

<sup>44</sup>Whether such too local movement is ever possible in human language remains controversial. Furthermore, we must bear in mind that Kayne-style movement is often less restrictive and arbitrary; it is vitally important to consider the nature of that movement even if it may be apparently compatible with the existence of HIRC in Bùlì and Mooré.

Although I do not introduce the details of his analysis here, the main idea is that HIRC is restricted to languages with “interrogative-based indefinites”, where indeterminates and *Wh*-elements show morphological similarities (see Haspelmath 1997 for a cross-linguistic survey of indeterminates). Watanabe provides support for his generalization from Lakhota, Quechua, and Japanese. Although the proposal is interesting, Bùlì and Mooré pose counterevidence for his generalization. Significantly, Bùlì and Mooré do not show any indication of indeterminate systems.<sup>45</sup>

Bùlì is obviously a counterexample to the Indeterminate part of Watanabe's Generalization. Bùlì does not have an indeterminate-system as shown in (5.135).<sup>46</sup>

(5.135) Bùlì: The Absence of the Indeterminate System

- a. fi jà (ká) wàná/bwà?  
 you saw F who/what  
 ‘\*You saw someone/something.’  
 ‘Who did you saw?’
- b. (ká) wàná/bwà àtì fi jà?  
 F who/what C you saw  
 ‘\*You saw someone/something.’  
 ‘Who did you saw?’
- c. mi ja nùrú/away/ja:b.  
 I saw man/someone/thing  
 ‘I saw someone/something.’

(5.136) *Wh*-elements/Indeterminates in Bùlì

	+Wh	-Wh
+Animate	wàná	nùrú/ā-wā:y
-Animate	bwà	jā:b

As (5.135) shows, neither (ká) wàná nor (ká) bwà can mean “someone/something”. Bùlì utilizes either general nouns such as *nùrú* “a man/someone” and *jā:b* “a thing/something” or the word *āwā:y* “someone”. Likewise, a detailed crosslinguistic scrutiny reveals that languages such as Slave and Bambara also lack an indeterminate-system.

#### 5.10.4 Towards a Fine Typology of HIRC: CP/DP Interweaving

Given the pros and cons of the previous generalizations of HIRC, I would like to propose an alternative view of the mechanism of HIRC in human languages.

As we have seen above, the determiner plays important roles in HIRC in Gur languages (Williamson 1987, Basillico 1996, Watanabe 2003). For the external syntax, its presence ensures availability of inherent  $\phi$ -features and uCase. For the internal syntax, it functions as a determiner that takes as an argument the clausal structure  $-C_2P$ . Furthermore, I argued that  $c_3$ , as a determiner, also selects the internal head noun in a long-distance fashion.

<sup>45</sup>I have no relevant information about Dagbani and Supyire at this moment.

<sup>46</sup>Salanova (p.c.) informs me that in Kayapo, the indeterminate-system only holds of -animate indefinite “what”.

(5.137)  $c_3$ :

- a. is the locus of inherent  $\phi$ -features and uCase for the external syntax.
- b. takes  $C_2P$  as argument, resulting in clausal nominalization of  $C_2P$ .
- c. selects the internal head noun and forms an argument.

What this suggests is that HIRC is closely tied with quantification by determiners. Put differently, the external D functions as a quantificational determiner, taking the relative clause as its argument, on a par with its nominal determiner counterpart that takes “NP” as its argument.

(5.138) HIRC is restricted to languages with an in-situ restriction.

In this respect, the HIRC in Mohawk (Baker 1996) is quite suggestive. Mohawk is an obligatory *Wh*-movement language. The language, however, has a unique strategy; the *Wh*-operator part can be separated from the rest of the *Wh*-phrase, leaving the head noun in-situ.

(5.139) Bùlì: Demonstrative Determiner

ná:-mʊ-lá  
cow-Cl-Dem

‘that cow’

(5.140) Bùlì: Matrix Clausal Determiner

Àtìm nà̀yì Àm̀àk lǎ.  
Àtìm hit Àm̀àk Dem

‘Àtìm hit Àm̀àk (as I said).’

(5.141) Bùlì: Subordinate Clausal Determiner

Àm̀àk nà [Àtìm àlì/\*àtì s<sup>w</sup>à ná:-būy lǎ].  
Àm̀àk saw Àtìm C own cow-REL Dem

‘Àm̀àk saw the cow which Àtìm owns.’

What is crucial for in-situ HIRC is for a determiner to be able to enter a non-local relation with its argument.<sup>47</sup>

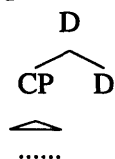
(5.142) Quantification by D and HIRC

HIRC is allowed in languages whose D –or *c*– allows a long-distance relation.

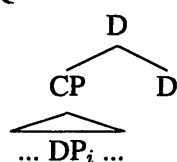
<sup>47</sup>Languages such as Kiowa and Mohawk allow an internal head of HIRC to be incorporated into a verb. The LF head-raising analysis would require excorporation, which has rarely been attested and justified in natural languages. See Baker (1996).

The idea is reminiscent of Larson's (2003) treatment of clausal determiners. Larson links clausal determiners to quantification  $x(y)$ . The basic idea is the same here. The determiner in HIRC takes its complement as an argument.<sup>48</sup>

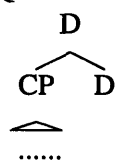
(5.143) Quantification by D: Clausal Determiner (cf. Larson 2003)



(5.144) Quantification by D: HIRC



(5.145) Quantification by D: Factive



The question to ask is why quantification by D has some correlation with *Wh*/Focus-dependency (Watanabe 1992, 2003). I suggest, granting that much investigation is necessary, that it is because of the symmetry of D and C –c.

As we have seen, Imbabura Quechua is a language that does not allow *Wh*-in-situ, while it allows Focus-in-situ. And, Imbabura Quechua allows in-situ HIRC. The opposite situation is attested in Dàgáárè: *Wh*-movement is optional, whereas focus-movement is obligatory.

(5.146) Dàgáárè: (A. Bodomo p.c.)

- a. **Saao la** ka Dakoraa da di a baguo nyɛ.  
saao F C Dakoraa Pst ate D morning Dem  
'It is saao that Dakoraa ate this morning.'
- b. \*Dakoraa da di **saao la** a baguo nyɛ.  
Dakoraa Pst ate saao F D morning Dem  
'It is saao that Dakoraa ate this morning.'

<sup>48</sup>The three readings of the clausal determiners in Fongbe (Lefebvre 1992a, Larson 2003), under our theory, correspond to the three *c* positions. Also, three readings of a quantificational particle *-mo* in Japanese, reported in Kuroda (1965) as attachment transformations, are now reduced to the three *c* positions.

- (5.147) Dàgáárè: (A. Bodomó p.c.)
- a. bò`ŋ lá ká ó bós-rò?  
 what F C 3Sg. want  
 ‘What does he want?’
- b. ò bós-ró lá bó`ŋ?  
 3Sg. want F what  
 ‘What does he want?’

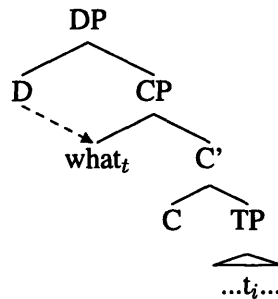
Significantly, Dàgáárè does not allow in-situ HIRC; but it does allow Left-Headed HIRC (and HERC), as we have argued.

In this respect, it is interesting to investigate whether English also allows Left-Headed HIRC. There have been some arguments for “head-raising” in English relative clauses in the literature (cf. Vergnaud 1974, Sauerland 1998, Bhatt 2002, Aoun and Li 2003). The same is true with Free Relatives. There has been much controversy whether free relatives in English are externally-headed or not (Bresnan and Grimshaw 1978, Groos and van Riemsdijk 1981).

- (5.148) I will eat **what** John will buy.

Our theory can view the free relatives in English as a kind of HIRC –Left-Headed HIRC. Assuming that *what* is a D-head (with or without *nP* complement), the same analysis applies.

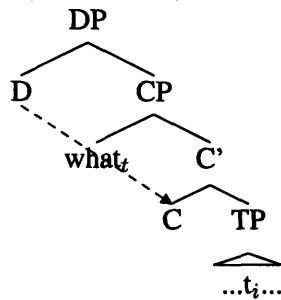
- (5.149) English Free Relative



The relative clause is a sentence (CP) and the external D selects *what* (D) and C. At LF, the complement of D is interpreted as a noun phrase, because of the relation between D and DP *what*. If, on the other hand, the selectional relation between D and CP is interpreted at LF, it gives rise to an interrogative reading.<sup>49</sup>

<sup>49</sup>D-*what* relation at LF gives rise to a “label” effect: namely, the whole structure is a DP whose head is *what*. N. Chomsky p.c. suggests a different analysis where there is no external D, where D, being a head, has an option of projecting its own label. Our theory differs from his in that it needs no labeling algorithm; rather labeling is just an effect of the head-head relation interpreted at LF. N. Chomsky also points out that there is a fundamental difference between HIRC in Gur and free relatives in English. In the latter, what is moved is a head, while in Gur, what is moved to [Spec, CP] in Left-Headed HIRC is a phrasal category, which makes C project under his labeling algorithm. Another problem is that in his proposal, *what* has to have two occurrences of uCase one for internal syntax and another for external syntax, which is empirically not attested in English syntax to the best of knowledge.

## (5.150) English Interrogative Complement



Matching effects (Bresnan and Grimshaw 1978) then reduce to D-Op relation. Number agreement facts also follow.

## (5.151) (Bresnan and Grimshaw 1978, 339)

- a. What books she has isn't/\*aren't certain.
- b. Whatever books she has \*is/are marked up with her notes.

It is not so surprising if it turns out that these English relative clauses are Left-Headed HIRC, as the relative clauses in Dàgáárè are. Recall that Dàgáárè is an obligatory focus-fronting language. English patterns with Dàgáárè in this respect. Putting aside intonational focus, focus-movement is obligatory in English. Following the insight of Watanabe (2003), we could attribute the absence of in-situ HIRC to the obligatoriness of *Wh*/focus-movement. This, however, still leaves an option for Left-Headed HIRC.

The same might be true with Igbo, a Kwa language, whose free relative shows morphological similarity with *Wh*-in-situ.<sup>50</sup> As a member of the Kwa languages, it does not allow in-situ HIRC, but free relatives in the language look quite similar to their sentential *Wh*-Question counterparts.

## (5.152) Igbo (Victor Manfredi p.c.)

- a. Ónyé by!á-rá  
person come.Rel-Aff  
'the person who came'
- b. Ònyé byà-rà?  
who come-Aff  
'Who came?'

The overall conclusion seems to be that HIRC is more widely observed, albeit hidden, in the languages of the world than it has been thought previously. Accordingly, any generalization of HIRC must be explicit in its scope: whether it is about in-situ HIRC or about both type of HIRC.

## (5.153) Determiner Parameter

HIRC is restricted to languages whose D can select an argument non-locally.

<sup>50</sup>I would like to thank Victor Manfredi for the data and discussions.

In fact, Left-Headed HIRC via head-raising is a natural option for grammar given independent principles to trigger *Wh*/Focus structures. So, we may ask what principle makes available the traditional adjunction structures.

## 5.11 Concluding Remarks

I have proposed that a crucial factor that determines the distribution of HIRC in human languages is whether a given language allows any one of the nominalization strategies by  $c_3$  (Dem, D, or nominalizing suffix). I have argued that the CP/DP Symmetry plays a crucial role in the mechanism of HIRC in Gur with one-to-many selectional relations. The syntax of HIRC reduces to essentially the same mechanism as Nominative-Genitive Conversion discussed in Chapter 3, where cross-linguistically, the subject of relative clauses shows Case and agreement patterns that parallel that of a DP-internal subject.

This chapter does not address the computation of the semantic interpretation of HIRC. Rather, I have focused on showing how the syntax of HIRC should look from a purely syntactic viewpoint. If the analysis proposed in this chapter is on the right track, then HIRC cannot be regarded as “reduced relatives” since all the higher functional heads play essential roles in the mechanism of HIRC in Gur languages. An important remaining task is to re-examine relative clauses in various languages. HIRC is often hidden under the veil of “head-initial” relative clauses (as in English). However, the investigation presented in this chapter reveals that there are more than one type of HIRC in the languages of the world: HIRC with a head left in-situ, HIRC with a head in [Spec,  $v^*P$ ], and the HIRC with a head in [Spec, CP]. This is not surprising at all, however; just as we find *Wh*-fronting and *Wh*-in-situ languages, there are head-fronting HIRC and head-in-situ HIRC. On the contrary, a principled motivation would have to be found if any of the variants of HIRC were missing in human languages.



## Chapter 6

# Predicate Clefts

### 6.1 Introduction

This chapter investigates the mechanism of predicate focus in the Predicate Cleft Constructions (hereafter PCC) within the minimalist framework (Chomsky 2000, 2001, 2004a, in press) and reveals its important theoretical implications for the study of the DP/CP parallelism (Abney 1987, Szabolcsi 1994 among others) and for a cross-linguistic study of the PCC.<sup>1</sup>

Predicate focus has been extensively studied in various languages, in particular in West African languages: Kwa languages such as Yòrùbá (Dekydtspotter 1992, Manfredi 1993), Akan (Boadi 1974), Ewe(gbe) (Ameka 1992, Collins 1994), Fɔ̀n(gbe) (Lefebvre 1992a, Lefebvre 1992b, Larson and Lefebvre 1991, Lefebvre 2002), Gun(gbe) (Aboh 2004), Nùpè (Kandybowicz 2003), and Èdó (Stewart 2001) and Kru languages such as Vata (Koopman 1984). Both of the language subgroups belong to the Niger-Congo family. Outside Kwa/Kru languages, it has been studied in Nweh (Koopman 1999), Haitian Creole (DeGraff 1995, Harbour to appear, Larson and Lefebvre 1991, Russian (Abels 2001), Hebrew (Harbour 1999, Landau 2003), Yiddish (Davis and Prince (1986), Cable 2003), Japanese (Cho and Nishiyama 2000, Kotani 2002), and Trinidad Dialect English (Cozier 2004) among others. It is noteworthy, however, that there has been no study of the PCC in Gur languages, to my knowledge.

Notwithstanding the fairly large number of previous studies, there remain a number of challenges that resist explanation even within a single language, not to mention a unified explanation of the cross-linguistic variation of PCC. This chapter is no exception and does not provide a sufficient

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<sup>1</sup>I would like to thank George Akanlig-Pare for his kind help, patience, and insights. I am grateful to Noam Chomsky, Chris Collins, Michel DeGraff, Marcel den Dikken, Yoshi Dobashi, Sachie Kotani, Victor Manfredi, Alec Marantz, David Pesetsky, Norvin Richards, and Shoichi Takahashi for helpful discussions. An earlier version of this chapter was presented at the University of Potsdam (August 11, 2004), at the workshop on Dimensions of Focus held at 22nd annual meeting of the English Linguistic Society of Japan at Dokkyo University (November 13, 2004), and at Tohoku University (November 16, 2004). I would like to thank the audience and in particular, Gisbert Fanselow, Caroline Féry, Hans-Martin Gärtner, and Shin Ishihara. I am also very grateful to anonymous reviewers for *Linguistic Analysis* and the editors Rose Letsholo and Nancy Kula for reading an earlier manuscript carefully and providing me with useful comments and questions. Thanks also go to Oluseye Adesola for his help with Yòrùbá data. The Bùlì data were collected in my fieldwork (September 2003-May 2004) in Ghana. The work reported here is partially funded by the Ken Hale Fellowship for Linguistic Fieldwork, MIT (2003-2004), for which I am grateful.

cross-linguistic account. I attempt, however, to elucidate the mechanism for the PCC in Bùlì and to lay the foundation for future cross-linguistic research. More specifically, I argue that PCC in Bùlì (and perhaps other Gur languages) involves a movement of the complement of  $v^*$  –the root category  $\sqrt{r}$  plus #P (which is Aspect/Number head)– to [Spec, CP]. I show that this is the key to the question of why the predicate in PCC must be “doubly spelled out”. Furthermore, I claim that an articulated theory of CP/DP Symmetry elucidates the mechanism of nominalization in PCC and Lefebvre’s Generalization that PCC and so-called Clausal Determiner constructions are in a correlated distribution.

The organization of this chapter is as follows. Section 6.2 examines the properties of PCC in Bùlì and points out three issues that are the main object of inquiry of this chapter. Section 6.3 rejects an alternative analytical possibility that PCC is derived from cognate object constructions despite the surface resemblances. Section 6.4 proposes a supercategorical theory of CP/DP Symmetry and demonstrates that it provides a principled account for the issues. Section 6.5 investigates Serial Verb Nominalization. Section 6.6 is a comparative study of PCC in Bùlì and Yòrùbá. The final section concludes the discussions.

## 6.2 Predicate Cleft Constructions (PCC) in Bùlì

### 6.2.1 Focus in Bùlì

Before we examine PCC in Bùlì, let us first look at the syntactic workings of focus. Bùlì exhibits strictly head-initial word order in the “CP domain”, while the “DP domain” is strictly head-final. Consider the triplet (6.1). (6.1a) is a base sentence, the object is focused and dislocated to the edge of the clause in (6.1b). The in-situ focus sentence in (6.1c) shows that the focus movement is optional. The focus marker *ká* optionally attaches to the element in focus. Irrespective of the movement, the interpretation is the same –(Contrastive) Focus. In Bùlì all  $\bar{A}$ -dependencies (*Wh*-Question, Focus, Relativization, and Factive) show, in principle, the same  $\bar{a}l\bar{i}/\bar{a}t\bar{i}$  complementizer alternation (see Chapter 7 and Hiraiwa (2003b)).<sup>2</sup>

(6.1) Bùlì:

- a. Àtìm dè mángò-kú-lá dīem.  
 Àtìm ate mango-D-Dem yesterday  
 ‘Àtìm ate that mango yesterday.’
- b. (*ká*) mángò-kú-lá àlì/àtì Àtìm dè (\*mángò-kú-lá/\*kù) dīem.  
 F mango-D-Dem C Àtìm ate (mango-D-Dem/3Sg.) yesterday  
 ‘It is that mango that Àtìm ate yesterday.’
- c. Àtìm dè *ká* mángò-kú-lá dīem.  
 Àtìm ate F mango-D-Dem yesterday  
 ‘It is that mango that Àtìm ate yesterday.’

<sup>2</sup>The complementizer alternation between  $\bar{a}l\bar{i}$  and  $\bar{a}t\bar{i}$  is discussed in detail in Chapter 7.

Subject focus differs in that the movement is obligatory, as in many other West African languages (see (6.2b)). As shown in (6.2c), in-situ focus for subjects results in ungrammaticality.<sup>3</sup>

## (6.2) Bùlì:

- a. Àtìm dè mǎngò-kú-lá dīem.  
 Àtìm ate mango-D-Dem yesterday  
 ‘Àtìm ate that mango yesterday.’
- b. (ká) Àtìm àlì/\*àtì (\*wà) dè mǎngò-kú-lá dīem.  
 F Àtìm C 3Sg. ate mango-D-Dem yesterday  
 ‘It is Àtìm who ate that mango yesterday.’  
 ‘It is that Àtìm ate that mango yesterday.’
- c. \* (ká) Àtìm dè mǎngò-kú-lá dīem.  
 F Àtìm ate mango-D-Dem yesterday  
 ‘(Intended Meaning) It is Àtìm who ate that mango yesterday.’  
 ‘(Intended Meaning) It is that Àtìm ate that mango yesterday.’

Long-distance extraction shows one asymmetry. While non-subject extraction (6.3) does not leave a resumptive pronoun, long-distance subject extraction (6.4) requires a resumptive pronoun in the original position, while resumption is prohibited in local extraction (cf. (6.1b) and (6.2b)).

## (6.3) Bùlì:

- a. Àmòak wè:nì àyīn Àtìm dè (ká) mǎngò-kú-lá dīem.  
 Àmòak said C Àtìm ate F mango-D-Dem yesterday  
 ‘Àmòak said that it is that mango that Àtìm ate yesterday.’
- b. (ká) mǎngò-kú-lá àlì/àtì Àmòak wè:nì àyīn Àtìm dè (\*mǎngò-kú-lá/\*kù)  
 F mango-D-Dem C Àmòak said C Àtìm ate mango-D-Dem/it  
 dīem.  
 yesterday  
 ‘It is that mango that Àmòak said that Àtìm ate yesterday.’

## (6.4) Bùlì:

- a. Àmòak wè:nì àyīn (ká) Àtìm àlì/\*àtì dè mǎngò-kú-lá dīem.  
 Àmòak said C F Àtìm C ate mango-D-Dem yesterday  
 ‘Àmòak said that it is Àtìm who ate that mango yesterday.’

<sup>3</sup>The convention used in this chapter is the following. An asterisk \* on the brackets –\*()– indicates that elements within the brackets are not optional. An asterisk \* followed by a space indicates that the whole sentence is ungrammatical. For example, (6.2c) is ungrammatical irrespective of whether there is *ká* at the beginning of the sentence since there is a space between the asterisk and (*ká*).

- b. (ká) Àtìm àlì/àtì Àmòak wè:nì àyīn \*(wà) dè mángò-kú-lá dīem.  
 F Àtìm C Àmòak said C 3Sg. ate mango-D-Dem yesterday  
 ‘Àmòak said that it is Àtìm who ate that mango yesterday.’

One fundamental question is the structure of the focus constructions in Bùlì. In particular, the fact that the focus marker *ká*, as in many other West African languages, is homophonous with the copula (see (6.5)) gives rise to at least three analytical possibilities.

(6.5) Bùlì:

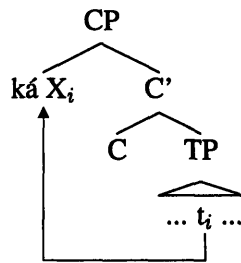
Àtìm ká kpārōa.  
 Àtìm Cpl farmer(Id)

‘Àtìm is a farmer.’

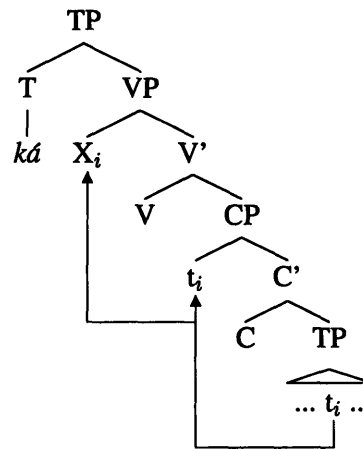
(6.6a) is a monoclausal structure with no embedding involved. (6.6b) and (6.6c), on the other hand, represent bi-clausal structures with the difference being that in the former what is moved is the focused element and in the latter it is a null operator (Chomsky 1977). In the latter two cases the element *ká* is considered to be a copula of the matrix clause.<sup>4</sup>

(6.6)

a. Monoclausal:

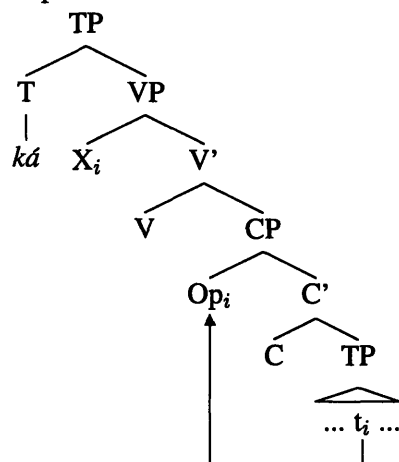


b. Biclausal:



<sup>4</sup>An anonymous reviewer for *Linguistic Analysis* points out another possibility: that the complement of *ká* is a relative clause with X as the head noun. This possibility is excluded, however, because X in focus constructions in Bùlì does not (and more importantly, cannot) have any relativizing suffix.

c. Op-Structure:



Although nothing appears to exclude the structures in (6) in human language, there is good evidence to lead us to think that the monoclausal structure (6.6a) is right for Bùlì. First, while *ká* in focus constructions is optional, the copula *ká* cannot be omitted (see (6.7)).<sup>5</sup>

(6.7) Bùlì:

- a. (*ká*) *mángò-kú-lá* àlì/àtì Àtìm dè (\**mángò-kú-lá*/\**kù*) dīem.  
 F mango-D-Dem C Àtìm ate (mango-D-Dem/3Sg.) yesterday  
 ‘It is that mango that Àtìm ate yesterday.’ (=6.1b)
- b. Àtìm \*(*ká*) *kpārōa*.  
 Àtìm Cpl farmer(Id)  
 ‘Àtìm is a farmer.’

Second, Bùlì does not allow null pronouns, as shown in (6.8).

(6.8) Bùlì:

- \*(wà) *kǎ* *kpārōa*.  
 3Sg. Cpl farmer(Id)  
 ‘He is a farmer.’

<sup>5</sup>One environment where the copula must be omitted is when a subject is followed by an adjective (Matushansky 2003).

(i) Bùlì:

- núpó-wá* (\**ká*) *l<sup>w</sup>ōrīmā*.  
 woman-D Cpl ugly  
 ‘The woman is ugly.’ (Matushansky 2003)



A focused predicate is moved to the clause-initial position to the left of the complementizer *àlì/àtì* and it is optionally marked with the focus marker *ká*.<sup>7</sup> (6.10c) indicates that the object can be pied-piped together with the predicate. Predicate clefting can apply to various types of verbs: unergative, unaccusative, and transitive verbs.

One crucial difference between the normal focus construction and the PCC is that in the latter, the copy of the focused predicate is obligatorily realized in the original position in addition to the focused position. This multi-locational phonological realization of the copy of the predicate is strictly bi-locational in that no triple realization is attested. Let us see this in more detail. *Wh*/Focus-movement in Bùlì can be “partial”, stopping at the edge of the lower clause, which is above *àlì/àtì* but below the complementizer *àyìn*. Compare (6.11a) and (6.11b).

(6.11) Bùlì:

- a. (ká) bwà àlì/àtì Àtìm wè:nì àyìn Àmòak s<sup>w</sup>à.  
 F what C Àtìm said that Àmòak owned  
 ‘What did Àtìm say that Àmòak owned?’  
 ‘\*Àtìm asked what Àmòak owned.’
- b. Àtìm wè:nì àyìn (ká) bwà àlì/àtì Àmòak s<sup>w</sup>à.  
 Àtìm said that F what C Àmòak owned  
 ‘What did Àtìm say that Àmòak owned?’  
 ‘Àtìm asked what Àmòak owned.’

As shown in (6.12a), long-distance PCC realizes only two copies –the original copy and the initial copy. Thus (6.12b) is out. Such a bi-locational realization of a copy is only available for PCC. Normal *Wh*/Focus movement of a non-predicate does not allow its copy to be realized in more than one position (unlike partial *Wh*-movement phenomena in German and Hindi).

(6.12) Bùlì:

- a. Àtìm wè:nì àyìn (ká) dē-kā àlì/àtì Àmòak \*(dè) mángò dīem.  
 Àtìm said C F eat-Nml C Àmòak ate mango(Id) yesterday  
 ‘Àtìm said that it is eating that Àmòak ate a mango yesterday.’  
 ‘It is eating that Àtìm said that Àmòak ate a mango yesterday.’
- b. \*(ká) dē-kā àlì/àtì Àtìm wè:nì àyìn (ká) dē-kā àlì/àtì Àmòak \*(dè) mángò  
 F eat-Nml C Àtìm said C F eat-Nml C Àmòak ate mango(Id)  
 dīem.  
 yesterday  
 ‘Àtìm said that it is eating that Àmòak ate a mango yesterday.’

Another difference that is of particular interest to this chapter is the use of the nominalizing affix *-kā* in PCC, to which we will turn shortly below.

<sup>7</sup>For a detailed study of the morphosyntax of the complementizer system in Bùlì, see Hiraiwa (2003b).

### 6.2.2.1 Islands and Reconstruction

PCC in Bùlì exhibits a number of diagnostic properties of *Wh*/Focus-movement: most notably, it is island-sensitive and yet it is unbound —a hallmark of  $\bar{A}$ -dependencies. (6.13a) and (6.13b) are a *Wh*-island violation and a Complex NP violation, respectively. In each case, the bracketed portions form islands and extractions of the predicates out of them result in ungrammaticality.

(6.13) Bùlì:

- a. \* (ká) dē-kā àlì/àtì Àtìm bègì àyìn [wàná àlì dè mángò].  
 F eat-Nml C Àtìm asked that who C ate mango(Id)  
 ‘(Lit.) It is eating that Àtìm asked if who ate a mango.’
- b. \* (ká) dē-kā àlì/àtì Àtìm jà [núrí-wa:y àlì dè mángò].  
 F eat-Nml C Àtìm saw man-Rel C ate mango(Id)  
 ‘It is eating that Àtìm saw the man who ate a mango.’

Binding facts also show that movement is involved. As it will be shown in detail, PCC in Bùlì allows pied-piping of objects. If a pronominal object co-referential with the subject is pied-piped, the sentence exhibits Condition B effects, which are a diagnosis for reconstruction effects.

(6.14) Bùlì:

- \* (ká) wà<sub>i</sub> nāyī-kā àlì/àtì Àtìm<sub>i</sub> nàyì.  
 F 3Sg. hit-Nml C Àtìm hit  
 ‘It is hitting him<sub>i</sub> that Àtìm<sub>i</sub> hit.’

Condition A adds another piece of evidence for movement. Pied-piping a reflexive bound by the subject is fine in PCC in Bùlì. This again indicates that reconstruction effects exist.

(6.15) Bùlì:

- (ká) wà-děk<sub>i</sub> nāyī-kā àlì/àtì Àtìm<sub>i</sub> nàyì.  
 F 3Sg.-self hit-Nml C Àtìm hit  
 ‘It is hitting himself<sub>i</sub> that Àtìm<sub>i</sub> hit.’

### 6.2.2.2 Obligatory Movement

PCC differs from *Wh*/Focus constructions, however, in that predicates cannot be focused in-situ.

(6.16) Bùlì:

- a. Àtìm dè ká mángò dīem.  
 Àtìm ate F mango(Id) yesterday  
 ‘It is a mango that Àtìm ate yesterday.’
- b. \* Àtìm dè (ká) dē(-kā) mángò dīem.  
 Àtìm ate F eat-Nml mango(Id) yesterday  
 ‘It is eating that Àtìm ate a mango yesterday.’



### 6.2.2.3 Semantic Interpretations

The conclusion that the PCC in Bùlì is a focus construction is further supported by its semantic interpretation. The PCC in Bùlì always has focus interpretation. It can be naturally used as an answer to a *Wh*-Question, which is an instance of identificational focus (see Kiss 1998).<sup>8</sup>

(6.17) Bùlì:

- a. (ká) bwà àlì/àtì Àtìm pè?  
 F what C Àtìm did  
 ‘What did Àtìm do?’
- b. (ká) dē-kā àlì/àtì Àtìm dè  
 F eat-Nml C Àtìm ate  
 ‘It is eating that Àtìm ate.’
- c. (ká) dē-kā àlì/àtì Àtìm dè mángò.  
 F eat-Nml C Àtìm ate mango(Id)  
 ‘It is eating that Àtìm ate a mango.’

Another natural environment for PCC is a contrastive focus context. In (6.18), the event denoted by the verb “eat” is contrasted with another event, for example, “throw away”. We call this a *V-contrastive* reading –information focus in Kiss’ (1998) term.

(6.18) Bùlì:

- (ká) dē-kā àlì/àtì Àtìm dè mángò-kvu, àlégè wà àn yùgì kù.  
 F eat-Nml C Àtìm ate mango-D but he Neg threw-away it  
 ‘It is eating, but not throwing away, that Àtìm ate the mango.’

The scope of the focus varies with pied-piping. When the object is pied-piped together with the predicate, the whole VP is contrasted. Thus in (6.19), the event “eat the mango” is contrasted, for example, with “buy a banana”.

(6.19) Bùlì:

- (ká) mángò-kǔ dē-kā àlì/àtì Àtìm dè dīem.  
 F mango-D eat-Nml C Àtìm ate yesterday  
 ‘It is eating the mango that Àtìm ate yesterday. (e.g. not buying a banana)’

Significantly, however, the clefted predicate in Bùlì, in contrast with Hebrew and Yiddish, cannot be a topic or a theme.<sup>9</sup>

<sup>8</sup>There seem to be languages that cannot use PCC as an answer to “What did you do?”-type questions. One such example is Yòrùbá. Haitian Creole seems to be rather shaky. PCC is most naturally used as a contrastive focus in Haitian Creole, but can be marginally used as an answer to the *Wh*-question (M. DeGraff p.c.). More investigation is necessary.

<sup>9</sup>Semantic interpretation of PCC is not uniform cross-linguistically. See Landau (2003) and Cable (2003) on this point.

(6.20) Bùlì:

- a. (ká) bwà ati fú dè?  
 F what C 2Sg. ate  
 'What did you eat?'
- b. # (ká) dē-kā ati ò dé mángò.  
 F eat-Nml C 1Sg. ate mango(Id)  
 'As for eating, I ate a mango.'

### 6.2.3 Nominalization, Pied-Piping, and Objects

#### 6.2.3.1 Nominalization

The PCC in Bùlì has two interesting properties worth noting. First, the clefted predicate is obligatorily nominalized by the suffix *-kā* (singular) or *-tā* (plural).<sup>10</sup>

(6.21) Bùlì:

- a. Àtìm dè mángò-kǔ dīem.  
 Àtìm ate mango-D yesterday  
 'Àtìm ate the mango yesterday.'
- b. (ká) dē-kā/-tā àlì/àtì Àtìm dè mángò dīem.  
 F eat-Nml.Sg./-Nml.Pl. C Àtìm ate mango(Id) yesterday  
 'It is eating(s) that Àtìm ate a mango yesterday.'

The nominalizing suffix has a mid-tone and the nominalized verb also realizes a mid-tone. This suffix is similar to the Class III singular definite marker (6.22a), although the tone is mid and hence does not indicate definiteness in PCC. The corresponding plural form is usually the Class IV plural indefinite suffix *ta* in verb-nominalization as indicated in (6.22b), while some verbs utilize other class suffixes.

(6.22) Bùlì:

- a. báŋ-ká  
 lizard-Class.Sg.D  
 'the lizard'
- b. tī:-tā  
 trees-Class.Id.Pl.  
 'trees'

This nominalization strategy is also used in other gerundive constructions, as shown in (6.23).

<sup>10</sup>An anonymous reviewer *Linguistic Analysis* suspects a possibility that the nominalizer *-kā* could be related to the copula *ká*. However, the copula does not show any distinction in number and definiteness. Furthermore, while the nominalizing suffix in PCC has a mid tone, the copula always has a high tone.

(6.23) Bùlì:

Àtìm nāyī-kā/-tā àn nālā.  
 Àtìm hit-Nml.Sg./-Nml.Pl. Neg good

‘Hitting(s) Àtìm is not good.’

‘Àtìm’s hitting(s) is not good.’

This morphological evidence indicates that the categorial status of the nominalized verb is more than just the minimal “V” category, which, anticipating the later analysis, I assume to be a root category  $\sqrt{r}$ . Rather, the nominalized verb in PCC at least consists of the root and number and class-marker.

That the predicates suffixed with *-kā* are nominalized is further confirmed by the fact that they can be relativized, yielding a so-called *manner reading* (see Williams 1977, Collins 1994).

(6.24) Bùlì:

a. nāyī-kā:y/-tā:y àtì Àtìm nàyì Àmòak lǎ àn nālā.  
 hit-Nml.Rel.Sg./-Nml.Rel.Pl. C Àtìm hit Àmòak Dem Neg good

‘The way in which Àtìm hit Àmòak (more than once) is not good.’

b. Àmòak nāyī-kā:y/-tā:y àtì Àtìm nàyì wà lǎ àn nālā.  
 Àmòak hit-Nml.Rel.Sg./-Nml.Rel.Pl. C Àtìm hit him Dem Neg good

‘The way in which Àtìm hit Àmòak (more than once) is not good.’

c. fù/n nāyī-kā:y/-tā:y àtì Àtìm nàyì fā/mō lǎ àn nālā.  
 2Sg./1Sg. hit-Nml.Rel.Sg./-Nml.Rel.Pl. C Àtìm hit 2Sg./1Sg. Dem Neg good

‘The way in which Àtìm hit you/me (more than once) is not good.’

### 6.2.3.2 Object Pied-Piping

Secondly, in Bùlì, objects of verbs can be pied-piped in the PCC (Also see Yòrùbá (Manfredi 1993) and a subtype of PCC in Gungbe and Ewegbe (Aboh 2004)). The object, when pied-piped, cannot be overtly realized in the in-situ position (6.25a). Elements that can be pied-piped are restricted to objects; thus adverbials (6.25b), subjects (6.25c), and prepositional phrases (6.25d) are excluded.

(6.25) Bùlì:

a. (ká) mángò(-kǔ) dē-kā àlì/àtì Àtìm dè (\*mángò-kǔ) dīem.  
 F mango(-D) eat-Nml C Àtìm ate (mango-D) yesterday

‘It is eating the/a mango that Àtìm ate yesterday.’

b. \* (ká) dīem/nwūlì dē-kā àlì/àtì Àtìm dè mángò-kǔ.  
 F yesterday/quickly eat-Nml C Àtìm ate mango-D

‘It is eating yesterday/quickly that Àtìm ate the mango.’

- c. \* (ká) Àtìm dē-kā àlì/àtì (wà) dè mángò-kǔ dīem.  
 F Àtìm eat-Nml C Àtìm ate mango-D yesterday  
 ‘It is Àtìm’s eating that he ate the mango yesterday.’
- d. \* (ká) àlì Àtìm chēŋ-kā àlì/àtì Àmòak chēŋ Accra dīem.  
 F with Àtìm go-Nml C Àmòak went Accra yesterday  
 ‘It is going with Àtìm that Àmòak went to Accra yesterday.’

Furthermore, PCC in Bùlì never pied-pipes a category larger than the lexical verb. For instance, the progressive aspect auxiliary verb *boro-a* cannot appear with the clefted predicate as shown in (6.26a). Likewise, as (6.26b) shows, the negation particle *àn* cannot be pied-piped in a Predicate Cleft.<sup>11</sup>

(6.26) Bùlì:

- a. (ká) (\*bòrò-à) dē-kā àlì/àtì Àtìm bòrò-à dè mángò, àtì n̄ jàm lǎ.  
 F Prog-Prog eat-Nml C Àtìm Prog-Prog ate mango C 1Sg. came Dem  
 ‘When I came, it was eating that Àtìm was eating a mango.’
- b. (ká) (\*àn) dē-kā àlì/àtì Àtìm àn dè mángò dīem.  
 F Neg eat-Nml C Àtìm Neg ate mango(Id) yesterday  
 ‘It is not eating that Àtìm didn’t eat a mango yesterday.’

### 6.2.3.3 Case-Marking and Object Positioning

There is some evidence that the pied-piped object in Bùlì does not get accusative Case, in contrast with Hebrew, in which overt accusative Case-marking is available within the fronted verb category, as shown in (6.27).

<sup>11</sup>When a predicate is focused, no other element within the same clause can be *Wh*-questioned.

(i) Bùlì:

- a. \* (ká) dē-kā àlì/àtì Àtìm dè bwà dīem?  
 F eat-Nml C Àtìm ate what yesterday  
 ‘It is eating that Àtìm ate what yesterday?’
- b. \* (ká) bwà àlì/àtì dē-kā àlì/àtì Àtìm dè dīem?  
 F what C eat-Nml C Àtìm ate yesterday  
 ‘What, is it eating that Àtìm ate yesterday?’

If, however, the *Wh*-object is pied-piped with the predicate, the sentence becomes well-formed.

(ii) Bùlì:

- (ká) bwà dē-kā àlì/àtì Àtìm dè dīem?  
 F what eat-Nml C Àtìm ate yesterday  
 ‘It is eating what that Àtìm ate yesterday?’

(6.27) Hebrew (Landau 2003, 7)

kiknot **et** ha-praxim, hi kanta.  
to-buy Acc D-flowers she bought

‘Buy the flowers, she did.’

The same is true of Yòrùbá. Although we do not go into details here, the low tone deletion of the nominalized verb *ra* has been taken to be an indication of Accusative Case-marking on the object (See Ajíbóyè et al. 2003 for related discussions).<sup>12</sup>

(6.28) Yòrùbá (based on Kandybowicz 2003)

Rí-ra **mótò** ni Olú ra **mótò**.  
Red-buy car F Olu buy car

‘It is buying a car that Olu bought a car.’

Compare the Hebrew and Yòrùbá examples with Bùlì.

(6.29) Bùlì:

(ká) **mángò(-kǔ) dē-kā** àlì/àtì Àtìm dè dēm.  
F mango(-D) eat-Nml C Àtìm ate yesterday

‘It is eating the/a mango that Àtìm ate yesterday.’

There are two points to be noted about (6.29). First, the object is dislocated to the left. Second, the Case-marking of the object changes. Morphological evidence from pronouns shows that the shifted object in the PCC receives genitive Case, not accusative Case. In the base sentence (6.1a), the 1st person pronoun is in the accusative form. In the PCC sentence with object pied-piping (6.1b), however, the pronoun must be in the nominative/genitive form.<sup>13,14</sup>

<sup>12</sup>I am indebted to Victor Manfredi for pointing this out to me.

<sup>13</sup>Bodomo (2004) also observes that the morphological case of pronouns changes from “Nominative” to “Genitive” in Dagaare gerund constructions.

<sup>14</sup>PCC in Dagaare contrasts with Bùlì in two respects. It does not allow object pied-piping and the clefted predicated can be marked with the definite determiner *á*.

(6.1) Bùlì:

a. Àtìm pù:sì \***ń/mā**.  
Àtìm greeted 1Sg.(Nom/Gen)/1Sg.(Acc)  
‘Àtìm greeted me.’

b. (ká) **ń/\*mā** **pū:sī-tā** àlì/àtì Àtìm pù:sì.  
F 1Sg.(Nom/Gen)/1Sg.(Acc). greet-Nml.Pl. C Àtìm greeted

‘It is greeting me that Àtìm greeted.’

(i) Dagaare (Adams Bodomo p.c.)

The pied-piping of the object feeds semantic interpretation. Thus when only a verb undergoes Predicate Clefting, it yields a V-contrastive reading (see (6.30a)). When the object is pied-piped, however, it yields a VP-contrastive reading (see (6.30b)). This contrasts with Fongbe, which Lefebvre 2002 reports allows ambiguity between VP-contrastive and V-contrastive readings in the counterpart of (6.30a), whereas Fongbe disallows object pied-piping in PCC.

(6.30) Bùlì:

- a. (ká) **dē-kā** àlì/àtì Àtìm dè mángò-kǔ dīem.  
 F eat-Nml C Àtìm ate mango-D yesterday  
 ‘It is eating that Àtìm ate the mango yesterday. (e.g. not throwing it away)’
- b. (ká) **mángò-kǔ dē-kā** àlì/àtì Àtìm dè dīem.  
 F mango-D eat-Nml C Àtìm ate yesterday  
 ‘It is eating the mango that Àtìm ate yesterday. (e.g. not buying a banana)’

Furthermore, the word order shift from head-initial to head final suggests that the fronted category is in the nominal domain, rather than in the verbal domain. Recall that Bùlì exhibits head-initial order in the CP domain but head-final order in the DP domain. The only element that comes before the head in the DP domain is a possessive element.

(6.31) Bùlì:

- Àtìm** mángò(-kú-lá)  
 ÀtìmGen mango(-D-Dem)  
 ‘Àtìm’s mango/the mango of Àtìm’s/that mango of Àtìm’s’

In the same way, in (6.29), the object of the predicate has been placed to the left of the predicate.

This is more clearly shown in Serial Verb Constructions (SVC). SVC in (6.32a) can also undergo Predicate Cleft in Bùlì as shown in (6.32b). In his study of Dàgáárè, a related Gur language, Bodo (2004) calls the relevant construction *Serial Verb Nominalization*. This process is fairly productive in PCC in Bùlì. As in many languages, the shared object in SVC must come between the two verbs.

- 
- a. **ngmééǎ́bó lá** kà Dakoraa ngmè Ayuo.  
 hit F C Dakoraa hit Ayuo  
 ‘It is hitting that Dakoraa hit Ayuo.’
- b. **à ngmééǎ́bó lá** kà Dakoraa ngmè Ayuo.  
 D hit F C Dakoraa hit Ayuo  
 ‘It is the hitting that Dakoraa hit Ayuo.’
- c. ?? **Ayuo ngmééǎ́bó lá** kà Dakoraa ngmè.  
 Ayuo hit F C Dakoraa hit Ayuo  
 ‘It is hitting that Dakoraa hit Ayuo.’
- d. \*? **à Ayuo ngmééǎ́bó lá** kà Dakoraa ngmè Ayuo.  
 D Ayuo hit F C Dakoraa hit Ayuo  
 ‘It is the hitting that Dakoraa hit Ayuo.’

(6.32) Bùlì:

- a. Atìm sè lām ṛòbì.  
 Àtìm roasted meat eat  
 'Àtìm roasted and ate meat.'
- b. (ká) sē-ṛòbì-kā àlì/àtì Àtìm sè lām ṛòbì.  
 F roast-eat-Nml C Àtìm roasted meat eat  
 'It is roasting and eating that Àtìm roasted and ate meat.'

When Predicate Clefting applies to SVC with object pied-piping, however, the order is changed from  $V_1$ -OBJ- $V_2$  to OBJ- $V_1$ - $V_2$ , as observed in (6.33a) and (6.33b). This word order can most naturally be considered to be due to some movement operation of the object to the left.

(6.33) Bùlì:

- a. (ká) lām sē-ṛòbì-kā àlì/àtì Àtìm sè ṛòbì.  
 F meat roast-eat-Nml C Àtìm roasted eat  
 'It is roasting and eating meat that Àtìm roasted and ate.'
- b. \* (ká) sē lām ṛòbì-kā àlì/àtì Àtìm sè ṛòbì.  
 F roast meat eat-Nml C Àtìm roasted eat  
 'It is roasting and eating meat that Àtìm roasted and ate.'

### 6.2.4 The Size of the Category

So far we have evidence showing that the size of the category of the clefted predicate is larger than the minimal root head. One piece of evidence, as we have just pointed out, is that objects can be pied-piped and assigned Genitive Case. Assuming that the source of structural Case is an interaction between a particular functional head and agreement features, the clefted nominalized predicate must contain a functional head responsible for valuing genitive Case.

There is further evidence to indicate that the fronted category at least consists of two functional heads: class and number.

#### 6.2.4.1 Class

In PCC in Bùlì, the form of the nominalizers *-kā/-tā-* is homophonous with noun class markers III and IV, respectively.

(6.34) Bùlì:

- a. báṛ-ká  
 lizard-Class.Sg.D  
 'the lizard'
- b. tī:-tā  
 trees-Class.Id.Pl.  
 'trees'

(6.35) Bùlì:

(ká) nāyī-kā/-tā àlì/àtì Àtìm nàyì Àmḍak.  
F hit-Nml.Id.Sg./-Nml.Id.Pl. C Àtìm hit Àmḍak

‘It is hitting that Àtìm hit Àmḍak.’

#### 6.2.4.2 Number/Aspect

Second, the clefted predicate is inflected for number. The suffix *kā* indicates singular, whereas the suffix *-tā* indicates plurality. The plurality in PCC expresses an aspectual property whereby the action is repeated.

(6.36) Bùlì:

a. (ká) nāyī-kā àlì/àtì Àtìm nàyì Àmḍak.  
F hit-Nml.Id.Sg. C Àtìm hit Àmḍak

‘It is hitting (once) that Àtìm hit Àmḍak.’

b. (ká) nāyī-tā àlì/àtì Àtìm nàyì Àmḍak.  
F hit-Nml.Id.Pl. C Àtìm hit Àmḍak

‘It is hitting more than once that Àtìm hit Àmḍak.’

#### 6.2.4.3 Definiteness

Definiteness, on the other hand, cannot be specified in PCC in Bùlì. Definiteness in Bùlì is usually marked by a class-marker plus a high tone in Bùlì. The nominalizing class suffix, however, must have a mid tone in PCC in Bùlì and therefore a high tone on the nominalizing suffix is ill-formed.<sup>15</sup>

<sup>15</sup>This contrasts with other gerundive constructions and verb-doubling constructions. In the former, mid and high tones are both grammatical, while in the latter, a high tone is required. Lefebvre (2002) makes a similar observation for Fongbe.

(i) Bùlì:

a. Gerundive Subject

Àtìm nāyī-kā/-ká àn nālā.  
Àtìm hit-Nml.Id/Nml.D Neg good

‘(The) way of hitting Àtìm was not good.’

b. Gerundive Object

(ká) nāyī-kā/-ká àlì/àtì Àtìm yà:lì.  
F hit-Nml.Id/-Nml.D C Àtìm like/want

‘Àtìm likes (the) hitting.’

c. Factive

nāyī-<sup>o.k.</sup>kā/-ká àlì/àtì Àtìm nàyì Àmḍak lá tē wà mà pò piēntk.  
hit-Nml.Id/-Nml.D C Àtìm hit Àmḍak Dem gave 3Sg.Poss. mother stomach white

‘The fact that Àtìm hit Àmḍak pleases his mother.’

d. Adverbial Clause

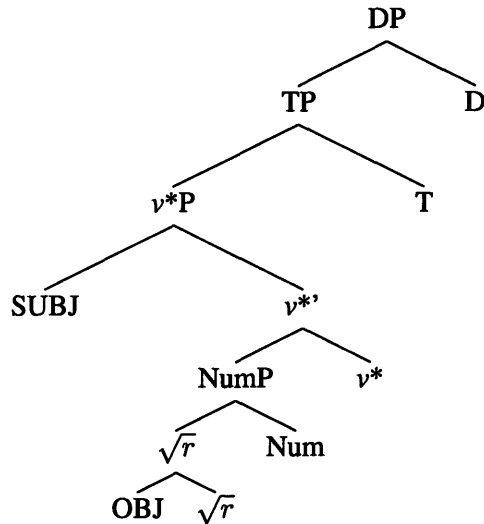


(6.37) Bùlì:

- a. (ká) nāyī-kā/\*ká àlì/àtì Àtìm nàyì Àmòak.  
 F hit-Nml.Id.Sg./-D.Sg. C Àtìm hit Àmòak  
 ‘It is hitting (once) that Àtìm hit Àmòak.’
- b. (ká) nāyī-tā/\*tá àlì/àtì Àtìm nàyì Àmòak.  
 F hit-Nml.Id.Pl./-D.Pl. C Àtìm hit Àmòak  
 ‘It is hitting more than once that Àtìm hit Àmòak.’

Full gerunds (i.e. nominalized predicates) in Bùlì will have the following structure. We will return to detailed discussions of the geometric structure of syntactic categories in Section 6.4.

(6.38) The Full Structure of the Gerund



The question is how much structure nominalized predicates in PCC in Bùlì contain. Given the evidence presented above –the lack of pied-piping of external arguments and the presence of number/aspect inflection– I propose the following structure.

---

Àtìm nàyì Àmòak, dē-<sup>o.k.</sup>\*ká àlì/àtì wà dè wà mǎngò-kú lá jìŋ.  
 Àtìm hit Àmòak, eat-Nml.Id/Nml.D C 3Sg. ate 3Sg.Poss. mango-D Dem reason  
 ‘Àtìm hit Àmòak because he ate his mango.’



Significantly, unlike Fɔ̀ngbe (Lefebvre 2002), cognate objects in Bùlì do not block Predicate Clefting. Thus either the predicate or its cognate can be focused in a cleft.

(6.41) Bùlì:

- a. **Àtìm pù:sì pū:s-ā.**  
 Àtìm greeted greeting-Id.Pl.  
 ‘Àtìm greeted greetings.’
- b. **(ká) pū:s-ā àlì/àtì Àtìm pù:sì.**  
 F greeting-Id.Pl. C Àtìm greeted  
 ‘It is greetings that Àtìm greeted.’
- c. **(ká) pū:sī-kā àlì/àtì Àtìm pù:sì pū:s-ā.**  
 F greet-Nml.Sg. C Àtìm greeted greeting-Id.Pl.  
 ‘It is greeting that Àtìm greeted.’

(6.42) Bùlì:

- a. **wà zù zùm/zū-kā/?-tā.**  
 3Sg. stole theft(Id.Sg.)/steal-Nml.Sg./-Nml.Pl.  
 ‘He carried out a theft.’
- b. **(ká) zùm/zū-kā/-tā àlì/àtì wà zù.**  
 F theft(Id.Sg.)/steal-Nml.Sg./-Nml.Pl. C 3Sg. stole  
 ‘It is stealing that he stole.’

### 6.3.2 Against Cognates as Input to PCC

The existence of the productive cognate object construction may lead one to think that PCC is derived from it by moving the cognate object to [Spec, CP]. There are good reasons, however, to indicate that this is not the case.

#### 6.3.2.1 Focus Interpretations

First, as we have seen in Section 6.2, the focus interpretation for non-predicates remains the same whether the focused element is moved or left in-situ. We would expect, then, that (6.43a) and (6.43b) would be equally grammatical with the same interpretation, contrary to fact. While (6.43b) has a V-contrastive reading whereby “eating” and another event are contrasted, (6.43a) does not have any natural interpretation. (6.43a) is necessarily interpreted as contrasting “eat eating” with “eat X-ing” and is hence ill-formed.

(6.43) Bùlì:

- a. \* **Àtìm dè ká dē-kā/-tā.**  
 Àtìm ate F eat-Nml.Sg./-Nml.Pl.  
 ‘Àtìm ate.’

- b. (ká) **dē-kā/-tā** àlì/àtì Àtìm dè.  
 F eat-Nml.Sg./-Nml.Pl. C Àtìm ate  
 ‘It is eating/eatings that Àtìm ate.’

### 6.3.2.2 Number

Second, as we have seen, the cognate object must be, in principle, in plural form, irrespective of the semantic interpretation. Thus, a plural form can yield either a singular or a plural interpretation. By contrast, in PCC, the fronted predicate can take either a singular or a plural form, depending on the semantics. If PCC were derived from the former, only the plural form would be used in PCC, contrary to fact.

(6.44) Bùlì:

- a. Àtìm **nàyi nāyī-?? kā/-tā**.  
 Àtìm hit hit-Nml.Sg./Nml.Pl.  
 ‘Àtìm hit. (Lit. Àtìm hit hittings)’
- b. (ká) **nāyī-kā/-tā** àlì/àtì Àtìm **nāyī** Àmòak.  
 F hit-Nml.Sg./-Nml.Pl. C Àtìm hit Àmòak  
 ‘It is hitting/hittings that Àtìm hit Àmòak.’

### 6.3.2.3 Transitivity

In the cognate object construction, direct objects are only marginally allowed, with varied acceptability with different verbs. PCC, on the other hand, can freely pied-pipe the direct object, as we have already seen.

(6.45) Bùlì:

- a. Àtìm **nàyi** (??/?? Àmòak) **nāyī-?? kā/-tā**.  
 Àtìm hit Àmòak hit-Nml.Sg./Nml.Pl.  
 ‘Àtìm hit (Àmòak). (Lit. Àtìm hit (Àmòak) hittings)’
- b. (ká) **Àmòak nāyī-kā/-tā** àlì/àtì Àtìm **nāyī**.  
 F Àmòak hit-Nml.Sg./-Nml.Pl. C Àtìm hit  
 ‘It is hitting Àmòak that Àtìm hit.’
- c. (ká) **nāyī-kā/-tā** àlì/àtì Àtìm **nāyī** Àmòak.  
 F hit-Nml.Sg./-Nml.Pl. C Àtìm hit Àmòak  
 ‘It is hitting that Àtìm hit Àmòak.’

### 6.3.2.4 Case-marking

Finally, even if the direct object is allowed marginally, the morphology of the direct object pronoun shows that it is Case-marked by the main verb —i.e. Accusative—in the cognate object construction, not Genitive. Notice that in the following example, the first person singular pronoun cannot

be in the nominative/genitive form. This morphosyntactic evidence indicates that the object forms a constituent with the main verb, not with the cognate object. Specifically, the object is in the position where genitive Case from the cognate object DP is not available. This contrasts with PCC with object pied-piping, under which the direct object pronoun is obligatorily realized as nominative/genitive, not accusative.

(6.46) Bùlì:

- a. Àtìm lè      \*n̄/mō                      lē-tā.  
 Àtìm insulted 1Sg.(Nom/Gen)/1Sg.(Acc) insult-Nml.Pl.  
 ‘Àtìm insulted me. (Lit. Àtìm insulted me an insult)’
- b. (ká) n̄/\*mō                      lē-kā              àlì/àtì Àtìm lè.  
 F 1Sg.(Nom/Gen)/1Sg.(Acc). insult-Nml.Pl. C Àtìm insulted  
 ‘It is insulting me that Àtìm insulted.’

The four arguments presented above indicate that it is not tenable to assume that PCC in Bùlì finds its origin in the cognate object constructions, in contrast with some other Kwa languages.<sup>16</sup>

### 6.3.3 Three Challenges

To summarize, the PCC in Bùlì shows every indication of  $\bar{A}$ -movement. The category targeted in PCC is either the verbal category or the verbal phrase category, in which case an internal argument (typically a direct object) is pied-piped. The fronted category is nominalized; this can be directly seen in the form of the nominalizing suffix *-kā/-tā* and the word order shift from head-initial to head-final. Finally, the landing site of the clefted predicate in PCC in Bùlì is [Spec, CP]. This is confirmed by the fact that the complementizer used in PCC is the same as that in *Wh*-Questions and Focus constructions and that the semantic interpretation of PCC in Bùlì is focusing (contrastive or emphatic), but never thematization or topicalization.

Now given the data so far, it is clear that there are three possible types of Predicate Cleft in Bùlì: (i) PCC with a single verb, (ii) PCC with serial verbs, and (iii) PCC with object pied-piping. Reducing these three variants to differences in pied-piping, we can assume the following derivations.

- (6.47) a. Movement of a single/multiple  $\sqrt{r}$  category/categories with pied-piping of the higher functional head. (#- $\sqrt{r}$ )  
 b. Movement of a single/multiple  $\sqrt{r}$  category/categories with pied-piping of the whole  $\sqrt{r}$  projection containing the higher functional head. (#P)

The rest of this chapter attempts to provide a principled explanation of the following three issues using the minimalist framework.

- (6.48) a. Why is the copy of the clefted predicate doubly pronounced?

<sup>16</sup>George Akanlig-Pare notes that cognate object constructions sound relatively new. It would be interesting to see the historical development of PCC and the cognate object construction, but unfortunately, there is no historical data available for this language.

- b. How and why does nominalization occur?
- c. How is the object pied-piped and displaced to the left of the nominalized predicate?

Any analysis of PCC must be able to explain the property (6.48a). In fact this is a hallmark property of PCC that has resisted a principled account (see Koopman 1984, Manfredi 1993, Harbour to appear, Cable 2003, Landau 2003 for various approaches.). The mechanism of nominalization, property (6.48b), has not been explicated yet. Manfredi (1993), through an investigation of Yòrùbá, Igbom and various other languages, argues that nominalization takes place within the VP, which subsequently undergoes a focus movement. As shown above, in Bùlì there is no evidence that nominalization occurs within VP. Finally, the mechanism of object pied-piping and its shifting must be provided with a theoretical account (6.48c).

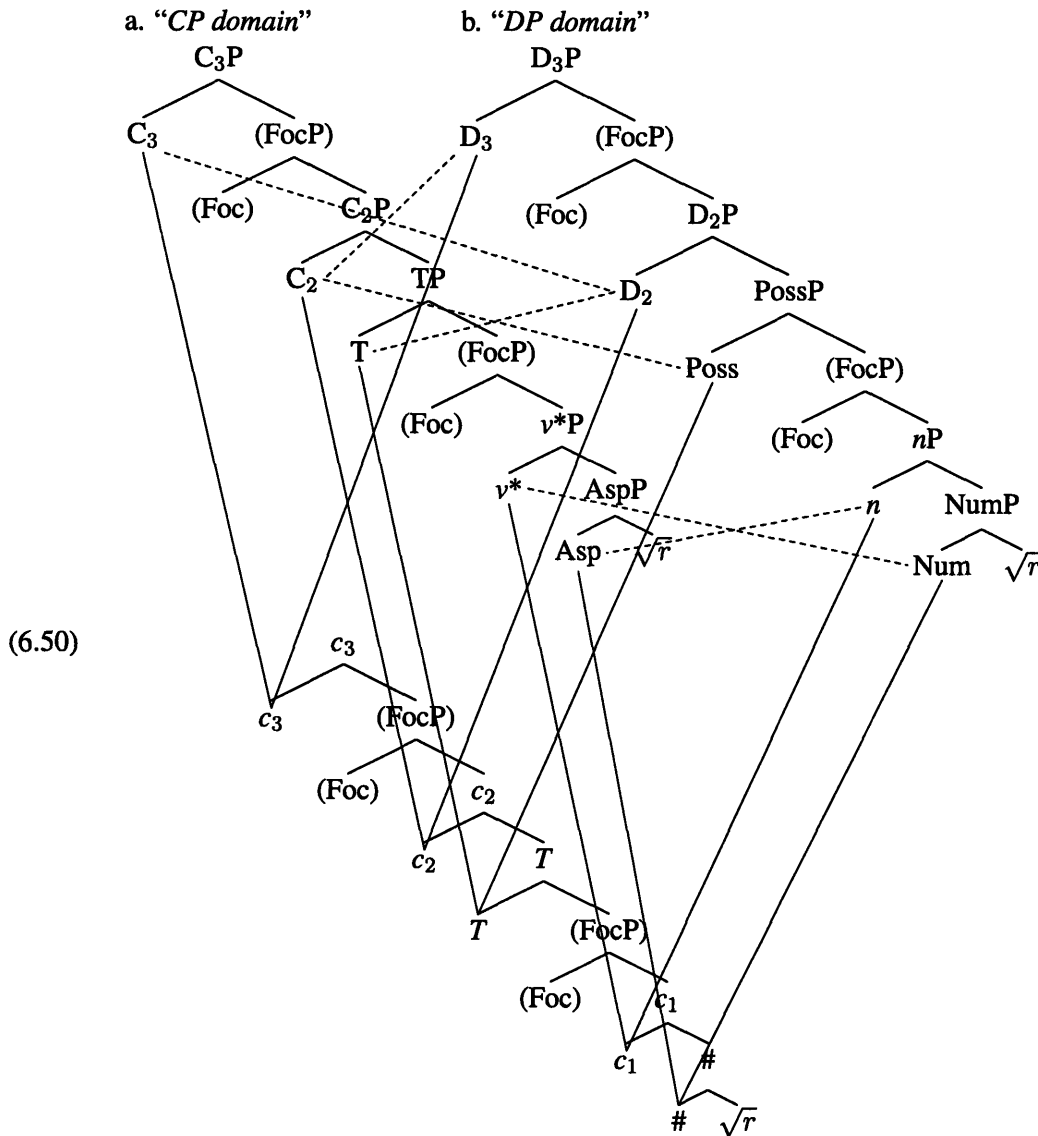
## 6.4 The CP/DP Symmetry and Predicate Clefts

In the remainder of the chapter, I demonstrate that the three issues set on our agenda are provided with a unified solution under an articulated theory of the CP/DP SYMMETRY. I will first lay out the theoretical proposals and then examine the derivation of PCC in Bùlì.

### 6.4.1 The Mechanism of Nominalization and the CP/DP Symmetry

A number of important studies on the parallelism between DPs and CPs (Chomsky 1970, Abney 1987, Lefebvre and Muysken 1988 Szabolcsi 1994, Collins 2001a among many others) have revealed that the DP domain and the CP domain exhibit a large degree of parallelism. Building on Rizzi's articulated left periphery, I have proposed the following Supercategorial Theory of the CP/DP Symmetry.

(6.49) SUPERCATEGORIAL THEORY OF THE CP/DP SYMMETRY



Under the Supercategorical Theory, the symmetric structures in (6.49) are derived from the supercategorical structure (6.50). It is not the case that there are two different structures for DP and CP; rather, there is a single unique structure and those two apparently different syntactic objects are created by each phase head ( $c_1$ ,  $c_2$ ,  $c_3$ ). This is indicated by the solid lines in the above diagram. Let us explicate this in more detail.  $C_3$  and  $D_3$ , for example, are different manifestations of the supercategory  $c_3$ .<sup>17</sup> Their difference lies in whether they function as a nominalizer or a verbalizer. If it is a nominalizer, it becomes “D”, while it becomes “C” if it is a verbalizer. Thus each of the  $c$

<sup>17</sup>The label  $c$  in the supercategorical structure (6.50) is just arbitrary and nothing hinges on what it is called.

heads, which are also phase heads, functions as a category determiner. I further assume that each super-categorical node is a target for insertion of a categorial feature  $[\pm N]$  at the point of Transfer.<sup>18</sup>

- (6.51) a. Symmetric CP/DP structures (6.49) are built on a supercategorical structure (6.50).  
 b. The categorial status of the complement of each phase head  $c$  is determined by the phase head  $c$ .  
 c. A categorial feature is inserted at Transfer.

Thus, if  $c_1$  for example gets  $[-N]$ , it becomes  $v^*$  and the head dominated by it becomes verbal (i.e.  $\# \rightarrow \text{Asp}$ ) and  $v^* \text{-Asp-}\sqrt{r}$  functions as a verb. If, on the other hand,  $[+N]$  is inserted to  $c_1$ , it becomes  $n$  and the whole category functions as a noun (with  $\# \rightarrow \text{Num}$ ). This theory is crucially built on the insight of Marantz (1997), who presents a compelling argument against Lexicalism and for a theory under which words are constructed in narrow syntax. On this view, the root category  $\sqrt{r}$  plays a crucial role; the root is category-neutral and gives rise to the V/N distinction upon merger with “small”  $v/n$  in narrow syntax. Elaborating on the insight of Marantz (1997), I further propose that higher phase heads ( $c_3$  and  $c_2$ ) have the same function as  $v/n$ ; they derivationally “determine” the categorial status  $[\pm N]$  of their complements at Transfer. Put differently, category “labels” are derivationally assigned at each phase level.<sup>19</sup>

An immediate consequence of the Supercategorical Theory of CP/DP Symmetry is that it naturally derives mixed category structures. Put another way, the CP and DP structures in (6.49) are just possible representations that are derived from a general schema in (6.50) through *interweaving*. This is indicated by the dotted lines. The theory predicts the existence of other structures with pieces of nouns and sentences “interwoven”.

- (6.52) The Supercategorical Theory of CP/DP Parallelism and Category Determination  
 (cf. Marantz 1997; also Chomsky 1970, Grimshaw 1991/2001)
- a. Phase One  $c_1$ :
- i.  $v^*+\#+\sqrt{r}$ : Verb
  - ii.  $n+\#+\sqrt{r}$ : Noun
- b. Phase Two  $c_2$ :
- i.  $C_2+\text{TP}$ : Extended Verbal Projection of VP
  - ii.  $D_2+\text{TP}$ : Extended Nominal Projection of VP (=Gerunds)
- c. Phase Three  $c_3$ :
- i.  $C_3+C_2\text{P}$ : Extended Verbal Projection of FinP
  - ii.  $D_3+C_2\text{P}$ : Extended Nominal Projection of FinP (=Clausal Nominalization)

<sup>18</sup>One might think that Transfer is triggered by categorial determination. This is a plausible possibility but I leave the issue open here.

<sup>19</sup>The theory that I propose, however, has a crucial difference from Grimshaw’s (Grimshaw 1991/2001) theory of Extended Projections: the category-determination process proceeds bottom-up for Grimshaw (i.e. categorial features are projected up from N/V), while it works top-down at each phase level for my theory.



As we have seen,  $c_1, n$ , or  $v^*$  functions as a category determiner for # and  $\sqrt{r}$ . The upshot of the proposed theory is that this process recurs at each phase:  $c$ . Thus nominalization can take place at three points in the derivation:  $c_1$ ,  $c_2$ , and  $c_3$ . If this happens at the second phase level  $c_2$ , it can give rise to *gerunds*. When  $c_3$  is merged with  $C_2P$  and a [+N] feature is inserted to  $c_3$  at Transfer,  $c_3$  becomes  $D_3$  and the whole clause ( $C_2P$ ) is nominalized. Languages vary how this clausal nominalization is realized. One example is clausal determiner constructions, which we will discuss shortly. Other phenomena include nominalized CP complements observed in many languages, including Quechua and Japanese and so-called *Wh*-agreement in Chamorro and many other languages (see Chung 1998, Watanabe 2003, and Chapter 3 and Chapter 7).

#### 6.4.2 PCC as #- $\sqrt{r}$ Movement

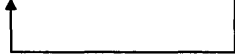
Next, let us take up the issue of the bi-locational PF realization in PCC. I argue, adopting and further elaborating on the insight of Abels (2001) and in particular Harbour (1999), that verb-doubling in PCC is a result of an interface condition. Abels (2001) proposes, based on Russian, that the lower copy of the verb needs to be spelled out because (i) Russian lacks *do*-support and (ii) inflectional features of T(ense) cannot be stranded (see Lasnik 1981, 1995 for the *Stray Affix Filter*). This account neatly explains the contrast below.

(6.53) Russian (Abels 2001)

- a. Čitat' (-to) Ivan eë \*(čitaet), no ničego ne ponimaet.  
 read(Inf) (TO) Ivan it(Fem.Acc) read but nothing not understand  
 'Ivan does read it, but he doesn't understand a thing.'
- b. Čitat' (-to) on budet -čitaet.  
 read(Inf) (TO) he will read  
 'He will read.'

In (6.53a), the lower copy of the verb must be phonologically realized, while in (6.53b), it cannot be. The difference is due to the fact that in the former, T's inflectional features are otherwise stranded, but in the latter, they are taken care of by the overt future particle *budet*.

(6.54) Čitat' (-to) Ivan eë čitaet, no ničego ne ponimaet.



The analysis, however, cannot be applied to Bùlì at its face value. Consider (6.55). The future particle (*à*)*lì* is followed by an infinitival form of a verb, which is indicated by a mid-tone and the absence of prosodic person agreement (see Akanlig-Pare and Kenstowicz 2003b for details of prosodic person agreement in Bùlì.). As shown in (6.55), however, the future particle cannot obviate pronouncing the lower copy of the clefted verb, unlike in Russian.<sup>20</sup>

<sup>20</sup>For some reason that I do not understand fully yet, the future particle *àlì* and the complementizer *àlì/àti* are incompatible within the same clause and hence an example of long-distance Predicate Cleft is used.

(6.55) Bùlì:

(ká) **chāli-kā** àlì/àtì Àtìm wè:nì àyìn Àmòak (à)lì \*(**chàlì**).  
 F run-Nml C Àtìm said that Àmòak Fut run

'It is running that Àtìm said that Àmòak would run.

I argue, extending Abels' insight (Abels 2001), that PCC in Bùlì (and Kwa languages) targets the minimal category —namely,  $\#-\sqrt{r}$ — rather than  $v^*-\#-\sqrt{r}$ . This is supported by the evidence presented in the preceding sections: the fronted predicate cannot pied-pipe elements Merged above  $v^*$  and is not capable of assigning Accusative Case, either. The burden of the interface conditions naturally carries over to  $v^*$  in the sense that the “verbalizer” –being affixal– cannot be stranded without a  $\sqrt{r}$  at Transfer. Reframing it under the proposed theory of CP/DP Symmetry, at Transfer, the  $c$  head must determine the category of its complement.

(6.56)  $c$  must determine the category of its complement at Transfer.

Given the absence of *do*-support in Bùlì, the only strategy to save the derivation is to pronounce the lower copy. Then it is natural that the bi-locational realization is not obviated in (6.55), unlike Russian; the presence of an overt T particle does nothing to save the derivation from the illicit stranded  $v^*$ .

Secondly, the  $\#-\sqrt{r}$ -movement analysis, anticipating the proposal in the next section, opens up a prospect for the question of why in Bùlì and other Kwa languages, the clefted predicates are nominalized. It has been suggested above that in the PCC in Bùlì, the size of the category fronted is more than just  $\sqrt{r}$ ; and the fronted category is obligatorily nominalized. Furthermore, I have also shown that the PCC in Bùlì is underivable from the cognate object construction or any other constructions. So why is the fronted predicate nominalized and where is it from? I argue that nominalization is due to the fact that what is moved is a category-neutral –underdetermined– element. How this is implemented is the main discussion in the subsequent sections.

### 6.4.3 The Supercategory Theory of CP/DP Symmetry and Lefebvre's Correlation

Lefebvre 1992b brings to light an interesting correlation between the so-called *Clausal Determiners* and Predicate Clefts from a cross-linguistic perspective (see also Law and Lefebvre 1995).

(6.57) Lefebvre's Generalization (Lefebvre 1992b)

The availability of predicate clefting in a given grammar is correlated with the presence of a syntactic position for clausal determiners within S (=IP).

Lefebvre (1992b) observes that a dialect of Fɔ̀ngbe, Haitian Creole, and Yòrùbá allow both Clausal Determiners and PCC while another dialect of Fɔ̀ngbe, which lacks the former, also lacks the latter. In the Fɔ̀ngbe examples below, the determiner *ɔ́* occurs as a copula as well as a sentence-final clausal determiner (I gloss *wɛ* as F(ocus) not “it-is” as originally done in Lefebvre 1992b).

(6.58) Fongbe:

- a. Lón wè súnù ó lón.  
 jump F man D jump  
 'It is jump that the man jumped.' (Lefebvre 1992b)
- b. Súnù ó gbà mótò ó ó.  
 man D destroy car D D  
 'The man destroyed the car.' (Larson and Lefebvre in press)

Significantly, Bùlì also has a clausal determiner construction. The distal demonstrative determiner *lá* (6.59) is used in various types of clauses.<sup>21</sup> In (6.60a) and (6.60b), the demonstrative determiner is used for the matrix clauses. The determiner indicates old information.<sup>22</sup>

(6.59) Bùlì:

Àtìm dè mángò-kú-lá.  
 Àtìm ate mango-D-Dem  
 'Àtìm ate that mango.'

(6.60) Bùlì:

- a. Àtìm nàyì Àmòak lá.  
 Àtìm hit Àmòak Dem  
 'Àtìm hit Àmòak (as I said).' (Matrix clause)
- b. (ká) Àmòak àlì/àtì Àtìm nàyì lá.  
 F Àmòak C Àtìm hit Dem  
 'It is Àmòak that Àtìm hit (as I said).' (Matrix clause)

Bùlì also makes use of a clausal determiner in relative clauses (6.61), factive (6.62), and adjunct clauses (6.63).

(6.61) Bùlì:

- a. Àmòak nà [Àtìm àlì/\*àtì s<sup>w</sup>à ná:-būy lá].  
 Àmòak saw Àtìm C own cow-Rel Dem  
 'Àmòak saw the cow which Àtìm owns.' (Relative clause)
- b. Àmòak nà ná:-būy \*àlì/àtì Àtìm s<sup>w</sup>à lá.  
 Àmòak saw cow-Rel C Àtìm own Dem  
 'Àmòak saw the cow which Àtìm owns.' (Relative Clause)

<sup>21</sup>A high tone in Bùlì becomes a rising tone if preceded by a low tone. See Akanlig-Pare and Kenstowicz (2003b)

<sup>22</sup>See Dakubu (1992) for a study of the functions of similar elements in some other West African languages such as Ga and Dàgáárè.

(6.62) Bùlì:

Àtìm àlì nàyi Ayuo lǎ tē Àmòak pò pienti.  
 Àtìm C hit Ayuo Dem gave Àmòak stomach white

‘The fact that Àtìm hit Ayuo pleased Àmòak.’ (Factive)

(6.63) Bùlì:

Àtìm nàyi Ayuo, wa àlì dè wa mango-ku lá niŋ.  
 Àtìm hit Ayuo, 3Sg. C ate 3Sg.Poss. mango-D Dem reason

‘Àtìm hit Ayuo because he ate his mango.’ (Adjunct clause)

The correlation is summarized in the table below.

(6.64) PCC and Clausal Determiners

PCC	Clausal D	
✓	✓	Bùlì, Yòrùbá, Fɔ̀ngbe (A), Gungbe, Haitian Creole, Vata, (dialects of) Ewe, Ga
*	*	Standard Ewe, Fɔ̀ngbe (B)
✓	*	<u>Russian, Yiddish, Hebrew, Polish</u>

While, as DeGraff (1994) observes, the generalization seems to be too strong given the fact that there are languages that allow PCC but that disallow Clausal Determiners (e.g. Russian, Hebrew, Yiddish), it captures, I think, an important fraction of the truth about PCC. That is, PCC in those languages that have Clausal Determiners obligatorily nominalizes the focused predicate in one way or another.<sup>23</sup>

(6.65) In languages that allow a clausal determiner, focused predicates in PCC are nominalized.

I argue that nominalization takes place in the course of the narrow syntactic derivation. As we have seen, what is moving in PCC in Bùlì is not an element whose categorial status is established, but rather an element that awaits categorial determination. The clausal determiner  $c_3$  ( $D_3$  in our CP/DP parallel geometry in (6.49)) functions as a categorial determiner under the Supercategorial Theory of CP/DP Symmetry. Now let us see how the derivation works.

#### 6.4.4 The Derivation: Interweaving under Symmetry

I illustrate how the derivation of PCC in Bùlì proceeds under the proposed theory.

<sup>23</sup>See Cable (2003) for detailed discussions on the peculiarities of Yiddish PCC. PCC in Haitian Creole appears to lack any indications (segmental or supersegmental) of nominalization, however. See DeGraff (1995), Manfredi (1993), and Harbour (to appear).

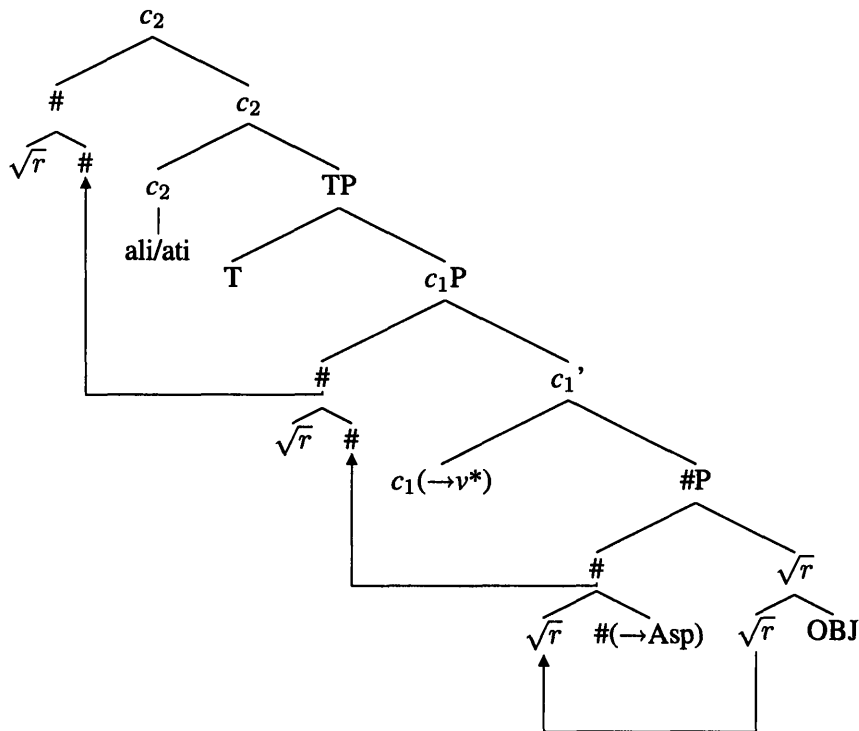
(6.66) Bùlì:

(ká) dē-kā àlì/àtì Àtìm \*(dè) mángò-kǔ dīem.  
 F eat-Nml C Àtìm ate mango-D yesterday

‘It is eating that Àtìm ate the mango yesterday.’

Consider the stage of the derivation where  $\#-\sqrt{r}$  undergoes focus movement to the edge of “CP” successive-cyclically. I assume that  $\sqrt{r}$  undergoes head-movement to  $\#$  obligatorily.

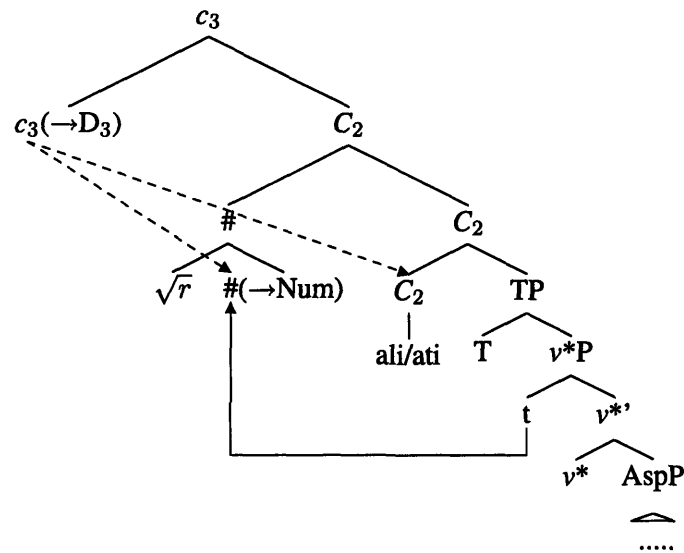
(6.67)



Assuming the recent minimalist framework (Chomsky 2001, 2004a), Transfer of a given phase takes place upon Merge of a higher phase head. Thus Transfer of the  $c_1$  phase takes place at the  $c_2$  phase level. Now at Transfer of the  $c_1$  phase, a  $[-N]$  categorial feature is inserted into  $c_1$ . It verbalizes the heads in its domain (i.e. the  $\#-\sqrt{r}$ ), which are then sent to the interfaces; since  $v^*$  has now undergone a “merger process” (e.g. morphological merger in the sense of Bobaljik 1995), the whole complex ( $v^*-\#-\sqrt{r}$ ) must be overtly spelled-out as a verb due to the principle (6.56) (a kind of PF stray-affix effect proposed for Russian PCC by Abels 2001).

Then,  $c_3$  head is merged with the entire clause, as illustrated in (6.68).  $c_3$  enters into two selectional relations:  $\text{Select}(c_3, C_2P)$  and  $\text{Select}(c_3, \#-\sqrt{r})$ , under a one-to-many relation (Hiraiwa to appear), which is indicated by the dotted lines.

(6.68)



Suppose that at Transfer, a [+N] categorial feature is inserted into  $c_3$ . As argued in the preceding section, this is usually overtly realized as a clausal determiner. This, in effect, makes the whole focus clause headed by a clausal (demonstrative) determiner. However, it has another consequence. The fronted  $\#-\sqrt{r}$ , being in the domain of  $c_3$ , is also selected by the clausal determiner  $D_3$ , based on the other selectional relation  $\text{Select}(c_3, \#-\sqrt{r})$ . Consequently, the fronted elements are Spelled-Out as a noun (i.e. nominalized verb).

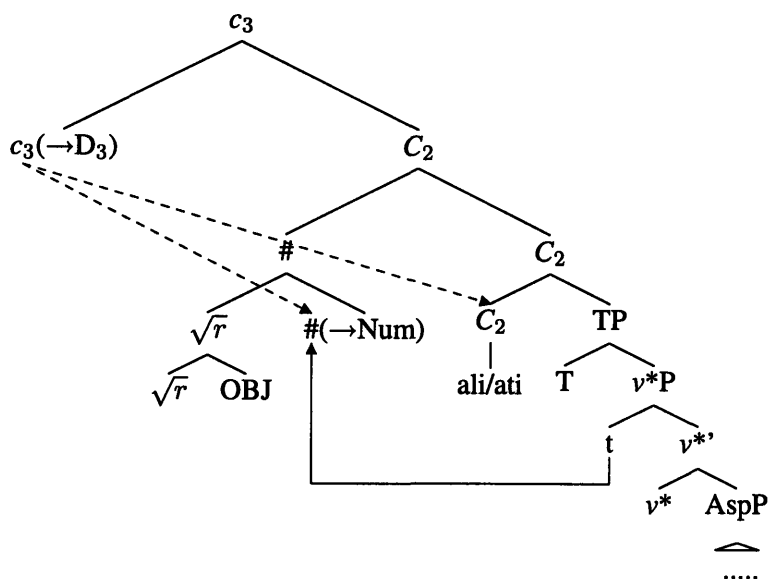
This explains the two main properties of PCC in Bùlì. The copies of the predicate are Spelled-Out bi-locationally, because each of them is required by  $v^*$  downstairs and  $D_3$  upstairs, but not in other places. The fronted predicate undergoes nominalization because of the existence of the clausal determiner  $D_3$ , which selects  $C_2P$  as well as the fronted predicate  $\#-\sqrt{r}$ .

The derivation is basically the same for PCC with object pied-piping.

- (6.69) (ká) mángò-kǔ dē-kā àlì/àtì Àtìm \*(dè) dīem.  
 F mango-D eat-Nml C Àtìm ate yesterday  
 'It is eating the mango that Àtìm ate yesterday.'

I propose that pied-piping of the object results from pied-piping of the whole  $\#P$ . I assume that if the fronted category contains the object, the  $C_3\text{-}\#$  relation makes the probe a genitive Case-assigner, just as  $C\text{-}T$  and  $v^*\text{-}\#$  relations assign nominative and accusative Case, respectively. The object, thus, is moved to the edge of  $\#P$ , perhaps due to an EPP requirement.

(6.70)



## 6.5 Serial Verb Nominalization

### 6.5.1 Multiple Verb Movement and PCC

This theory of PCC, whereby  $\#-\sqrt{r}$  is the target of movement, crucially rests on two conditions in a given language: the absence of overt “verb”-movement to  $v^*$  and the absence of “do”-support. Otherwise, the \*Stranded  $\sqrt{r}$  constraint can be satisfied by  $\#-\sqrt{r}$  to  $v^*$  movement or by inserting a general verb corresponding to English *do*. These make unnecessary the realization of the lower copy of the predicate. Significantly, Bùlì has neither of these strategies. The lack of  $\sqrt{r}$ -to- $v^*$  movement is most clearly highlighted by the fact that Bùlì does not allow Verbal Compounds (Collins 2002). Collins (2002) argues that Verbal Compounds are derived from SVC via multiple verb movement to  $v^*$ . This is illustrated in †Hoan and Ju’hoan.

(6.71) †Hoan:

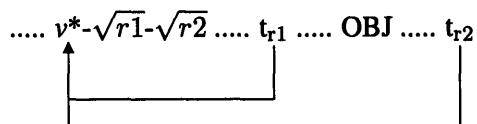
- a. Ma a- q||hu |’o djo ki kx’u na.  
 1Sg. Prog pour put.in water Part pot in  
 ‘I am pouring water into the pot.’ (Collins 2002, 1)
- b. \*Ma a- q||hu djo |’o ki kx’u na.  
 1Sg. Prog pour water put.in Part pot in  
 ‘I am pouring water into the pot.’ (Collins 2002, 2)

(6.72) Ju’hoan:

- Mi m ku tcaq |’u -a glu ko kom n!ang.  
 1Sg. Emph Prog pour put.in Trans water Part. car in

'I am pouring the water into the cup.' (Collins 2002, 3)

(6.73) The Derivation of the Verbal Compound via Multiple Verb Movement



Bùlì contrasts with these two languages (and patterns with Ewegbe) in that Verbal Compounds are disallowed. Two transitive verbs, thus, cannot be adjacent to each other.

(6.74) Bùlì:

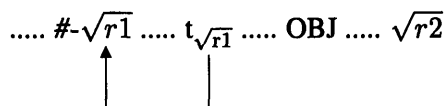
- a. Àtìm sē lām ɲǒbì.  
 Àtìm roast meat ate  
 'Àtìm roasted and ate meat.'
- b. \* Àtìm sē ɲǒbì lām.  
 Àtìm roasted ate meat  
 'Àtìm roasted and ate meat.'

(6.75) Bùlì:

- a. Àtìm pà bàŋ-kǎ d<sup>w</sup>èni gād<sup>v</sup>ú-kú zúk.  
 Àtìm took book-D put bed-D on  
 'Àtìm put the book on the bed.'
- b. \* Àtìm pà d<sup>w</sup>èni bàŋ-kǎ gād<sup>v</sup>ú-kú zúk.  
 Àtìm took put book-D bed-D on  
 'Àtìm put the book on the bed.'

Collins (2002) in fact assumes that the movement of the first verb alone ( $\sqrt{r1}$  in our notation) to  $v^*$  derives SVC. Rephrasing his core idea in terms of the expanded VP structure proposed in this chapter, we propose that # in Bùlì attracts only one  $\sqrt{r}$  -i.e.  $\sqrt{r1}$ .

(6.76) The Derivation of the SVC in Bùlì



### 6.5.2 Serial Verb Nominalization

In Bùlì it is possible to apply Predicate Clefting to SVC. Serial Verb Nominalization (SVN) comes in two varieties. Lee (2003) observes that (i) only the first verb is clefted (see (6.77a)) or (ii) the whole string of serial verbs is clefted (see (6.77b)).

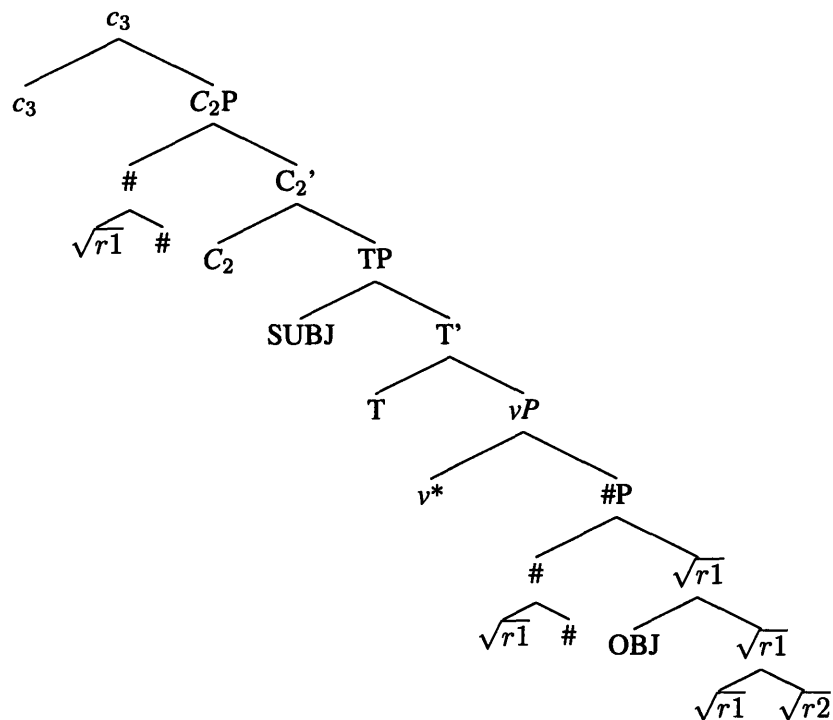


(6.77) Bùli:

- a. (ká) sē-kā àlī/àtì Àtìm sè lām ɲòbì.  
 F roast--Nml C Àtìm roasted meat eat  
 'It is roasting that Àtìm roasted and ate meat.'
- b. (ká) sē-ɲòbì-kā àlī/àtì Àtìm sè lām ɲòbì.  
 F roast-eat-Nml C Àtìm roasted meat eat  
 'It is roasting and eating meat that Àtìm roasted and ate.'
- c. \* (ká) ɲòbì-kā àlī/àtì Àtìm sè lām ɲòbì.  
 F eat-Nml C Àtìm roasted meat eat  
 'It is eating that Àtìm roasted and ate.'
- d. (ká) lām ɲòbì-kā àlī/àtì Àtìm sè ɲòbì.  
 F meat eat-Nml C Àtìm roasted eat  
 'It is roasting and eating meat that Àtìm roasted and ate.'

The nominalizing suffix *-kā* appears only once, even when multiple verbs are focused and fronted. This suggests that the category fronted to [Spec, CP] in (6.77a) forms a constituent headed by #, whose structure is represented as follows.

(6.78) The Derivation of (6.77a)



The derivation proceeds in the same way as the non-SVC PCC illustrated above. Note that the ungrammaticality of clefting  $\sqrt{r2}$  alone in (6.77c) receives a structural account: it is an instance of excorporation out of  $\sqrt{r1}$ , which is banned, whatever one fundamental explanation for this might be.

As predicted from the structure, it is impossible to focus  $V_1$ , pied-piping the object while leaving  $V_2$ .<sup>24</sup>

<sup>24</sup>Harbour (to appear) proposes an analysis for the PCC in Haitian Creole in which PCC is derived from a prior low reduplication of the predicate with a subsequent focus movement of one of them to the focus position. This analysis cannot be applied to Bùlì, however. Predicate Clefting of SVC, if his analysis is correct, should be derived from low reduplication of SVC, but then the observed word order is undervivable.

(i) Bùlì:

- a. \* *Àtìm sè sè lām ɣòbì ɣòbì.*  
*Àtìm roasted roasted meat ate ate*  
 ‘Àtìm roasted and roasted meat and ate and ate it.’
- b. *Àtìm sè lām ɣòbì sè lām ɣòbì.*  
*Àtìm roasted meat ate roasted meat ate*  
 ‘Àtìm roasted and ate meat and roasted and ate meat.’
- c. (*ká*) *sē-ɣòbì-kā àlì/àtì Àtìm sè lām ɣòbì.*  
*F roast-eat-Nml C Àtìm roasted meat eat*  
 ‘It is roasting and eating that Àtìm roasted and ate meat.’
- d. (*ká*) *lām sē-ɣòbì-kā àlì/àtì Àtìm sè ɣòbì.*  
*F meat roast-eat-Nml C Àtìm roasted eat*  
 ‘It is roasting and eating that Àtìm roasted and ate meat.’

Likewise, VP-doubling is not allowed in Bùlì, either.

(6.1) Bùlì:

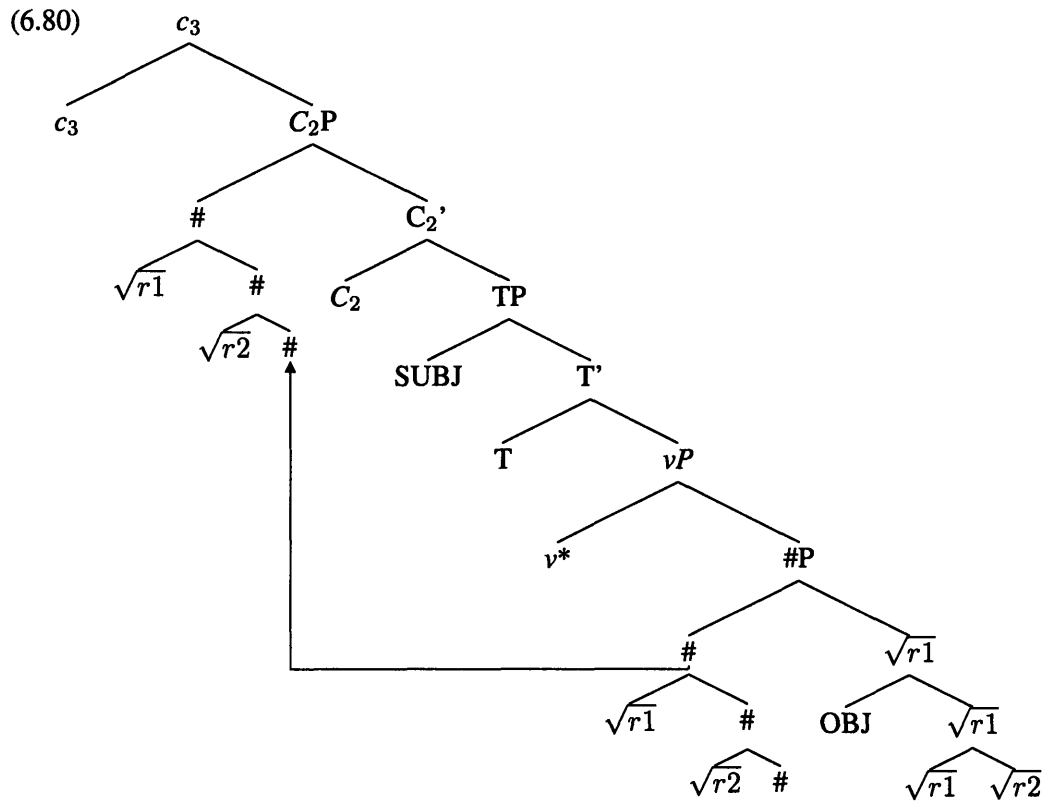
- a. (*ká*) *mángò-kǔ dē-kā àlì/àtì Àtìm \*(dè) dīem.*  
*F mango-D eat-Nml C Àtìm ate yesterday*  
 ‘It is eating the mango that Àtìm ate yesterday.’
- b. *Àtìm dè mánò-kǔ dè mánò-kǔ dīem.*  
*Àtìm ate mango-D yesterday ate mango-D*  
 ‘Àtìm ATE THE MANGO yesterday.’

(6.79) Bùlì:

\* (ká) lām sē-kā àlì/àtì Àtìm sè ɲòbì.  
 F meat roast--Nml C Àtìm roasted eat

‘It is roasting meat that Àtìm roasted and ate.’

I assume that when the SVC undergoes PCC,  $\sqrt{r1}$  overtly moves to #, while  $\sqrt{r2}$  covertly moves to #.<sup>25</sup> As proposed by Collins (2002),  $\sqrt{r2}$  tucks in under  $\sqrt{r1}$ . Focus-movement, then, targets this complex #- $\sqrt{r1}$ - $\sqrt{r2}$  and dislocates it to the edge of CP.



## 6.6 Some Comparative Notes

### 6.6.1 Yorùbá

PCC is widely observed in Kwa languages. Among those languages, Yòrùbá is one of the most well-studied languages. I examine similarities and dissimilarities of PCC between Bùlì and Yòrùbá. First,

<sup>25</sup>I have no good explanation at this point for why overt Multiple Verb Movement is blocked in Bùlì, but not in †Hoan and Ju|'hoan.

in contrast with Bùlì, Yòrùbá doubles the object in PCC, according to Déchaine (1993), Manfredi (1993), Cho and Nishiyama (2000) and Harbour (to appear).<sup>26</sup>

(6.81) Yòrùbá

a. **Rí-ra** ni Olú **ra** mótò.

Red-buy F Olu buy car

'It is buying that Olu bought a car.' (based on Kandybowicz 2003)

b. **Rí-ra** mótò ni Olú **ra** mótò.

Red-buy car F Olu buy car

'It is buying a car that Olu bought a car.' (based on Kandybowicz 2003)

What is surprising is the fact that the object is doubled when it is pied-piped with the predicate. This is impossible in Bùlì and other languages. The doubling, on the other hand, is obligatory in the PCC in Yòrùbá, when the object is pied-piped.

(6.82) Yòrùbá

\* **Rí-ra** mótò ni Olú **ra**.

Red-buy car F Olu buy

'It is buying a car that Olu bought a car.' (O. Adesola p.c.)

The doubling is affected, however, by the type of object. When the object is definite *mótò naa*, it cannot be pied-piped with the predicate.

(6.83) a. Yòrùbá

**Rí-ra** ni Olú **ra** mótò *naa/yen*.

Red-buy F Olu buy *cara* D/Dem

'It is buying that Olu bought the/that car.'

b. ?? **Rí-ra** mótò *naa/yen* ni Olú **ra** mótò *naa/yen*.

Red-buy car D/Dem F Olu buy car D/Dem

'It is buying the/that car that Olu bought the/that car.'

c. \* **Rí-ra** mótò *naa/yen* ni Olú **ra**.

Red-buy car D/Dem F Olu buy

'It is buying the/that car that Olu bought the/that car.'

It seems to be the case, then, that an indefinite object can undergo incorporation into the verb root, while a definite object cannot (Baker 1988; also see Mohanan 1995 for Hindi). Whenever the object incorporates into the root, doubling appears in PCC.

This conclusion is supported by the example with a pronominal object. In this case, again, there are two variants allowed: one with object doubling and one with object in-situ.

<sup>26</sup>Déchaine (1993) reports that some aspectual markers in Yòrùbá can be pied-piped with a predicate.

(6.84) Yòrùbá:

- a. **Rí-ra** ni Olú **ra a**.  
Red-buy F Olu buy it  
'It is buying that Olu bought it.'
- b. **Rí-ra a** ni Olú **ra a**.  
Red-buy it F Olu buy it  
'It is buying the/that car that Olu bought it.'
- c. \* **Rí-ra a** ni Olú **ra**.  
Red-buy it F Olu buy  
'It is buying it that Olu bought.'

The facts follow if (weak) pronouns can easily –obligatorily in many languages– shift/cliticize/incorporate and what is copied by movement is the category incorporating the weak pronouns.

Victor Manfredi (p.c.) has informed me that there is good evidence that the pied-piped object in Yòrùbá PCC receives Accusative Case but not Genitive Case, unlike Bùlì<sup>27</sup>.

The lexical low tone of the verb *rà* “buy”, being monosyllabic, regularly undergoes L-tone deletion before an Accusative object, which leads to a mid-tone (See Ajíbóyè et al. 2003 for detailed discussions of Yòrùbá gerund formation).<sup>28</sup>

(6.85) Yòrùbá:

- a. **rí-ra** mótò  
Red-buy car  
'buying a car'
- b. # **rí-rà a** mótò  
Red-buy GEN car  
'#buying of (=by) a car'

Genitive Case in Yòrùbá is not usually phonologically overt, if the following element is vowel-initial. It is audible, however, when the following element is consonant-initial (e.g. *mótò*). In that case, an epenthetic syllable is inserted bearing a mid tone, which copies the preceding segment. In the case at hand, the epenthetic syllable is *a*. As shown in (6.85b), however, the resulting gerund is pragmatically out because Genitive Case in Yòrùbá gerunds only has an agentive reading.

To illustrate a well-formed example of Genitive gerunds, let us consider below.

(6.86) Yòrùbá

- a. **gbí-gbon** mótò  
Red-shake car  
'shaking a car'

<sup>27</sup>I am very grateful to Victor Manfredi for his detailed explanation.

<sup>28</sup>A mid-tone in Yòrùbá is indicated by the absence of tone specification.

- b. **gbí-gbòn on mótò**  
 Red-shake GEN car  
 ‘shaking of (=by) a car’

In (6.86a), *mótò* is in Accusative Case, indicated by the low-tone deletion. On the other hand, in (6.86b), *mótò* is in Genitive Case, as evidenced by the presence of the epenthetic syllable and the absence of low-tone deletion. (6.86b) is grammatical with the interpretation that a car is the subject of shaking (for example, the car shakes because of the vibration of its engine).

Returning to the PCC, what is important to us is that gerunds used in the PCC in Yòrùbá are capable of assigning Accusative Case (Abney’s Acc-ing gerund, not Poss-ing gerund).

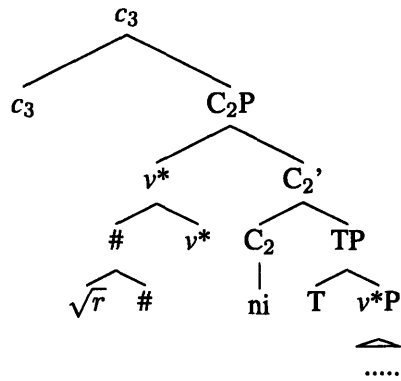
(6.87) Yòrùbá

**Rí-ra mótò ni Olú ra mótò.**  
 Red-buy car F Olu buy car

‘It is buying a car that Olu bought a car.’ (Kandybowicz 2003)

The availability of Accusative Case within the fronted nominalized predicate and the pied-piping asymmetry between indefinite and definite objects suggest that the PCC in Yòrùbá (i) targets a larger domain, namely,  $v^*-\#-\sqrt{r}$ , and (ii) does not allow phrasal pied-piping. Under this hypothesis, what looks like pied-piping is a result of ‘incorporation of the object into the  $\sqrt{r}$  category. What is moved is a series of heads  $-v^*-\#-\sqrt{r}$ , whose derivation is represented below.

(6.88) Yòrùbá PCC



### 6.6.2 Gungbe/Ewegbe/Fɔngbe

As Aboh (2004), Collins (1994), and Lefebvre (2002) observe, Gbe languages –Ewegbe, Gungbe, Fɔngbe, and Gengbe– allow PCC. I will illustrate PCC in Gungbe, discussed in detail in Aboh (2004), in terms of the theory that I have argued for in the preceding sections.

Gungbe has two strategies of PCC. One is used in imperfective constructions. In this strategy, the entire bracketed category is moved to the left edge of the clause.

## (6.89) Gungbe (Aboh 2004, 250)

- a. **Séná tò** [xwé ló gbâ].  
Sena Imp house Spec.D build-Nml  
'Sena is building the specific house.'
- b. [xwé ló gbâ] (%wè) **Séná tè**.  
house Spec.D F build-Nml F Sena Imp  
'It is building the specific house that Sena is building.'

Aboh (2004) argues that the floating low tone that appears at the right edge functions as a nominalizer in this language. Thus he proposes that the bracketed category in (6.89a) is NomP. Translating this core idea into our theory, the bracketed category is  $c_1P -nP$ . The shifting of the object to the left of the verb parallels Bùlì, as we have seen above. Notice that no copy of the predicate is left in-situ. Also, the pied-piping of the object is obligatory in this type of PCC.

## (6.90) Gungbe (Aboh 2004)

- a. **Séná dîn** mí tè.  
Sena search-Nml 1Pl. Imp  
'It is looking that we are looking for Sena.'
- b. \***dîn** mí tò **Séná dîn**.  
search 1Pl. Imp Sena search-Nml  
'It is looking that we are looking for Sena.'

This is expected given that what is moved is  $nP$  and "the stranded affix" on T is satisfied by the imperfective particle *tè*.<sup>29,30</sup>

## (6.91) a. Fongbe (Aboh 2004, 347)

**xwé gbá** (wè) Dòsà dè.  
house build F Dosa Imp  
'It is building a house that Dosa is building.'

- b. Ewegbe (Aboh 2004, 258)  
**nú dù m** Kòjò lè.  
thing eat Nml Kojo Imp  
'It is eating that Kojo is eating.'

## c. Gengbe (Aboh 2004, 258)

**axwé tù ò** Kòjò lè.  
house build Nml Kojo Imp  
'It is building a house that Kojo is building.'

<sup>29</sup>The imperfective particle changes from *tò* to *tè* in PCC. See Ndayragije (1993) and Aboh (2004) for discussions on this alternation in Fongbe and Gungbe, respectively.

<sup>30</sup>One difference between Bùlì PCC and this kind of PCC in Gungbe is that in the latter, the process is clause-bound (Aboh 2004, 261).

The other strategy is used perfective constructions. In this construction, only the predicate is focused and the object is left behind in-situ.

(6.92) Gungbe (Aboh 2004, 264)

- a. Sɛ́ná d̀ù      bléq̀ò ĺ̩.  
Sena eat-Perf. bread Spec.D  
'Sena ate the specific bread.'
- b. d̀ù (<sup>%</sup>wè) Sɛ́ná d̀ù      bléq̀ò ĺ̩.  
eat F      Sena eat-Perf. bread Spec.D  
'It is eating that Sena ate the specific bread.'

Given the fact that objects cannot be pied-piped and the realization of the in-situ copy of the fronted predicate is obligatory, it is safe to conclude that this is an instance of movement of lower categories. That a future particle cannot, unlike Russian, suppress the realization of the in-situ copy of the predicate indicates that what is moved is the heads ( $\#-\sqrt{\tau}$ ) lower than  $c_1$ .

(6.93) Gungbe (Aboh 2004, 270)

- d̀ù Sɛ́ná ná      \*(d̀ù) bléq̀ì ĺ̩.  
eat Sena FUT eat      bread Spec.D  
'It eating that Sena will eat the specific bread.'

It is not easy to find morphological evidence for nominalization for this type of PCC in Gbe languages. Collins (1993) and Ndayragije (1993) present one potential argument that the fronted predicates are indeed nominalized via a form of prosodic morphology in Ewe and Fongbe, which is only visible when the fronted verb is underlyingly bisyllabic. The point is illustrated below.

(6.94) Ewe: (Collins 1994)

- a. Mawu kafu-kafu  
god      praise-praise  
'praising God'
- b. ka(\*fu)      xe      Mana kafu      Kofi.  
pr-(\*aised) which Mana praised Kofi  
'The fact that Mana praised Kofi.'

(6.94a) indicates that the verb "praise" in Ewe is bisyllabic. Interestingly, when the bisyllabic predicated undergoes clefting, the fronted predicate must be mono-syllabic. Collins (1994) argues that it is possible to interpret this phenomenon as a form of nominalization via prosodic morphology. If this is on the right track, Ewe and Fongbe provide further confirmation for our claim that PCC involves nominalization of the fronted predicate at a phase level.



## 6.7 Concluding Remarks and Implications

In this chapter, I have argued that the syntax of the Predicate Cleft Construction in Bùlì follows from the proposed Supercategorical Theory of the CP/DP Symmetry. First, I have argued that the PCC in Bùlì targets the complement of  $v^*$ :  $\#-\sqrt{r}$ . I have shown that the morphological and syntactic evidence supports this generalization: the clefted predicate in the PCC in Bùlì is obligatorily nominalized and inflected for number and indefiniteness.  $\#-\sqrt{r}$ , without any category-determining head, is category-neutral and hence needs to be determined by a higher phase head  $c$ -commanding it at Transfer. Second, adopting and elaborating on the important insight of Marantz (1997), I have proposed a phase theory of category determination, whereby nominalization derivationally takes place in narrow syntax. I have argued that the categorial determination for the focused  $\#-\sqrt{r}$  element takes place at the CP phase level through the multiple selection by  $c_{\mathcal{G}}$ . I have proposed that this is made possible by the fact that Bùlì allows clausal determiners and  $c_{\mathcal{G}}$  corresponds to this  $-D_{\mathcal{G}}$ . Finally, the bi-locational realization of the root category in PCC follows from the interface condition that requires that  $v/n$  must not be stranded (see Abels 2001, Harbour 1999, to appear). This forces the copies of the heads ( $\#-\sqrt{r}$ ) in  $v^*$ 's complement to be realized as a verb.

An important implication of the proposed analysis is that a general theory is now available for what syntactic object can be a target of movement (Internal Merge). We do not need to specify which element is a legitimate object for movement. Rather, in principle, anything can be moved, as long as movement does not tamper with the category determination. This means that, in normal circumstances, moved elements contain a category determining head  $c$ , and hence phase categories are licit targets for movement. As we have seen, however, complements of phase categories can sometimes be moved. One such case is, I argued, PCC in Bùlì, where movement of  $\#-\sqrt{r}$  is observed and its categorial status is determined by the clausal determiner  $D_{\mathcal{G}}$ . This movement is legitimized at Transfer by realizing the *minimal* material in the complement of  $v^*$ : full copies of the heads,  $\#-\sqrt{r}$ . Without realizing the copies, the categorial determiner head  $v^*$  would be stranded and hence illicit syntactic objects would be sent to the interfaces.



## Chapter 7

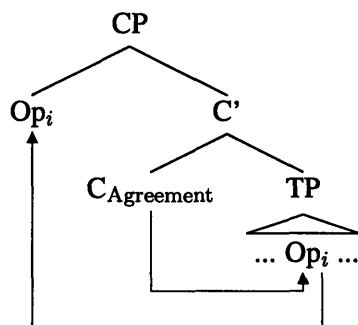
# Op-C Agreement

### 7.1 Introduction

In the preceding chapters, I have argued that *c* functions hand in hand with  $\tau$ .<sup>1</sup> In this chapter, we will look at cases where some properties traditionally attributed to T are manifested on C: EPP on C.

Bùlì, like many other languages of the world, shows different forms of the complementizer in the presence of an  $\bar{A}$ -dependency, represented as  $R(C, Op_i)$ .

(7.1) The Morphosyntax of  $\bar{A}$ -Dependency:  $R(C, Op)$



The effect of an  $\bar{A}$ -dependency on the C(omplementizer) system has attracted much attention in the past 20 years or so. Chung (1982, 1998) and Chung and Georgopoulos (1988), through a detailed investigation of Austronesian languages such as Chamorro and Palauan, argue that the

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<sup>1</sup>Special thanks go to George Akanlig-Pare for his invaluable help as my primary consultant, as a native speaker of Bùlì and as a linguist. I am grateful to Mark Baker, Cedric Boeckx, Ben Bruening, Noam Chomsky, Chris Collins, Yoshi Dobashi, Koji Fujita, Victor Manfredi, Lea Nash, David Pesetsky, Shogo Suzuki, and Shoichi Takahashi for comments and questions on the earlier version of this chapter. All errors are solely mine. A version of this chapter was presented at The 4th World Congress of African Linguistics (WOCAL4)/The 34th Annual Conference on African Linguistics (ACAL34) held at Rutgers University (June 17-22, 2003) and Generative Lyceum at Kwame Ninsin University (November 20, 2004). This work is partially supported by the Ken Hale Fellowship for Linguistic Fieldwork Research, MIT (2003-2004). All the Bùlì data, unless otherwise noted, comes from my sessions with George Akanlig-Pare at MIT (February-July, 2002) and my fieldwork in Ghana (March-June 2003, September, 2003-May, 2004).

effect comes in two varieties: *Wh-Agreement* and *Op(erator)-C Agreement*. Although the distinction is sometimes not so clear-cut and some languages exhibit both kinds of agreement at the same time, *Wh-Agreement* is the name for the phenomena where an  $\bar{A}$ -dependency affects the form of the predicate, whereas *Op-C Agreement* is the name for the phenomenon in which an  $\bar{A}$ -dependency affects the complementizer system (Chung 1998). In this chapter, I adopt these terms following Chung (1998).

Chung and Georgopoulos (1988) and Georgopoulos (1991a,b) show that Palauan exhibits so-called *Wh-agreement* (See Watanabe 1996a for a reinterpretation under an earlier minimalist framework). Other languages of this category include Mooré (Haïk et al. 1985), Chamorro (Chung 1998), and Hausa (Tuller 1985, 1986). The Op-C Agreement of *Wh*-extraction has been well documented in Chamorro (Chung 1982, 1998), Irish (McCloskey 1990, 2002), French (Kayne 1976, Rizzi 1990), West Flemish (Bennis and Haegeman 1984), Kikuyu (Clements 1984, Haïk 1990), Kinande (Schneider-Zioga 1995, Rizzi 1990), Bahasa Indonesia (Saddy 1991), Passamaquoddy (Bruening 2001), and Haitian Creole (Takahashi and Gracanin 2004) (See Clements 1984 and the references cited therein for more examples). There is a third kind of morphosyntactic realization of  $\bar{A}$ -dependencies noted by Watanabe (1996a) and Hiraiwa (2001b) and discussed at length in Chapter 3, which affects the Case and agreement on the subject, namely *Nominative-Genitive Conversion* (See also Collins 1993 for Ewe and Chung 1982, 1998, Watanabe 1996a for Chamorro). I have termed this *C-T Agreement*.

- (7.2) a. *Wh*-Agreement  
 b. Op-C Agreement  
 c. C-T Agreement

As we will show below, Bùlì exhibits Op-C Agreement, but *Wh*-Agreement and C-T Agreement are much less clear and presumably absent.<sup>2</sup>  $\bar{A}$ -dependencies involving the morphological change of C include Relativization, Factives, *Wh*-movement, and Focus movement. Topicalization, Yes-No questions, negation, and comparatives do not participate in the phenomenon. There are two central questions to ask here. First, why is Op-C Agreement in Bùlì limited to this range of syntactic contexts and not the others? Second, what is the exact mechanism that controls the Op-C Agreement in Bùlì?

The organization of this chapter is as follows. First, Section 7.2 establishes that what I call C in Bùlì is indeed C. Section 7.3 describes the intricacies of Op-C Agreement in Bùlì. Section 7.4 proposes a theory of Op-C Agreement that links EPP and locality to the morphosyntax of extraction. Section 7.5 discusses some implications and consequences. Section 7.6 extends the proposed theory to Haitian Creole. Finally Section 7.7 concludes the discussions.

<sup>2</sup>Bùlì shows a complicated tonal system of person agreement (Akanlig-Pare and Kenstowicz 2003b,c). Under  $\bar{A}$ -dependency, tonal person-agreement disappears. It remains to be determined whether this is a manifestation of *Wh*-agreement/Anti-agreement or not. See Richards (2001) for anti-agreement and references cited therein. The aspects of the tonal person-agreement are extremely complicated in Bùlì, and hence discussing them in this chapter goes far beyond the scope of our discussions. See Akanlig-Pare and Kenstowicz (2003b) for the basics of tonal person-agreement in Bùlì.

## 7.2 Complementizers *àlī*, *àtì* and *àyīn*

I begin by establishing that what I will call C(omplementizers) are really complementizers in Bùlì. I will show that there are three kinds of complementizers, *àlī*, *àtì*, and *àyīn* in Bùlì as illustrated in (7.3). (7.3a) and (7.3b) illustrate the phenomena of Op-C Agreement that we discuss in this chapter. In Op-C Agreement, the element that follows the dislocated Wh-element changes its form—between *àlī* and *àtì*, as shown in (7.3a) and (7.3b).<sup>3</sup> (7.3c) shows that Bùlì uses another form of complementizer *àyīn* for clausal complements to certain verbs.

### (7.3) Bùlì: Three Complementizers

#### a. Subject *Wh*-Questions

ká wàná àlī/\*àtì tà nā:b?  
 F who C have cow(Id)  
 ‘Who owns a cow?’

#### b. Non-Subject *Wh*-Questions

ká bwà àlī/\*àtì kpār<sup>w</sup>ā-wá tà?  
 F what C farmer-D have  
 ‘What does the farmer have?’

#### c. Complement Clause

Àtīm wē:nī àyīn Àmòak dà mángò-kú.  
 Àtīm said that Àmòak bought mango-D  
 ‘Àtīm said that Àmòak bought the mango.’

That the complementizer *àyīn* in (7.3c) is a complementizer seems uncontroversial, and, as in many other African languages, *àyīn* was originally a verb “say”. What looks more challenging initially is the status of *àlī/àtì*, the syntactic distribution of which is the main object of study of this chapter. As we will see in detail, *àlī/àtì* only appears under  $\bar{A}$ -dependencies. This fact itself strongly indicates that these elements are in one way or another bound to C. We would like to offer further evidence for their status as C, in the face of some alternative analytical possibilities.

*àlī/àtì* are (morphologically) homophonous with an NP coordinator (7.4a) and a sentential coordinator (7.4b), respectively.

### (7.4) Bùlì: Conjunctions

#### a. Àtīm àlī/\*àtì Àmòak jà:m délá.

Àtīm and Àmòak came here  
 ‘Àtīm and Àmòak came here’

#### b. Àtīm sè lām àtì/\*àlī Àmòak jòbì bǔ.

Àtīm roasted meat and Àmòak ate it  
 ‘Àtīm roasted meat and Àmòak ate it.’

<sup>3</sup>The initial vowel *a* of *ali* and *ati* can be omitted but in the following examples, I use the full forms.

One might wonder if these elements are actually attached internal to DP/NP, functioning as coordinators. In fact Manfredi (1993) argues that a coordinator is used as a relative pronoun in Kru/Kwa languages.<sup>4</sup> This possibility, however, is not tenable for Bùlì, given the fact that *àlì* and *àlì* in (7.4) are DP and CP/IP coordinators, respectively; in (7.3a) and (7.3b), however, *àlì* never coordinates DPs, nor does *àtì* coordinate CPs/IPs in (7.3b). Furthermore, it is equally significant to notice the difference in tone between *àlì* in  $\bar{A}$ -dependency and *àlì* in (7.4a); whereas in the former the second vowel has a mid tone, the latter has a low tone.

*àlì* also has a use as a postposition “against/with”, as shown in (7.5).

(7.5) Bùlì: Preposition

Wà-à bīsī àlì Bàwà.  
he-PRG talk with Bawa

‘He’s talking with Bawa.’

But again the tonal difference indicates that they should not be identified (at least directly). Also, there is another crucial difference; in (7.5), *àlì* precedes the noun, whereas in (7.3), *àlì* follows the noun.

The fact that *àlì/àtì* in  $\bar{A}$ -dependencies are C, not relative pronouns also seems uncontroversial, since, unlike “C-like” elements in Ewe (see Collins 1994), they do not pied-pipe any other element in Bùlì. In the Ewe examples in (7.6), the element *xe* pied-pipes the postposition *dzi* (7.6a), while *dzi* cannot be pied-piped with the head of the relative clause (7.6b).

(7.6) Ewe: Relativization and Pied-Piping (Collins 1994)

- a. Me fle kplɔ xe dzi Kofi titi.  
1Sg. bought table which on Kofi wiped  
‘I bought the table the top of which Kofi wiped.’
- b. \*Me fle kplɔ dzi xe Kofi titi.  
1Sg. bought table on which Kofi wiped  
‘I bought the table the top of which Kofi wiped.’

Bùlì shows a sharp contrast. As shown in (7.7b), the postposition *zùk* cannot come to the right of *àtì*; rather, it has to be pied-piped by the head of the relative clause as in (7.7c)

(7.7) Bùlì: Relativization and Pied-Piping

- a. Àtìm gwà gbòŋ-kú zùk.  
Àtìm slept roof-D on  
‘Àtìm slept on the roof.’

<sup>4</sup>Victor Manfredi (p.c.) informed me that in Yòrùbá, a so-called logophor 3Sg. pronoun is homophonous with a coordinator. In Ewe, Collins (1993) shows that what looks like C is in fact a relative pronoun and it is homophonous with a demonstrative (pronoun).

- b. \* gbòŋ-kū:y **àlī/àtì** zùk Àtìm gwà lǎ zùàgì.  
 roof C on Àtìm slept Dem is-big  
 ‘The roof on which Àtìm slept is big.’
- c. gbòŋ-kū:y zùk \***àlī/àtì** Àtìm gwà lǎ zùàgì.  
 roof on C Àtìm slept Dem is-big  
 ‘The roof on which Àtìm slept is big.’

Furthermore, if *àlī/àtì* are suffixes to the head noun, we would expect that in stacking RC, *àlī/àtì* appears only once. The prediction is incorrect, however. Either *àlī* or *àtì* is required for each clause as shown below.

(7.8) Bùlì: Stacking and *àlī/àtì*

- mángò-kū:y àtì Àm<sup>w</sup>ɔk dà dīem lá àtì Àtìm dè lǎ māsā.  
 mango-Rel C Àmòak bought yesterday Dem C Àtìm ate Dem good  
 ‘The mango that Àmòak bought yesterday that Àtìm ate was good.’

Finally, *àlī/àtì* precede all the other preverbal elements such as negation *àn* and the progressive auxiliary *bòròà*, which indicates that it is located in a fairly high position of the clause.

(7.9) Bùlì:

- a. nùrù-wā:y **àlī/\*àtì** àn s<sup>w</sup>a ná:mú lá kpī yá  
 man-Rel C NEG own cow-D Dem died Cfp  
 ‘The man that didn’t own the cow died.’
- b. \* nùrù-wā:y àn **àlī/àtì** s<sup>w</sup>a ná:mú lá kpī yá  
 man-Rel NEG C own cow-D Dem died Cfp  
 ‘The man that didn’t own the cow died.’

(7.10) Bùlì:

- a. nùrù-wā:y **àlī/\*àtì** bòròà dē mánɡò lá kpī yá  
 man-Rel C Prog. eat mango(Id) Dem died Cfp  
 ‘The man that was eating a mango died.’
- b. \* nùrù-wā:y bòròà **àlī/àtì** dē mánɡò lá kpī yá  
 man-Rel Prog. C eat mango(Id) Dem died Cfp  
 ‘The man that was eating a mango died.’

To conclude, all of these pieces of evidence indicate that *àlī/àtì* should be considered to be C(omplementizers), rather than elements attached to the preceding nouns.

I will assume, adopting Rizzi’s Left Periphery theory (Rizzi 1997), that *àlī/àtì* occupy the lower C<sub>2</sub> position (i.e. the “Fin” head position), although I will continue to gloss them as “C” just for convenience, unless the distinction is crucial. The strong motivation for this positioning comes from the fact that in embedded *Wh*-Questions, *àlī/àtì* follows the declarative complementizer *àyīn*, which occupies the C<sub>3</sub> (Force) head position, as shown in (7.12).

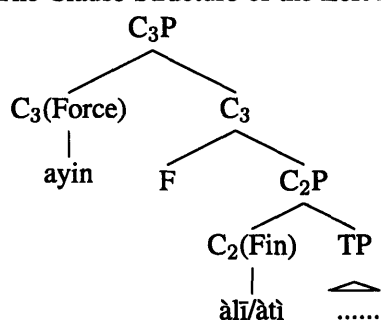
(7.11) Bùlì: Partial Non-Subject *Wh*-Questions

Àtìm wē:nī àyīn ká bwà àlī/àtì Àmòak s<sup>w</sup>à.  
 Àtìm said that F what C Àmòak owned

‘What did Àtìm say that Àmòak owned?’

‘Àtìm asked what Àmòak owned.’

## (7.12) The Clause Structure of the Left Periphery in Bùlì

7.3  $\bar{A}$ -Dependencies: Op-C Agreement and Asymmetries

This section sketches patterns of the morphosyntax of extraction in  $\bar{A}$ -dependencies (i.e. Relativization, Factive, *Wh*-Questions and Focus) in Bùlì. The locus of interest is the morphological change of the complementizer. Bùlì manifests special forms of the complementizer (*àlī/àtì*) under  $\bar{A}$ -dependencies, which are distinct from the complementizer used in declarative sentential complements (*àyīn*). In this section, a focus will be placed on revealing various (a)symmetries in the Op-C agreement between relativization and *Wh*/Focus constructions.

Relativization, Factives, *Wh*-Questions and Focus<sup>5</sup> constructions are all subject to island constraints in Bùlì (Ross 1967), and hence it is plausible to assume that they involve movement (See Chapters 5 and 6, Hiraiwa 2003d and Ferreira and Ko 2003 for examples).

## (7.13) Bùlì: Island Effects (Relative Clauses)

\* [Àtìm [àlì nē [nú-rú-wā:y [àlī da mǎngò-kū:y] (lá)]] lá] māsā.  
 Àtìm C saw man-Rel C bought mango-Rel Dem Dem delicious

‘The mango that Àmòak saw the man who bought is delicious.’

(7.14) Bùlì: Island Effects (*Wh*-Questions) (Ferreira and Ko 2003)

a. \*? ká wàná tì fə kàrim gbáŋ-ká tì wà mà̀yìsì lǎ?  
 F who C you read book-D C he wrote Dem

‘Who did you read the book that wrote?’

<sup>5</sup>In this chapter, I will use the terms *cleft* and *focus* interchangeably.



- b. \*? fə kàrìm gbáŋ-ká tì kǎ wàná mà̀yìsì lá?  
 you read book-D C F who wrote Dem  
 ‘Who did you read the book that wrote?’

*Wh*-extraction is optional in that *Wh*-in-situ and Focus-in-situ are both licit, although *Wh*-movement seems to be more frequently used. Resumptive pronouns are generally banned except for possessor extraction (Section 7.5.2) and long-distance subject extraction, in which resumption is required (Section 7.3.6). Finally, Op-C Agreement does not extend above or below  $\bar{A}$ -dependency domains (Chung and Georgopoulos 1988).

### 7.3.1 Relativization

Relativization in Bùlì comes in two varieties, In-situ Head-Internal Relative Clauses (In-situ HIRC) (7.15a) and Left-Headed Head-Internal Relative Clauses (Left-Headed HIRC) (7.15b) (See Chapter 5 for detailed description of Bùlì relativization). I call HIRC a relative clause whose head appears at the right of C. Likewise, Left-Headed HIRC is a relative clause whose head appears at the left of C.

In (7.15a), where the non-operator subject DP is extracted to [Spec, CP], *àlì* must be selected. This gives rise to In-situ HIRC, leaving the head noun in-situ. On the other hand, in (7.15b), where the non-subject relativized head noun is extracted, *àtì* must be used. (7.15c) shows that something must occupy [Spec, CP] and hence cannot be left empty.

#### (7.15) Bùlì: Non-Subject Relativization

- a. HIRC  
 Àtìm àlì/\*àtì dà mángò-kū:y lá  
 Àtìm C ate mango-Rel Dem  
 ‘the mango that Àtìm bought’
- b. Left-Headed HIRC  
 mángò-kū:y \*àlì/àtì Àtìm dà lá  
 mango-Rel C Àtìm bought Dem  
 ‘the mango that Àtìm bought’
- c. HIRC  
 \*àlì/\*àtì/\*∅ Àtìm dà mángò-kū:y lá  
 C Àtìm ate mango-Rel Dem  
 ‘the mango that Àtìm bought’

Compare non-subject relativization (7.15) with subject relativization (7.16). In (7.16a), the complementizer is *àlì* not *àtì*, contra non-subject HIRC (7.15a). There is no In-situ subject HIRC as shown in (7.16b); it is illicit to front a non-head element leaving the relativized subject in-situ. Finally, again, the complementizer is obligatory in relativization and cannot be the initial element within the clause (7.16c) (cf. Ewe (Collins 1994) and Georgian (Lea Nash fall 2002 lecture at MIT) for similar non-initial C constraints).

## (7.16) Bùlì Subject Relativization

## a. Left-Headed HIRC

nùrù-wā:y àlì/\*àtì dà mángò-kú lá  
 man-Rel C bought mango-D Dem  
 ‘the man who bought the mango’

## b. HIRC

\* mángò-kú àlì/àtì nùrù-wā:y dà lá  
 mango-D C man-Rel bought Dem  
 ‘the man who bought the mango’

## c. HIRC

\*àlì/\*atì/\*∅ nùrù-wā:y dà mángò-kú lá  
 C man-Rel bought mango-D Dem  
 ‘the man who bought the mango’

A gross generalization seems to be that C has to attract something local. Thus (7.16c) is ungrammatical because nothing is in [Spec, CP]. Likewise, (7.16b) is ungrammatical because the object has been moved over the closer subject (See Section 7.4 for full discussions).

Bùlì also allows relativization of predicates (See Chapter 6 for relevant discussions). In this case, the relativized predicate undergoes dislocation to the edge of CP and the complementizer changes to *àtì*.

## (7.17) Bùlì: Predicate Relativization

nāyī-kā:-y \*àlì/àtì Àtìm nàyì Àmòak lǎ àn nālā.  
 hit-NML.SG.-REL C Àtìm hit Àmòak DEM NEG good

‘The (way of) hitting of Àmòak by Àtìm is not good.’

## 7.3.2 The Factive Construction

The so-called Factive Construction is a construction where a full clause is nominalized and functions as an argument (Collins 1994; see also Chapter 5). The factive construction is closely related to HIRC in its syntactic form except that there is no relativized head. When the subject is extracted to the left of C, *àlì* appears, while the extraction of the object or the predicate results in *àtì*.

## (7.18) Bùlì: Factive Construction

## a. Subject

[Àtìm àlì/\*àtì dè mángò-kú lá] tè Àm<sup>w</sup>ok pò pièntùk.  
 Àtìm C ate mango-D Dem gave Àmòak stomach white

‘(The fact) that Àtìm ate the mango pleased Àmòak.’

## b. Object

[mángò-kú \*àl̄/àt̄i Àt̄im dè lá] t̄è Àm<sup>w</sup>ɔk pò piènt̄ik.  
 mango-D C Àt̄im ate Dem gave Àm<sup>w</sup>ɔk stomach white

‘(The fact) that Àt̄im ate the mango pleased Àm<sup>w</sup>ɔk.’

## c. Predicate

[dē-ká \*àl̄/àt̄i Àt̄im dè mángò-kú] lá t̄è Àm<sup>w</sup>ɔk pò piènt̄ik.  
 eat-NML C Àt̄im ate mango-D Dem gave Àm<sup>w</sup>ɔk stomach white

‘(The fact) that Àt̄im ate the mango pleased Àm<sup>w</sup>ɔk.’

d. [\*àl̄/\*àt̄i/\*∅ Àt̄im dè mángò-kú lá] t̄è Àm<sup>w</sup>ɔk pò piènt̄ik.  
 C Àt̄im ate mango-D Dem gave Àm<sup>w</sup>ɔk stomach white

‘(The fact) that Àt̄im ate the mango pleased Àm<sup>w</sup>ɔk.’

Thus the behavior of C alternation in the Factive exactly patterns with Relativization.<sup>6</sup> The following summarizes generalizations for Relativization and Factive.

## (7.19) Relativization and Factive

- àl̄* for subject extraction and *àt̄i* for non-subject extraction.
- [Spec, CP] must be filled.

7.3.3 *Wh*-Questions

Next, let us look at *Wh*-Questions: subject *Wh*-Questions (7.20) and non-subject *Wh*-Questions (7.21).<sup>7</sup>

(7.20) Bùl̄i: Subject *Wh*-Questions

- ká wàná àl̄/\*àt̄i tà nā:b?  
 F who C have cow(Id)  
 ‘Who owns a cow?’
- ká wàná \*(àl̄) tà nā:b?  
 F who C have cow(Id)  
 ‘Who owns a cow?’
- \*àl̄/\*àt̄i/\*∅ ká wàná tà nā:b?  
 C F who have cow(Id)  
 ‘Who owns a cow?’

<sup>6</sup>There seem to be semantic differences between the factive sentences in (7.18), depending on what is fronted. As expected, my informant told me that he finds a focus/emphasis effect on the element that is fronted. This contrasts with Kwa languages, whose factive constructions usually take the form of a predicate cleft but are semantically neutral. See Collins (1994) for discussions of Kwa factive constructions.

<sup>7</sup>See Ferreira and Ko (2003) for a preliminary description of questions in Bùl̄i.

(7.21) Bùlì: Non-Subject *Wh*-Questions

- a. ká bwà àlì/àtì kpār<sup>w</sup>ā-wá tà?  
F what C farmer-D have  
'What does the farmer have?'
- b. ká bwà \*(àlì/àtì) kpār<sup>w</sup>ā-wá tà?  
F what C farmer-D have  
'What does the farmer have?'
- c. \*àlì/\*àtì/∅ kpār<sup>w</sup>ā-wá tà ká bwà?  
C farmer-D have F what  
'What does the farmer have?'
- d. \*kpār<sup>w</sup>ā-wá àlì/àtì tà ká bwà?  
farmer-D C have F what  
'What does the farmer have?'

As (7.20) and (7.21) show, *Wh*-Questions contrast with relativization in two respects; first, the *àlì/àtì* alternation is free for non-subject *Wh*-Questions (7.21a), whereas only *àlì* is licit for subject *Wh*-Questions (7.20a). Second, as (7.20b) and (7.21b) show, C is obligatory when the *Wh*-phase is moved. On the other hand, *Wh*-in-situ is possible only in non-subject *Wh*-Questions and no overt complementizer is used, as shown in (7.21c). *Wh*-in-situ for subject *Wh*-phrases is illicit (7.20b) (See Section 7.5.4).

Another point worth noting here is that in *Wh*-in-situ, nothing can be attracted to [Spec, CP] in contrast with HIRC (cf. (7.15a)), as shown in (7.21d). Put differently, there is no *Wh*-counterpart of In-situ HIRC. This point will be shown to be important for our proposed theory of Op-C Agreement later in this chapter.<sup>8</sup>

## 7.3.4 Focus

The Focus construction patterns exactly like its *Wh*-Questions counterparts (see Chapter 6 for arguments that the syntax of *Wh*-Questions and Focus constructions in Bùlì are the same, suggesting that *Wh*-Questions are a kind of Focus construction: see also Rizzi 1997, Aboh 2004 among others).

## (7.22) Bùlì: Subject Focus

- a. ká kpār<sup>w</sup>ā-wá àlì/\*àtì tà nā:b  
F farmer-D C have cow(Id)  
'It is the farmer who owns a cow.'
- b. ká kpār<sup>w</sup>ā-wá \*(àlì) tà nā:b  
F farmer-D C have cow(Id)  
'It is the farmer who owns a cow.'

<sup>8</sup>One big difference between relativization and *Wh*-Questions/Focus is that in the former the particle *la* is required, which I gloss here as DEM. See Hiraiwa (2003d) and Chapters 5 & 6 for discussions of *la*.

- c. \* $\bar{a}l\bar{i}/\bar{a}t\bar{i}/\emptyset$  ká kpār<sup>w</sup>ā-wá tà nā:b  
 C F farmer-D have cow(Id)  
 'It is the farmer who owns a cow.'

## (7.23) Bùlì Non-Subject Focus

- a. ká nā:mú  $\bar{a}l\bar{i}/\bar{a}t\bar{i}$  kpār<sup>w</sup>ā-wá tà  
 F cow-D C farmer-D have  
 'It is the cow that the farmer owns.'
- b. ká nā:mú \*( $\bar{a}l\bar{i}/\bar{a}t\bar{i}$ ) kpār<sup>w</sup>ā-wá tà  
 F cow C farmer-D have  
 'It is the cow that the farmer owns.'
- c. \* $\bar{a}l\bar{i}/\bar{a}t\bar{i}/\emptyset$  kpār<sup>w</sup>ā-wá tà ká nā:mú  
 C farmer-D have F cow  
 'It is the cow that the farmer owns.'
- d. \*kpār<sup>w</sup>ā-wá  $\bar{a}l\bar{i}/\bar{a}t\bar{i}$  tà ká nā:mú  
 farmer-D C have F cow  
 'It is the cow that the farmer owns.'

As shown in (7.22) and (7.23), the focused element appears in front of C. C is absent when the focused element stays in-situ (7.23c). Focus-in-situ is restricted to non-subjects just like non-subject *Wh*-in-situ (7.22b).  $\bar{a}l\bar{i}$  is used for subject extraction (7.22a), whereas  $\bar{a}t\bar{i}$  or  $\bar{a}l\bar{i}$  can be selected for non-subject extraction (7.23a). Again, there is no counterpart of HIRC (7.23d) and C is required with moved Focus constructions (see (7.22c) and (7.23c)).<sup>9</sup>

As discussed at length in Chapter 6, Bùlì has predicate focus constructions (Predicate Cleft Constructions (PCC)), which also show free alternation between  $\bar{a}l\bar{i}$  and  $\bar{a}t\bar{i}$ .

## (7.24) Bùlì: Predicate Cleft

- ká dē-kā  $\bar{a}l\bar{i}/\bar{a}t\bar{i}$  Àtìm dè mángò-kǔ diēm.  
 F eat-NML C Àtìm ate mango-D yesterday  
 'It is eating that Àtìm ate the mango yesterday.'

Focus constructions share another common property with *Wh*-Questions: operator subjects must be always extracted and hence operator subjects in-situ are generally prohibited. This will be discussed in Section 7.5.4.<sup>10</sup>

<sup>9</sup>I gloss *ká* as a focus particle (F). It is interesting to note that *ka* in Bùlì, like many other languages of West Africa (e.g. Puular, Yòrùbá) and others (e.g. Chinese), is homophonous with a copula (see Guerzoni and Ishihara (2001), Yusuf (1990), Hiraiwa and Ishihara (2002)). There are good reasons, however, to think that *ká* in focus constructions in Bùlì is a focus marker rather than a copula (e.g. in the form '(it) is XP that ...'); first *ká* in focus-movement can be dropped, while the copula *ká* cannot be omitted. Second, the grammaticality of Focus-in-situ (7.23c) shows that it is not functioning as a copula in Focus constructions. And finally, *ká* in cleft is optional, whereas it cannot be omitted in copula constructions. See Chapter 6 for relevant discussion.

<sup>10</sup>As far as I know, there is no language that prohibits non-subject *Wh*-in-situ while allowing subject *Wh*-in-situ. Although interesting, I leave the issue for future research.

The C alternation patterns in *Wh*/Focus constructions are summarized as follows.

(7.25) *Wh*/Focus

- a. *àlì* for subject extraction and *àlì/àtì* for non-subject extraction.
- b. [Spec, CP] can only be filled by an operator element.

A number of researchers have noted that Relativization, *Wh*-Questions, and Focus constructions show convergent properties (forming a uniform class of  $\bar{A}$ -dependencies; Schachter 1973, Chomsky 1977, Chung 1982, 1998, Clements 1984). Bùlì is no exception in this respect and all of these constructions utilize the same two kinds of complementizers (*àlì/àtì*). But the uniformity is not complete in that Relativization/Factives contrast with *Wh*/Focus in terms of the patterns of selection of *àlì/àtì*.

### 7.3.5 Topicalization

Topicalization in Bùlì does not participate in *Op-C Agreement*. This is illustrated in (7.26). Note that *àlì/àtì* cannot be used in topicalization.<sup>11</sup>

(7.26) Bùlì: Topicalization

- a. **mángò-kǔ**, Àtìm dà **kù/??** kámá.  
mango-D Àtìm bought it Cfp  
'The mango, Àtìm bought it.'
- b. **mángò-kǔ**, (**\*àlì/\*àtì**) Àtìm dà **kù/??** kámá.  
mango-D C Àtìm bought it Cfp  
'The mango, Àtìm bought it.'

Topicalization is cross-linguistically not uniform with respect to  $\bar{A}$ -dependencies; topicalization in Ewe and Kikuyu, for example, do not participate in “*Wh*-agreement” (see Collins 1993 and Clements 1984, respectively). Topicalization in Chamorro does not show any morphosyntax of extraction, either (Chung 1998). In the case of Irish, it is not easy to determine what counts as topicalization in the first place (Jim McCloskey p.c.). On the other hand, Palauan has been reported to exhibit *Wh*-Agreement in topicalization (Georgopoulos 1985, 1991a,b). Topicalization in Icelandic patterns with other  $\bar{A}$ -constructions such as Relativization and *Wh*-Questions in terms of agreement (see Holmberg and Hróarsdóttir 2003 and Chapter 2).<sup>12</sup>

As the otherwise illicit use of object resumption indicates, topicalization in Bùlì is more like Left-dislocation (Cinque 1990) rather than topicalization movement. Thus it is not surprising to see that Bùlì topicalization does not trigger *àlì/àtì*.<sup>13</sup>

<sup>11</sup>The function of the sentence-final particle *kámá* is hard to explicate, but it is one of the “clausal-determiner”-like elements that expresses factivity of the proposition.

<sup>12</sup>Another structure that uses *àlì/àtì* is subordinate clauses (e.g. *if*, *when*, *before/after* clauses). See Richards (2003) for preliminary discussion for the former constructions. I will briefly mention these examples later in this chapter.

<sup>13</sup>Under the Split CP architecture, this is even more natural because a topicalized element is not in [Spec, FocP] but in [Spec, TopP].

### 7.3.6 Long-distance $\bar{A}$ -Dependencies

Among long-distance  $\bar{A}$ -dependencies, Relativization/Factives and *Wh*/Focus constructions exhibit various intriguing asymmetries again. First, the extraction of an embedded subject head noun or an embedded non-subject head noun in long-distance Left-Headed HIRC selects exclusively *àti*.

(7.27) Bùli: Long-distance Non-Subject Relativization

a. Left-Headed HIRC

ná:-būy \*àli/àti Àtìm wē:nī àyīn Àmòak s<sup>w</sup>à (\*kà) lá kpī.  
cow-Rel C Àtìm say that Àmòak own (it) Dem died

‘The cow that Àtìm said that Àmòak owns died.’

b. Left-Headed HIRC

ná:-būy \*àli/àti Àtìm wē:nī àyīn (\*àli/\*àti) Àmòak (\*àli/\*àti) s<sup>w</sup>à lá kpī.  
cow-Rel C Àtìm say that (C) Àmòak (C) own Dem died

‘The cow that Àtìm said that Àmòak owns died’

(7.28) Bùli: Long-distance Subject Relativization

a. Left-Headed HIRC

nùrù-wā:y \*àli/àti Àtìm wē:nī àyīn \*(wà) s<sup>w</sup>a ná:mú lá kpī yá  
man-Rel C Àtìm say that he own cow-D Dem died Cfp

‘The man that Àtìm said that owns the cow died’

b. Left-Headed HIRC

nùrù-wā:y \*àli/àti Àtìm wē:nī àyīn (\*àli/\*àti) wà (\*àli/\*àti) s<sup>w</sup>a ná:mú lá kpī  
man-Rel C Àtìm say that (C) he (C) own cow-D Dem died  
yá  
Cfp

‘The man that Àtìm said that owns the cow died.’

As (7.27) and (7.28) show, only *àti* is licit in all types of long-distance relativization. There are several important points worth noting here. First, the resumptive pronoun is required for long-distance subject relativization, but it is illicit with long-distance non-subject relativization. It should be noted that Georgopoulos (1985) and Chung and Georgopoulos (1988) observe that Palauan exhibits *Wh*-agreement even with resumptive pronouns, whereas there are languages such as Kikuyu (Clements 1984), in which resumption suppresses *Wh*-agreement. Resumptive pronouns in Bùli cannot remedy Complex NP island violations. Note that in the following example, the relativization of the embedded relative clause subject is illicit irrespective of obligatory resumption.<sup>14</sup>

<sup>14</sup>The placement of the resumptive pronoun is at least higher than its original position (i.e. [Spec, v\*P]), given that it can precede negation and other preverbal adverbs. However, it cannot be in the specifier of the complementizer *àyīn* since it always appears below it.

(i) Buli:

## (7.29) No Island Repair by Resumption in Bùlì

\* nùrù-wā:y<sub>i</sub> àlì/àtì Àtìm dè [mángò-kū:y àtì wà<sub>i</sub> dà lǎ].  
 man-Rel C Àtìm ate mango-Rel C he bought Dem

‘The man who Àtìm ate the mango that he bought.’

Second, *àlì/àtì* selection for long-distance subject relativization contrasts with local subject relativization in that the former selects *àtì* and the latter *àlì*. Third, the Op-C Agreement in Bùlì is restricted to the highest CP-domain over which an  $\bar{A}$ -dependency is formed. Thus, as shown in (7.27b) and (7.28b), neither *àtì* nor *àlì* appears in the embedded clause through which the operator passes. Thus, Op-C Agreement in Bùlì is not realized successive-cyclically, even though the Op is assumed to be moved successive-cyclically (See Chomsky 1977).

Another striking fact is that *àlì/àtì* selection in long-distance relativization contrasts with that in long-distance *Wh/Focus* constructions; in long-distance *Wh/Focus*, *àlì* and *àtì* can alternate irrespective of whether it is long-distance subject extraction or long-distance non-subject extraction, thus patterning with local non-subject *Wh/Focus* extraction. The second examples of each pair show that there is no overt reflex of successive-cyclic movement in Bùlì (contra languages like Irish, Chamorro, and Palauan).

(7.30) Bùlì: Long-distance Non-Subject *Wh*-Questions

a. ká bwà àlì/àtì Àtìm wē:nī àyīn Àmòak s<sup>w</sup>à (\*ka)?  
 F what C Àtìm say that Àmòak own (it)

‘What did Àtìm say that Àmòak owned?’

b. ká bwà àlì/àtì Àtìm wē:nī àyīn (\*àlì/\*àtì) Àmòak (\*àlì/\*àtì) s<sup>w</sup>à?  
 F what C Àtìm say that (C) Àmòak (C) own

‘What did Àtìm say that Àmòak owned?’

(7.31) Bùlì: Long-distance Subject *Wh*-Questions

a. ká wàná àlì/àtì Àtìm wē:nī àyīn \*(wà) s<sup>w</sup>a ná:mú?  
 F who C Àtìm say that he own cow-D

‘Who did Àtìm say that (he) owns the cow?’

---

a. nùrù-wā:y \*àlì/àtì Àtìm wē:nī àyīn wà àn s<sup>w</sup>a ná:mú lá kpī yá  
 man-Rel C Àtìm say that he NEG own cow-D Dem died Cfp

‘The man that Àtìm said that didn’t own the cow died.’

b. \* nùrù-wā:y \*àlì/àtì Àtìm wē:nī àyīn àn wà s<sup>w</sup>a ná:mú lá kpī yá  
 man-Rel C Àtìm say that NEG he own cow-D Dem died Cfp

‘The man that Àtìm said that didn’t own the cow died.’

c. \* nùrù-wā:y \*àlì/àtì Àtìm wē:nī wà àyīn àn s<sup>w</sup>a ná:mú lá kpī yá  
 man-Rel C Àtìm say he that NEG own cow-D Dem died Cfp

‘The man that Àtìm said that didn’t own the cow died.’



- b. ká wàná àlɪ/àtì Àtìm wē:nī àyīn (\*àlɪ/\*àtì) wà (\*àlɪ/\*àtì) s<sup>w</sup>a ná:mú?  
 F who C Àtìm say that (C) he (C) own cow-D  
 ‘Who did Àtìm say that (he) owns the cow?’

## (7.32) Bùlì: Long-distance Non-Subject Focus

- a. ká ná:-mū àlɪ/àtì Àtìm wē:nī àyīn Àmòak s<sup>w</sup>à (\*ka).  
 F cow-D C Àtìm say that Àmòak own  
 ‘It is the cow that Àtìm say that Àmòak owned?’
- b. ká ná:-mū àlɪ/àtì Àtìm wē:nī àyīn (\*àlɪ/\*àtì) Àmòak (\*àlɪ/\*àtì) s<sup>w</sup>à.  
 F cow-D C Àtìm say that (C) Àmòak (C) own  
 ‘It is the cow that Àtìm say that Àmòak owned?’

## (7.33) Bùlì: Long-distance Subject Focus

- a. ká nùrù-wā àlɪ/àtì Àtìm wē:nī àyīn \*(wà) s<sup>w</sup>a ná:mú  
 F man-D C Àtìm say that he own cow-D  
 ‘It is the man that Àtìm said that he owned the cow.’
- b. ká nùrù-wā àlɪ/àtì Àtìm wē:nī àyīn (\*àlɪ/\*àtì) wà (\*àlɪ/\*àtì) s<sup>w</sup>a ná:mú  
 F man-def C Àtìm say that (C) he (C) own cow-D  
 ‘It is the man that Àtìm said that he owned the cow.’

Bùlì allows partial movement; in long-distance *Wh*/Focus constructions (7.34) and (7.35), *Wh*/Focus elements can optionally stay in the lower [Spec, CP] (See Ferreira and Ko 2003).<sup>15</sup>

## (7.34) Bùlì:

- a. Partial Non-Subject *Wh*-Questions  
 Àtìm wē:nī àyīn ká bwà àlɪ/àtì Àmòak s<sup>w</sup>à.  
 Àtìm said that F what C Àmòak owned

<sup>15</sup>Another thing that is interesting but I cannot account for in this chapter is that long-distance Left-Headed HIRC is prohibited in Bùlì. Thus the examples in (i) sound quite degraded to my informant (See Chapter 5). My informant rejected the examples (i) as outright ungrammatical at first, but after careful reflection, he understood what it purported to mean. But still he found it to be degraded because the head noun is too far away. I am not sure if the unacceptability of the sentence is due to grammatical factors or to processing difficulty at this moment.

- (i) a. Long-distance Non-Subject Relativization (HIRC)  
 \*? Àtìm [àlɪ/àtì] wē:nī àyīn Àmòak s<sup>w</sup>à ná:-būy lá kpī.  
 Àtìm C say that Àmòak own cow-D Dem died  
 ‘The cow that Àtìm said that Àmòak owns died.’
- b. Long-distance Subject Relativization (HIRC)  
 \*? Àtìm àlɪ/àtì wē:nī àyīn nùrù-wā:y s<sup>w</sup>a ná:mú là kpī yá  
 Àtìm C say that man-Rel own cow-D Dem died Cfp  
 ‘The man that Àtìm said that owns the cow died.’

‘What did Àtìm say that Àm̀̀ak owned?’

‘Àtìm asked what Àm̀̀ak owned.’

b. Partial Subject *Wh*-Questions

Àtìm wē:nī àyīn ká wà̀̀nà àlī/\*àtì s<sup>w</sup>a ná:mú  
Àtìm said that F who C owned cow-D

‘Who did Àtìm say that (he) owns the cow?’

‘Àtìm asked who owned the cow.’

(7.35) B̀̀l̀̀:

a. Partial Non-Subject Focus

Àtìm wē:nī àyīn ká ná:-mū àlī/àtì Àm̀̀ak s<sup>w</sup>à.  
Àtìm said that F cow-D C Àm̀̀ak owned

‘It is the cow that Àtìm said that Àm̀̀ak owned.’

‘Àtìm said that it is the cow that Àm̀̀ak owned.’

b. Partial Subject Focus

Àtìm wē:nī àyīn ká ǹ̀r̀̀wā àlī/\*àtì s<sup>w</sup>a ná:mú  
Àtìm said that F man-D C owned cow-D

‘It is the man that Àtìm said that he owned the cow.’

‘Àtìm said that it is the man that owned the cow.’

### 7.3.7 Summary One

(7.36) summarizes the patterns of Op-C Agreement in B̀̀l̀̀,

(7.36) Patterns of Op-C Agreement (an informal description)

- àlī* for local subject extraction in all constructions; *àtì* for non-subject extraction in relativization; *àlī/àtì* for non-subject extraction in *Wh*/Focus constructions.
- Non-subject in-situ *Wh*/Focus is allowed in *Wh*/Focus constructions, whereas subject in-situ *Wh*/Focus is disallowed;
- In non-subject relativization, in addition to Left-Headed HIRC, non-Op subjects can be fronted in front of C, leaving the head noun in-situ (i.e. HIRC), whereas such a strategy is not allowed for non-subject *Wh*/Focus constructions.
- No overt *àlī/àtì* unless something is moved to [Spec, CP]; Overt C is required when something is moved to [Spec, CP].

(7.37) Relativization/Factives

	C
Local Subject Extraction	<i>àlī</i>
Local Object Extraction	<i>àtì</i>
Long-Distance Extraction	<i>àtì</i>
Otherwise	∅

(7.38) *Wh/Focus*

	C
Local Subject Extraction	$\bar{a}l\bar{i}$
Local Object Extraction	$\bar{a}l\bar{i}/\bar{a}t\bar{i}$
Long-Distance Extraction	$\bar{a}l\bar{i}/\bar{a}t\bar{i}$
Otherwise	$\emptyset$

There are four intriguing asymmetries to be noted. First, we saw that the form of the complementizer is conditioned by whether the extracted element is a local subject for the C or not. Second, relativization and *Wh/Focus* exhibit further asymmetries in the manifestation of C. Third, Relativization/Factives and *Wh/Focus* contrast with respect to whether a non-Op element (i.e. local subject) can be moved to [Spec, CP]. Finally, the emergence of the complementizer is conditioned by whether its specifier is filled or not.<sup>16</sup>

<sup>16</sup>The fact that *Wh/Focus* constructions do not have bi-clausal “cleft” structures is also supported by the absence of presupposition, typically observed in English, as in below.

- (i) English:  
 a. Who is it that John hit?  
 b. # Nobody.

The  $\bar{a}l\bar{i}/\bar{a}t\bar{i}$  alternation does not seem to correlate with the presence/absence of *ká*. Also, there seems to be no presupposition, which should be present if it is a bi-clausal cleft sentence.

- (ii) a. *ká wàná àl̄ Àt̄m nàɣi?*  
 F who C Àt̄m hit  
 ‘Who did Àt̄m hit?’  
 b. *wā:ywā:y.*  
 Anyone.  
 ‘No one.’
- (iii) a. *ká wàná àt̄ Àt̄m nàɣi?*  
 F who C Àt̄m hit  
 ‘Who did Àt̄m hit?’  
 b. *wā:ywā:y.*  
 Anyone.  
 ‘No one.’
- (iv) a. *wàná àl̄ Àt̄m nàɣi?*  
 who C Àt̄m hit  
 ‘Who did Àt̄m hit?’  
 b. *wā:ywā:y.*  
 Anyone  
 ‘None’
- (v) a. *wàná àt̄ Àt̄m nàɣi?*  
 who C Àt̄m hit  
 ‘Who did Àt̄m hit?’

## (7.39) Typology of Op-C Agreement and Successive-Cyclic Movement

	Highest Clause	Lowest Clause	Successive-Cyclic
Op-C Agreement	Bùlì	Haitian Creole	Irish

## 7.4 EPP and Locality

In the remainder of the chapter, I will propose a theory of the morphosyntax of  $\bar{A}$ -dependencies in Bùlì, couched in the framework of the Minimalist Program (Chomsky 2000, 2001, 2004a, in press). I propose that C in Bùlì comes in two varieties with respect to the EPP (*Extended Projection Principle*) (Chomsky 1981, Chomsky 2001, 2004a) and that an interplay of this parametrization and locality provide a unified account for the morphosyntactic patterns of extraction and the patterns of movement in  $\bar{A}$ -dependencies in Bùlì.

### 7.4.1 Four Hypotheses

The questions to be answered are as follows:

## (7.40) Questions:

- What determines the choice of *àlì* or *àtì* in Op-C Agreement in Bùlì?
- What gives rise to the apparent asymmetries between Relativization/Factives and *Wh*-Questions/Focus in Bùlì?
- Are the asymmetries just accidental, or the consequence of a single principle?

Before going into the details of our proposal, let us take some moment to consider potential alternatives and their problems. There are at least three possible hypotheses that occur to one's mind.

## (7.41) Three Hypotheses

- The form of C is sensitive to the grammatical function of the element moved to [Spec, CP]. (Chung and Georgopoulos 1988, Chung 1998)
- The form of C is sensitive to the Case of the element moved to [Spec, CP]
- The form of C is sensitive to  $\phi$ -agreement on C (Rizzi 1990).

At a first sight, as (7.41a) suggests, one might think that *àlì* is the subject extraction marker and *àtì* is the non-subject extraction marker and hence the morphosyntax of Op-C Agreement in Bùlì is determined by the grammatical function of the extracted element. This is the position that Chung and Georgopoulos (1988) adopt for Chamorro and Palauan.

- 
- wā:ywā:y.*  
Anyone  
'No one.'

Also, factive clauses in Bùlì can take *ká*. This contrasts with *se* in Haitian Creole, where *se* cannot appear in Factive constructions. This indicates that *se* in Haitian Creole is more like a copular whereas *ká* in Bùlì is now more like a focus particle.

(7.42) *Wh*-Agreement (Chung and Georgopoulos 1988)

A verb agrees in grammatical function with a constituent that is dependent on it and contains a gap.

This mechanism seems to work in local relativization in Bùli;  $\bar{\lambda}l\bar{i}$  is used for subject extraction and  $\bar{\lambda}t\bar{i}$  for non-subject extraction. In fact this is reminiscent of *que* relatives in French discussed in Kayne (1976). This hypothesis, however, does not make correct predictions, as we saw in the previous section: in long-distance relativization, the extracted embedded subject, despite its subjecthood, realizes  $\bar{\lambda}t\bar{i}$ . Furthermore, we know that in *Wh*-Questions and Focus,  $\bar{\lambda}l\bar{i}$  and  $\bar{\lambda}t\bar{i}$  freely alternate for non-subject extraction. Finally, it is conceptually problematic if minimalist theorizing is on the right track that grammatical functions are not primitives that a theory can make reference to, but rather secondary notions derived from phrase structure (contra Relational Grammar and LFG; Chung and Georgopoulos 1988).<sup>17</sup>

What about the second hypothesis (7.41b)? This is empirically untenable exactly for the same reasons as (7.41a); in long-distance relativization, the embedded subject requires  $\bar{\lambda}t\bar{i}$ , not  $\bar{\lambda}l\bar{i}$ , even though its Case is nominative, and  $\bar{\lambda}l\bar{i}/\bar{\lambda}t\bar{i}$  selection is free for non-subject extraction in *Wh*/Focus, even though the case for the non-subject *Wh*-phrase is accusative. Watanabe (1996a) proposes a theory that links T's Case and C, explaining the asymmetry between local subject extraction and the rest in Palauan. Although the fundamental idea that Case is a property of the C-T relation has attracted much support (Collins 1993, Hiraiwa 2001b, Pesetsky and Torrego 2001, Chomsky 2004a and See Chapter 3), Watanabe's account does not extend to Bùli, and, in particular, to the patterns of *Wh*/Focus, where  $\bar{\lambda}l\bar{i}/\bar{\lambda}t\bar{i}$  freely alternate.

Finally, let us consider the third hypothesis (7.41c) that the morphosyntax of C is sensitive to  $\phi$ -agreement on C. The problem is that it is not easy to find morphological evidence for the involvement of  $\phi$ -features in Bùli. Although it may be possible to develop a theory based on the special assumption that  $\phi$ -agreement occurs on C, I will not seek this possibility here.<sup>18</sup>

In this chapter, I propose the fourth hypothesis (7.43) and demonstrate how it works for the Bùli syntactic system.

## (7.43) The form of C is sensitive to locality.

**7.4.2 EPP and Locality**

First, we must be more explicit about what locality is imposed on in (7.41c). I propose that the locus of parametrization is C, where the EPP feature has two parametric choices: It functions as an independent probe feature or it lives parasitically on another feature.

<sup>17</sup>In this chapter, I use the terminology 'subjects' and 'objects'. But note that nothing hinges on the grammatical functions in a real sense. They are used just for convenience and should be understood as nothing but 'local matching element' for probe  $v^*$  or T.

<sup>18</sup>See Takahashi and Gracanin (2004) for an attempt to explain the distribution of *ki* in Haitian Creole from a different perspective. See Section 7.6.

## (7.44) Parametrization of C

	Features on C
Relativization/Factives	C <sub>[EPP,Op]</sub>
Wh/Focus	C <sub>[Op-EPP]</sub>

(7.44) states that both types of C have EPP. Traditionally, EPP has been attributed to T, but I propose that EPP extends to C in Bùli. The parameter, then, is concerned with whether EPP is contingent on the other probe Op features or not (See Collins 1997 for EPP as an independent feature). In Relativization/Factive, EPP is split from the Op-feature and hence acts as an independent probe feature. In Wh/Focus, on the other hand, EPP is “tied up” with the Op-feature and hence cannot probe on its own. As we will see in detail in the remainder of this chapter, the parametrization neatly explains the patterns of movement and C: namely, what kind of elements can move to [Spec, CP] and under what condition an overt C appears.<sup>19,20</sup>

The remaining question is the mechanism that determines the choice between *àlì* and *àtì*. Note that the above parametrization does not directly explain which C appears when. Therefore, there has to be some kind of algorithm that controls the morphological realization of C. I propose a mechanism of locality evaluation, building on the insight of McCloskey (2002)

McCloskey (2002) proposes a theory of the morphosyntax of the complementizer in Irish.

## (7.45) Irish Op-C Agreement (McCloskey 2002, 203)

- a. C which bears both the Op-feature and the EPP-feature is realized as *aL*.
- b. C which bears only the EPP-feature is realized *aN*.
- c. C which bears neither the Op-feature nor the EPP-feature is realized as *go*.

## (7.46) Irish:

- a. an ghirseach **a** ghoid na síogaí  
D girl *aL* stole D fairies  
'the girl that the fairies stole away'
- b. an ghirseach **a-r** ghoid na síogaí í.  
D girl *aN*-[Pst] stole D fairies her  
'the girl that the fairies stole away'
- c. Creidim **gu-r** inis sé bréag.  
1Sg.-believe *go*-[Pst] tell 3sg. lie  
'I believe that he told a lie.'

<sup>19</sup>We need to answer an ultimate question of why such a split is observed. The descriptive generalization seems to be as follows:

- (i) Complementizers for relativization and Wh/Focus are different cross-linguistically (Rizzi 1990, Kayne 1994)

I leave an explanation open for future research.

<sup>20</sup>Hiraiwa (2002a) proposes a similar parametrization *The EPP/Agree Parameter* about whether EPP is contingent on Agree or not for Scandinavian languages and argues that various parametric differences between Insular and Mainland Scandinavian languages follow from the parametrization.

I will adopt his fundamental idea that the morphophonological reflex of an  $\bar{A}$ -dependency is determined by properties of C: the features involved in C. Based on the parametrization in (7.44), I propose (7.47) as a theory of Op-C Agreement in Bùlì.

- (7.47) The Op-C Agreement Algorithm in Bùlì
- a. C is realized as  $\bar{\lambda}l\bar{i}$  if C's EPP is satisfied by the closest category.
  - b. C is realized as  $\bar{\lambda}t\bar{i}$  if C's EPP is satisfied by a non-local category.
  - c. C is realized as  $\emptyset$  if C's EPP is satisfied by a "null" element.

The bottom line of the proposal is that the morphology of C under  $\bar{A}$ -dependencies is determined by the syntactic locality of the satisfaction of EPP on C. If the EPP relation is local, with no intervenor, C appears as  $\bar{\lambda}l\bar{i}$ , whereas if it is non-local in the sense that there is a potential intervenor, C appears as  $\bar{\lambda}t\bar{i}$ . If, however, the element in [Spec, CP] is null (either a null operator or a tail of a chain, as we see in detail below), C is not phonologically spelled-out.

The evaluation of locality used in the algorithm (7.47) is based on chains (see Chapter 2).

- (7.48) Locality/intervention is evaluated based on chains.

A difference between Bùlì and Irish lies in the fact that in Bùlì the determination of the form of C is subject to locality conditions in addition to the morphosyntactic constitution of formal features of C. Also, It should be noted that Chung (1998) extensively argues that *Wh*-Agreement/Op-C Agreement crucially depends on the so-called Spec-Head Relation. As discussed elsewhere, the Spec-Head Relation requires more theoretical tools such as projection and m-command, compared to c-command. Our proposed theory, on the other hand, dispenses with the notion of m-command and reduces the "agreement" relation to strict c-command.

Let us examine our proposed theory with concrete examples.

#### 7.4.2.1 Relativization/Factive

Consider the feature composition of C in Relativization/Factives by way of (7.44). As (7.49) indicates, C in Relativization/Factives has two probe features, EPP and Op, both of which function as independent probes at the relevant derivational point.

- (7.49) C in Relativization/Factive:  $C_{[EPP, Op]}$   
 EPP and Op are split and the former is not contingent on Agree ( $C_{Op}$ ,  $G_{Op}$ ) in relativization.  
 Thus:
- a. EPP establishes Local Merge.
  - b. Op establishes Agree ( $C_{Op}$ ,  $G_{Op}$ ).

Now, consider the derivation of Subject Relativization.

- (7.50) Bùlì Subject Relativization (=7.16)
- a. Left-Headed HIRC

nùrù-wā:y àlɪ/\*àtɪ dà mángò-kú lá  
 man-Rel C bought mango-D Dem  
 ‘the man who bought the mango’

## b. HIRC

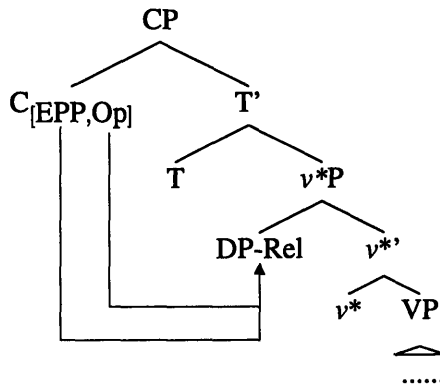
\*mángò-kú àlɪ/àtɪ nùrù-wā:y dà lá  
 mango-D C man-Rel bought Dem  
 ‘the man who bought the mango’

## c. HIRC

\*àlɪ/\*atɪ/\*∅ nùrù-wā:y dà mángò-kú lá  
 C man-Rel bought mango-D Dem  
 ‘the man who bought the mango’

Under the PTPD that was developed in Chapter 2, the two probe features on C –EPP and Op– probe simultaneously. The relativized subject DP is the first element for the probe EPP of C<sub>EPP</sub>. The relativized subject DP is also the goal for probe Op of C<sub>Op</sub>.

## (7.51) Bùlì Subject Relativization

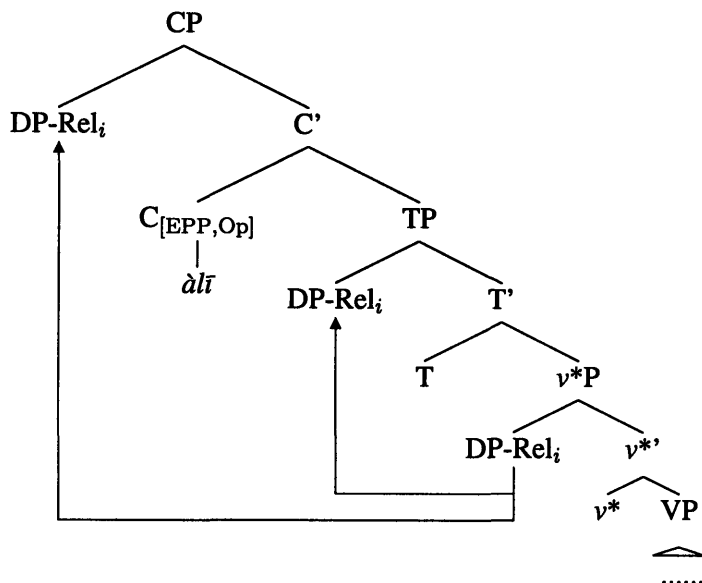


This results in Local Merge: Move (C, DP<sub>Rel</sub>) and thus, the relativized subject DP is moved to [Spec, CP]. Note also that the subject DP forms an A-chain, undergoing movement to [Spec, TP]



due to  $\phi$ -agreement Agree (T, DP<sub>Rel</sub>).

(7.52) Bùlì Subject Relativization



Thus the derivation creates two A-chains and no  $\bar{A}$ -chain (see Chapter 2). Rather what is formed is an operator-variable pair:  $\{\{DP-Rel_{CP}\}, \{DP-Rel_{v^*P}\}\}$

- (7.53) a. A-chain:  $\{DP-Rel_{TP}, \text{DP-Rel}_{v^*P}\}$   
 b. A-chain:  $\{DP-Rel_{v^*P}\}$

Now at Transfer, the locality of C's EPP relation is evaluated. In this derivation, there is no intervenor for the relation between C and the goal DP-Rel in [Spec,  $v^*P$ ], and hence the EPP relation is local. In other words, all the movement relations are nested as shown in (7.52). Thus, according to the algorithm (7.47), C is realized as  $\grave{a}l\grave{i}$ .

The example (7.50b) is ungrammatical, because the object DP cannot be moved to [Spec, CP]: it does not have any Op-feature to match with C. Neither can it satisfy the EPP of C since the probe C cannot reach the object. Finally, why is (7.50c) ungrammatical? This is due to the parametrization (7.44), C in Relativization/Factives always has EPP. Thus it requires its specifier to be filled by an element that satisfies locality.

Now consider the derivation of Non-Subject Relativization.

(7.54) Bùlì: Non-Subject Relativization

- a. HIRC (=7.15a)

Àtìm  $\grave{a}l\grave{i}$ / $\acute{a}t\grave{i}$  dà mángò-kū:y lá

Àtìm C ate mango-Rel Dem

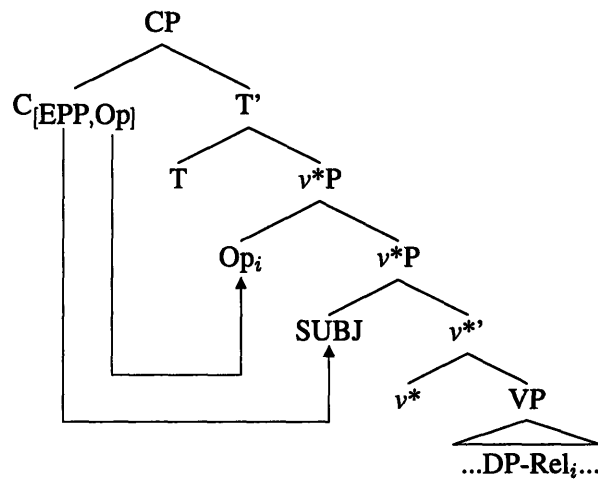
'the mango that Àtìm bought'

## b. Left-Headed HIRC (=7.15b))

mángò-kū:y \*àlì/àtì Àtìm dà lá  
 mango-Rel C Àtìm bought D  
 ‘the mango that Àtìm bought’

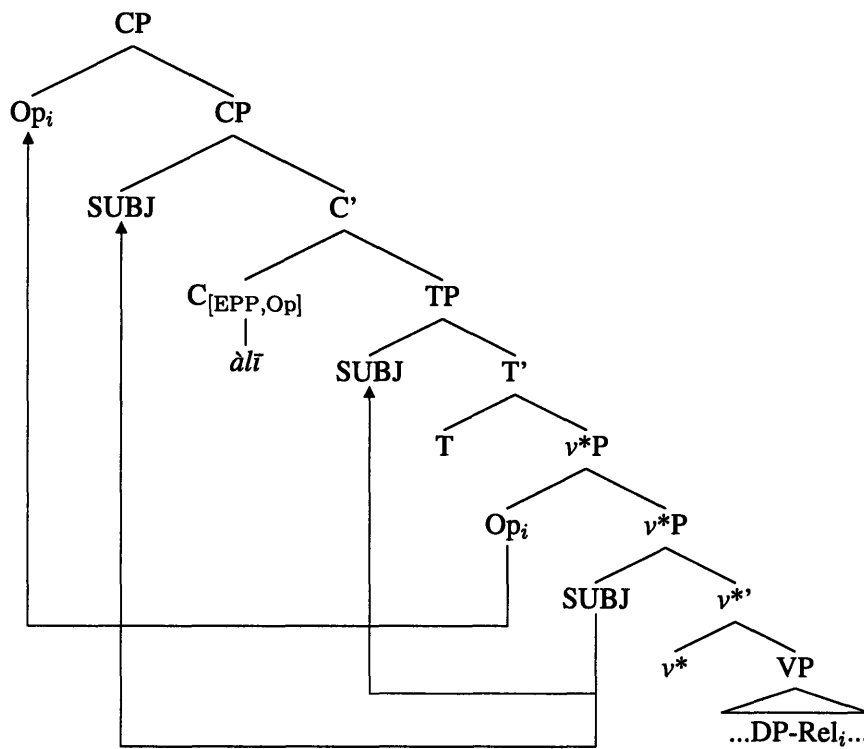
First, let us examine the derivation of in-situ HIRC. I assume that in-situ HIRC involves a movement of a null operator extracted out of the host DP-Rel (See Section 5.3.2 of Chapter 5). C’s probe features probe simultaneously and each of them locates different goals. For the Op-feature, the closest matching goal is the null operator at the edge of  $v^*P$ . On the other hand, for the EPP, the closest goal is the subject DP. This is because a phonologically null element cannot satisfy the EPP and hence the Op cannot count as a potential goal.

## (7.55) Bùlì Non-Subject Relativization



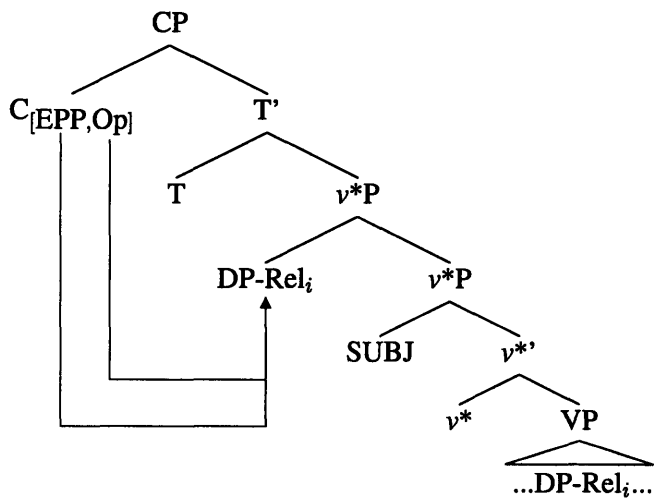
Based on the Agree relations above, the local subject is moved to the edge of CP to satisfy EPP. At Transfer, C’s EPP relation is evaluated as local and hence C appears as *àlì*.

(7.56) Bùlì Non-Subject Relativization (HIRC)



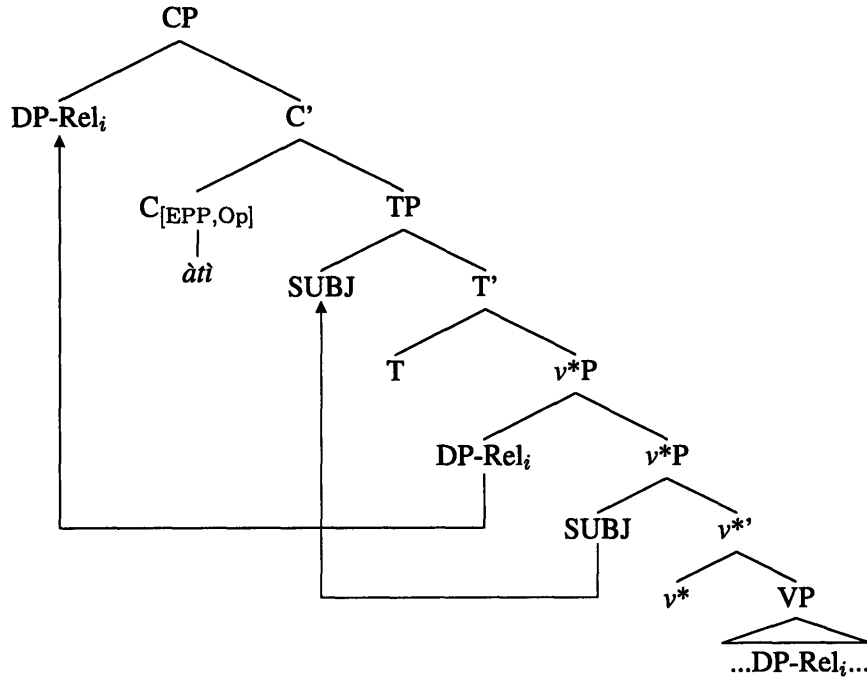
Next, let us examine the derivation of Left-Headed HIRC. The difference is that in this case, Op-movement results in pied-piping of the entire DP-Rel. The relativized object is first dislocated to the edge of  $v^*P$ , and then T and C are merged. At this point, C's probe features probe simultaneously. For either probe feature, the relativized object DP counts as the closest goal.

(7.57) Bùlì Non-Subject Relativization



Thus the final representation is as follows.

(7.58) Bùli Non-Subject Relativization (Left-Headed HIRC)



C's EPP relation is evaluated at Transfer. Significantly, as the diagram shows, in spite of the fact that it was local derivationally, the relation is representationally non-local since the head of the A-chain  $SUBJ_{TP}$ ,  $SUBJ_{v^*P}$  intervenes. Thus C is realized as *àti*.

What is important here is that the parameterization in (7.44) (i) allows a non-Op goal to be moved to [Spec, CP] because EPP is split from Op, (ii) disallows [Spec, CP] from being empty in the end because EPP exists, and (iii) disallows a non-Operator non-subject element from being moved to [Spec, CP] due to locality.

#### 7.4.2.2 *Wh*-Questions/Focus

Having demonstrated that the parametrization in (7.44) accounts for the morphological alternation together with the above-mentioned properties of Relativization/Factives, let us now turn to *Wh*/Focus constructions. The parametrization (7.44) for *Wh*/Focus is repeated here for review.

(7.59) C in *Wh*-Questions/Focus:  $C_{[Op-EPP]}$

EPP and Op is unsplit and the former is contingent on Agree ( $C_{Op}$ ,  $G_{Op}$ ) in *Wh*/Focus.

Now, let us first see the derivation of non-subject *Wh*/Focus constructions.

(7.60) Bùlì: Non-Subject *Wh*/Focusa. ká bwà àlì/àtì kpār<sup>w</sup>ā-wá tà? (= (7.21a))

F what C farmer-D have

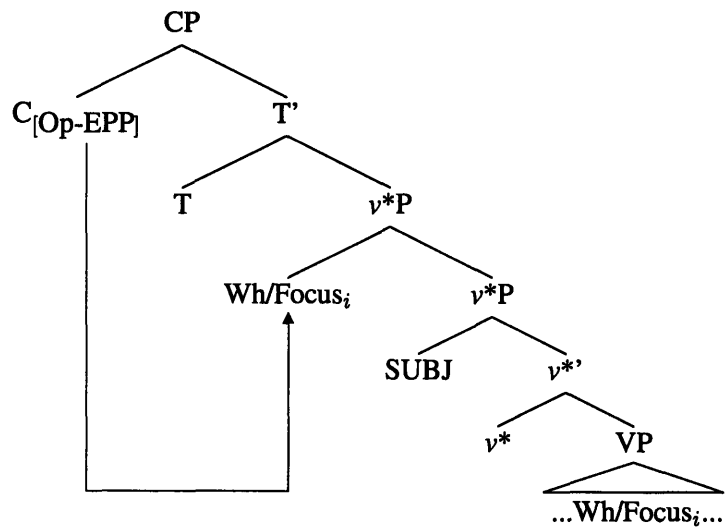
'What does the farmer have?'

b. ká nā:mú àlì/àtì kpār<sup>w</sup>ā-wá tà. (= (7.23a))

F cow-D C farmer-D have

'It is the cow that the farmer owns.'

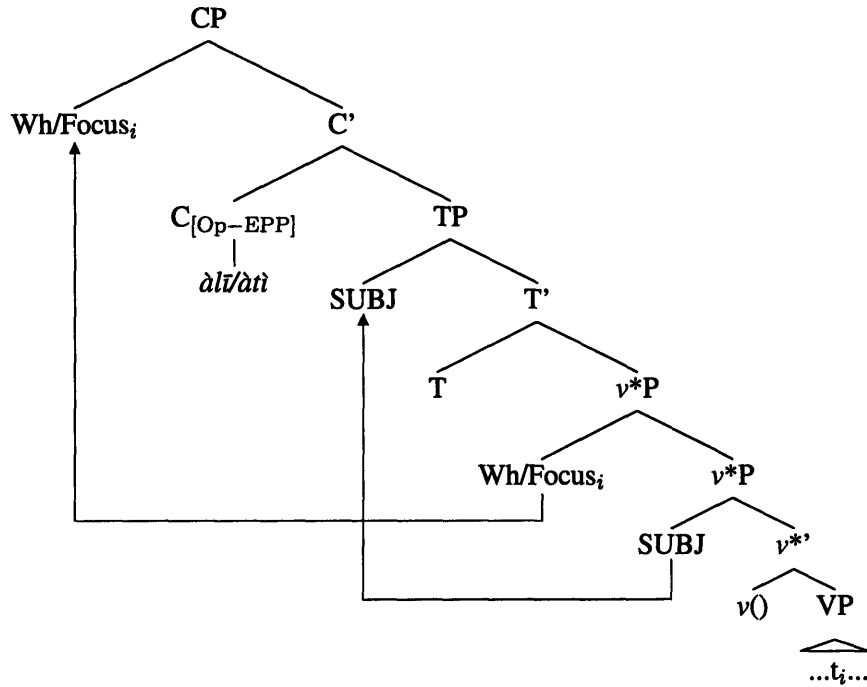
Due to the parameter (7.59), there is only one probe – Op of  $C_{[Op-EPP]}$ . Thus the relevant part of the derivation proceeds as follows. The probe Op-feature Agrees with the *Wh*/Focus element at the edge of  $v^*P$ , which has been dislocated to this position out of VP.

(7.61) Bùlì Non-Subject *Wh*/Focus

The Agree relation between  $C_{Op-EPP}$  and the *Wh*/Focus element results in dislocation of the goal to [Spec, CP] for EPP satisfaction. Simultaneously with this operation, the subject DP also

forms an A-chain driven by  $\phi$ -features on T. The resulting representation is diagrammed below.

(7.62) Bùlì Non-Subject *Wh/Focus*



In this derivation, the following two chains are formed.

- (7.63) a. A-chain: {SUBJ<sub>TP</sub>, SUBJ<sub>v\*P</sub>}  
 b.  $\bar{A}$ -chain: {*Wh/Focus*<sub>CP</sub>, *Wh/Focus*<sub>v\*P</sub>}

If C's EPP relation is literally evaluated at Transfer, it turns out to be non-local since the head of the A-chain (SUBJ<sub>TP</sub>, SUBJ<sub>v\*P</sub>) intervenes. Thus C is realized as *àtì*. This is exactly the same as what we have seen in Non-Subject Relativization/Factives. But as the data shows, Non-Subject *Wh/Focus* exhibits free alternation between *àlì* and *àtì*. How can *àlì* appear?

According to the setting in (7.59), EPP in *Wh/Focus* is relativized to Op-features and only the closest goal with the Op-feature can be a matching goal. Thus, unlike in Relativization/Factives, non-operator elements can never move to [Spec, CP]. This correctly explains the ungrammaticality of the sentences below. In other words, there is no HIRC counterpart of *Wh/Focus* constructions.

(7.64) Bùlì: Non-Subject *Wh/Focus*

- a. \*kpār<sup>w</sup>ā-wá àlì/àtì tà ká bwà  
 farmer-D C have F what  
 'What does the farmer have?'
- b. \*kpār<sup>w</sup>ā-wá àlì/àtì tà ká nā:mú  
 farmer-D C have F cow

‘It is the cow that the farmer owns.’

This parametrization of EPP has a significant consequence for the algorithm (7.47). I propose that the evaluation of EPP can also be relativized with respect to an Op-feature, if the EPP is relativized to an Op-feature. This means that at Transfer, C’s EPP is evaluated with respect to the  $\bar{A}$ -chain:  $\{Wh/Focus_{TP}, Wh/Focus_{v^*P}\}$ . Now crucially, this relation is evaluated as local, since there is no intervener with a matching Op-feature. Thus, the free alternation between the two forms of the complementizer follows.

As is now clear, in subject *Wh/Focus* extraction,  $\bar{a}l\bar{i}$  is realized since Move ( $C_{[Op-EPP]}, DP_{Op}$ ) is necessarily local.

(7.65) Bùlì: Subject *Wh/Focus*

a. ká wàná àlì/\*àtì tà nā:b? (= (7.20a))

Foc who C have cow(Id)

‘Who owns a cow?’

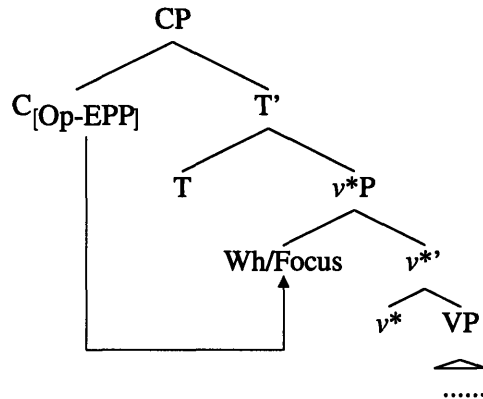
b. ká kpār<sup>w</sup>ā-wá àlì/\*àtì tà nā:b. (= (7.22a))

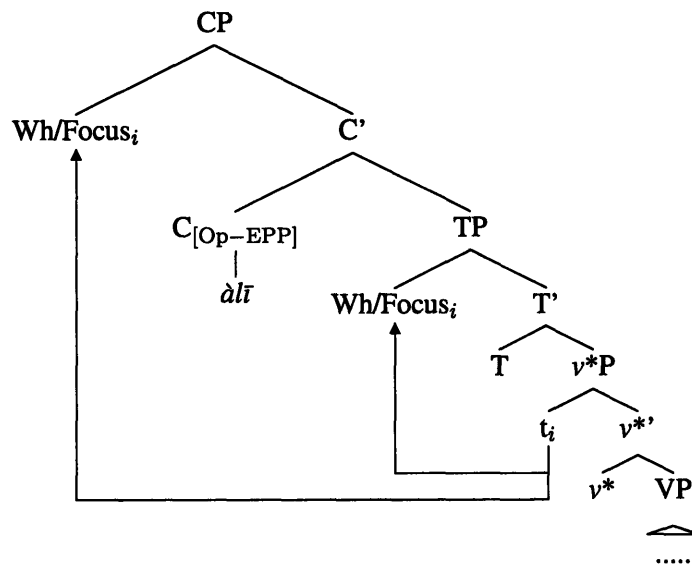
F farmer-D C have cow(Id)

‘It is the farmer who owns a cow.’

The relevant derivations are illustrated in the following trees.

(7.66) Bùlì Subject *Wh/Focus*



(7.67) Bùlì Subject *Wh/Focus*

Finally, suppose  $C_{[Op-EPP]}$  means that the “EPP” part of this feature constitution is optional in Bùlì. This correctly accounts for the existence of *Wh/Focus*-in-situ and the absence of overt *C* therein (see (7.44)). One question that remains is why Subject *Wh/Focus*-in-situ is prohibited. I defer an explanation of this restriction until Section 7.5.4, where *Wh*-adjuncts are taken into the picture.

To conclude, our single parametrization (7.44) provides a unified account for the asymmetries Op-C Agreement between Relativization/Factives and *Wh/Focus*.

### 7.4.2.3 Long-distance $\bar{A}$ -Dependencies

Finally, let us examine the derivation of long-distance extraction. I represent the derivation for both subject and non-subject long-distance extractions at the same time. Since the basic derivation is the same as the cases considered above, I focus on two points. In both Relativization/Factives and *Wh/Focus*, one difference from their local extraction counterparts is that the extraction of the embedded subject patterns with local non-subject extraction. Put another way, long-distance extraction manifests no “subject vs. non-subject” asymmetries. Thus, in Relativization/Factive, long-distance subject extraction requires  $\grave{a}t\grave{i}$ , while in *Wh/Focus*, long-distance subject extraction exhibits free  $\grave{a}l\grave{i}/\grave{a}t\grave{i}$  alternation. Second, under long-distance  $\bar{A}$ -dependencies, *C* is overtly realized only at the highest clause where the Op-element stops. As we will see, the opposite is observed in Haitian Creole. Successive-cyclic overt Op-C agreement is observed in Chamorro, Palauan, and Irish, and Passamaquoddy, also differing from the Bùlì case.

First consider long-distance Subject Relativization and *Wh/Focus*.



(7.68) Bùlì: Long-distance Subject Relativization (Left-Headed HIRC) (=7.28a)

nùrù-wā:y \*àlì/àtì Àtìm wē:nī àyīn \*(wà) s<sup>w</sup>a ná:mú là kpī yá  
 man-Rel C Àtìm say that he own cow-D Dem died Cfp

‘The man that Àtìm said that owns the cow died’

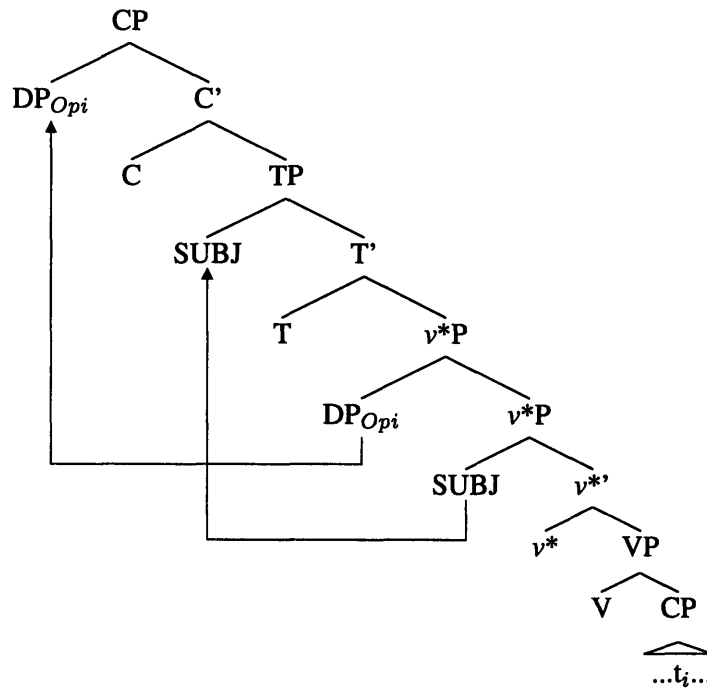
(7.69) Bùlì: Long-distance Subject *Wh*-Questions (=7.31a)

ká wàná àlì/àtì Àtìm wē:nī àyīn \*(wà) s<sup>w</sup>a ná:mú  
 F who C Àtìm say that he own cow-D

‘Who did Àtìm say that (he) owns the cow?’

It should be clear that at the evaluation of the locality of the matrix C’s EPP, the matrix subject always intervenes and the two chains cross. Thus with  $C_{[EPP,Op]}$ , *àtì* appears, while with  $C_{[Op-EPP]}$ , the two forms of C freely alternate.

(7.70) Bùlì: Non-Subject Long-Distance Extraction



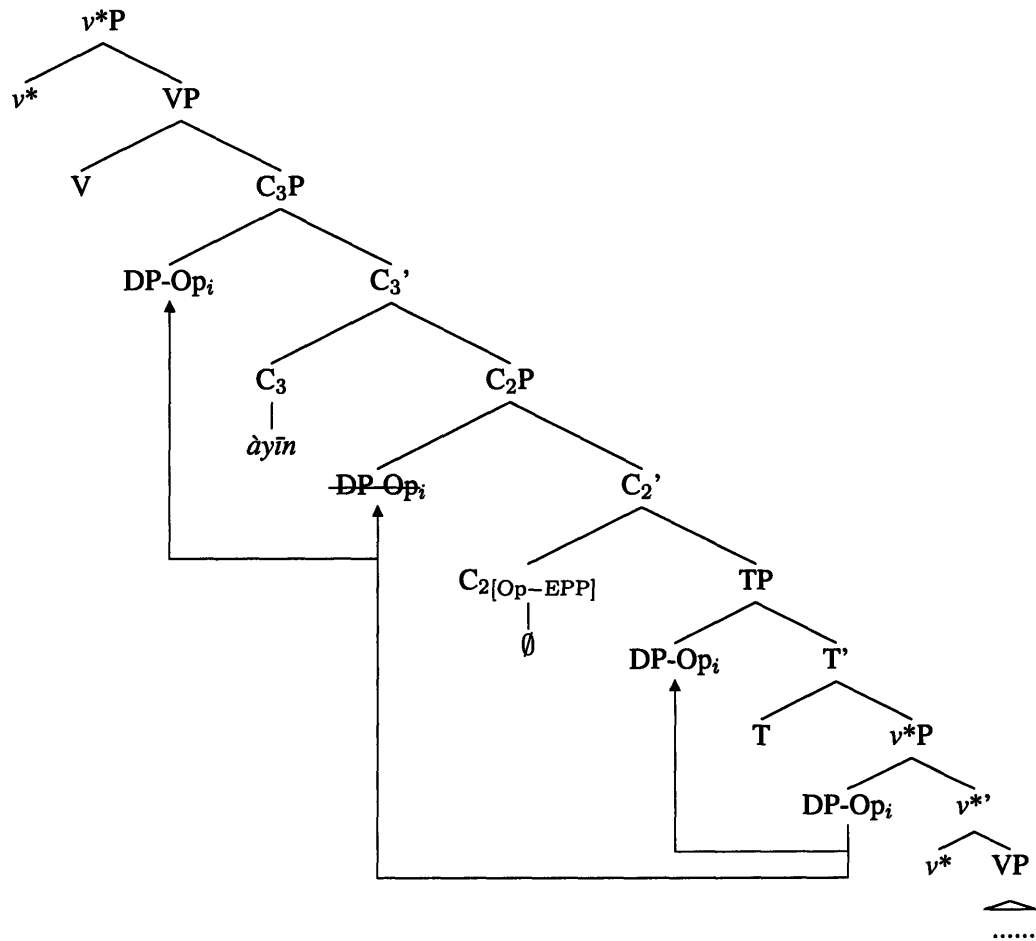
The other property of long-distance extraction that I would like to account for is the fact that the morphological reflex of Op-C Agreement is apparently restricted to the highest clause to which the operator element is moved.

(7.71) Bùlì: Long-distance Non-Subject *Wh*-Questions

- a. ká wàná àlì/àtì Àtìm wē:nī àyīn (\*àlì/\*àtì) wà (\*àlì/\*àtì) s<sup>w</sup>a ná:mú  
 F who C Àtìm say that (C) he (C) own cow-D  
 ‘Who did Àtìm say that (he) owns the cow?’
- b. ká bwà àlì/àtì Àtìm wē:nī àyīn (\*àlì/\*àtì) Àmòak (\*àlì/\*àtì) s<sup>w</sup>à.  
 F what C Àtìm say that (C) Àmòak (C) own  
 ‘What did Àtìm say that Àmòak owned?’

The literature shows that languages vary with respect to where Op-C Agreement shows up. I argue, however, that Op-C Agreement in Bùlì is indeed evaluated and realized cyclically. In other words, when no morphological reflex appears in intermediate clauses, it is an actual  $\emptyset$  realization of Op-C Agreement. To see why, we need to take a closer look at the derivation. Consider the derivation below.

## (7.72) Intermediate Positions and Op-C Agreement



As we have seen in this and preceding chapters, Bùlì has a layered CP structure and in fact, an embedded interrogative, for example, realizes  $\partial\bar{l}\bar{i}/\partial t\bar{i}$  in the position below the higher C  $\partial y\bar{n}$ . It is expected, then, that  $C_3P$ , but not  $C_2P$ , counts as a phase. In long-distance extraction, *Wh/Focus* elements go to the edge of  $C_3P$  through [Spec,  $C_2P$ ]. This derivation creates the following chains.

- (7.73) a. A-chain: {DP-Op<sub>TP</sub>, DP-Op<sub>v\*P</sub>}  
 b. A-chain: {DP-Op<sub>v\*P</sub>}  
 c.  $\bar{A}$ -chain: {DP-Op<sub>C<sub>3</sub>P</sub>, DP-Op<sub>C<sub>2</sub>P</sub>}

Now Transfer evaluates the EPP relation of  $C_2$ . But crucially, at this point, [Spec,  $C_2P$ ] is empty since the movement from there to [Spec,  $C_3P$ ] forms a uniform chain and hence does not leave a copy. The evaluation algorithm, as a result, realizes  $C_2$  as  $\emptyset$ . This is because C's EPP, even though it has been satisfied by the head of the chain derivationally, is "unsatisfied" representationally since [Spec, CP] is occupied by a phonologically null element –the tail of the chain. If this analysis is on the right track, Op-C Agreement in Bùlì is evaluated and realized at each phase and Cs in the intermediate clauses do not morphologically show up due to the locality algorithm (7.47).

### 7.4.3 Summary Two

Summarizing the discussion, I have first demonstrated that the proposed parametrization of C's feature constitution correctly accounts for (a)symmetries of the syntax of  $\bar{A}$ -dependencies between Relativization/Factives and *Wh/Focus* constructions. I have then shown that this parametrization (7.44) provides a unified explanation for the morphological reflex of Op-C Agreement, in conjunction with the algorithm (7.47).

- (7.74) Relativization/Factives

	C
Local Subject Extraction	$\partial\bar{l}\bar{i}$
Local Object Extraction	$\partial t\bar{i}$
Long-Distance Extraction	$\partial\bar{l}\bar{i}$
Otherwise	$\emptyset$

- (7.75) *Wh/Focus*

	C
Local Subject Extraction	$\partial\bar{l}\bar{i}$
Local Object Extraction	$\partial\bar{l}\bar{i}/\partial t\bar{i}$
Long-Distance Extraction	$\partial\bar{l}\bar{i}/\partial t\bar{i}$
Otherwise	$\emptyset$

## 7.5 Consequences, Predictions and Implications

Finally, we discuss consequences of the proposed theory of Op-C Agreement in Bùlì: (defective) intervention, multiple *Wh*-Questions, *Wh*-adjuncts, the nature of the edge of phases, and cross-linguistic implications.

### 7.5.1 Adverb Intervention

In the preceding sections, I have proposed that the choice of *àtì* reduces to “intervention” at locality evaluation. I would like to add two more cases that fall within the scope of intervention, *Adverb Intervention* and *Possessor Extraction*.

Adverb placement interacts with Op-C Agreement in intriguing ways in Bùlì. Consider (7.76).

(7.76) Bùlì: Adverb Placement

(Dīemwá) Àtìm (dīem(wá)) dà (\*dīem(wá)) mángò-kǔ (dīem(wá)).  
(yesterday) Àtìm (yesterday) bought (yesterday) mango-D (yesterday)

‘Àtìm bought the mango yesterday.’

As shown in (7.76), the time adverb can be placed in three possible positions, sentence-initially, between the subject and the verb, and sentence-finally. It seems uncontroversial to assume that these positions correspond to TP and *v*\*P adjoined positions, respectively.<sup>21</sup>

Quite interestingly, when the adverb is placed at the TP-adjoined position within a relative clause, the extracted subject DP results in *àtì* not *àlì*.<sup>22</sup>

(7.77) Bùlì: Extraction and Adverb Intervention

a. Left-Headed HIRC (Subject)

nú-rú-wā(:y) \*àlì/àtì/ dīemwá \*(wà) dè mángò-kú lá kpī yá.  
man-D C yesterday (he) ate mango-D Dem dead Cfp

‘The man who ate the mango yesterday is dead.’

b. HIRC (Object)

nú-rú-wá \*àlì/àtì dīemwá \*(wà) dè mángò-kū:y lá māsā.  
man-D C yesterday he ate mango-Rel Dem good

‘The mango that the man ate yesterday was good.’

c. Left-Headed HIRC (Object)

mángò-kū(:y) \*àlì/àtì dīemwá nú-rú-wá dè lá māsā.  
mango-Rel C yesterday man-D ate Dem good

‘The mango that the man ate yesterday was good.’

This can be understood as another case of intervention –more specifically, defective intervention; the intervening adverb, although it cannot be licitly extracted by the probe EPP in Bùlì (see (7.78)), still counts as a defective intervenor and hence the relation Merge (C, DP<sub>SUBJ</sub>) is evaluated as non-local (7.79).<sup>23</sup>

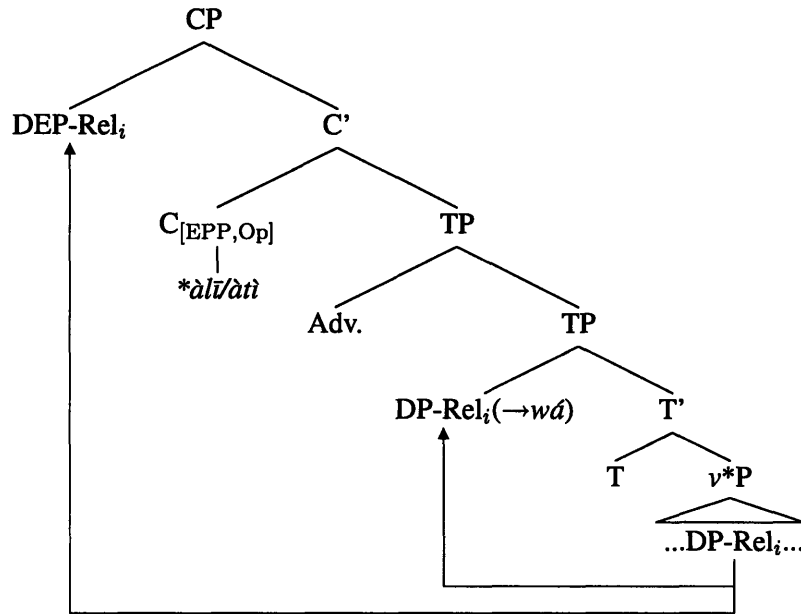
<sup>21</sup>The definite determiner *wá* is preferred in the sentence-initial position. It has some focus interpretation rather than definiteness.

<sup>22</sup>The resumptive pronoun becomes obligatory here. One might think that subject resumption in Bùlì correlates with locality/adjacency between C and the subject (e.g. ECP). I leave the issue for future research.

<sup>23</sup>There is a question of why EPP of C cannot attract adverbs in Bùlì, while In Stylistic Fronting in Icelandic, T’s EPP can attract any category. Note that both operations are sensitive to phonological overttness. I leave the issue for future research.

- (7.78) \* **dīemwá** àlì/àtì nùrú-wā:y dè mángò-kú lá kpī yá.  
 yesterday C man-Rel ate mango-D Dem dead Cfp  
 ‘The man who ate the mango yesterday is dead.’

(7.79) The Derivation of Bùlì Subject Relativization and Adverb Intervention

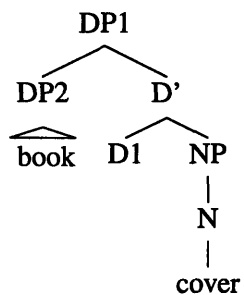


7.5.2 Possessor Extraction

Consider the standard structure of possessor constructions (7.80) and (7.81).<sup>24</sup>

- (7.80) Bùlì: Possessor  
 gbán-ká ñà:ñ-kǎ  
 book-D cover-D  
 ‘the cover of the book’

(7.81) Possessor in Bùlì



<sup>24</sup>Just for convenience, we are assuming the simplest DP structure. The DP structure should be more articulated given the CP/DP Symmetry

Now let us see what happens if we extract the possessor in relativization.

(7.82) Bùlì: Non-Subject Possessor Relativization

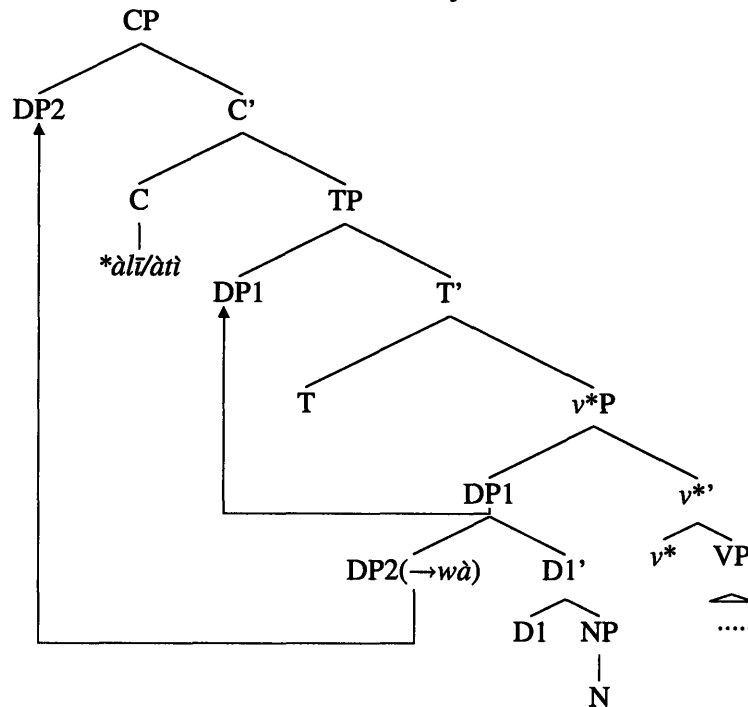
- a. Àtìm dà gbán-kā:y \*àlì/àtì Àmòak ñmìrìsì kà ñà:η-kà lá].  
 Àtìm bought book-Rel C Àmòak designed its cover Dem  
 ‘Àtìm bought the book whose cover Àmòak designed.’
- b. Àtìm dà [gbán-kā:y ñà:η-kà \*àlì/àtì Àmòak ñmìrìsì lá.  
 Àtìm bought book-Rel cover C Àmòak designed Dem  
 ‘Àtìm bought the book whose cover Àmòak designed.’

(7.83) Bùlì: Subject Possessor Relativization

- a. Àtìm dà gbán-kā:y \*àlì/àtì kà ñà:η-kà lālā lá.  
 Àtìm bought book-Rel C its cover is-beautiful Dem  
 ‘Àtìm bought the book whose cover was beautiful.’
- b. Àtìm dà gbán-kā:y ñà:η-kà àlì/\*àtì lālā lá.  
 Àtìm bought book-Rel cover C is-beautiful Dem  
 ‘Àtìm bought the book whose cover was beautiful.’

(7.82) is rather straightforward since the dependency between C and the possessor in (7.82a) or the whole object DP in (7.82b) counts as non-local due to the intervention of the subject DP. In the same vein, as shown in (7.83a), the possessor relativization out of subjects requires *àtì* not *àlì*. This is expected, again, since the subject DP intervenes for C’s EPP relation at evaluation. It is worth noting that when the possessor DP1 is “pied-pied” with the whole noun host DP1 as in (7.83b), C is realized as *àlì*, as expected, since this derivation patterns with the usual Subject Relativization.

## (7.84) Possessor Relativization out of the Subject under the PTPD



Now, our theory of parametrization of C in Bùlì makes a prediction that in Subject Possessor *Wh*-extraction, either *àlɪ* or *àtɪ* should be allowed when only the possessor *Wh*/Focus-phrase is extracted without pied-piping irrespective of subject/non-subject possessor extraction, because the host DP2 counts as the intervenor, as in the case of subject possessor extraction. This prediction is exactly borne out, as reported in Ferreira and Ko (2003)

(7.85) Subject Possessor *Wh*-Questions

- a. ká wàná àlɪ/àtɪ \*(wà) ná:b nà:yì Àtìm.  
 F who C his cow hit Àtìm  
 ‘Whose cow hit Àtìm?’ (Ferreira and Ko 2003, 41)
- b. ká wàná ná:b àlɪ/\*àtɪ nà:yì Àtìm.  
 F who cow C hit Àtìm  
 ‘Whose cow hit Àtìm?’

(7.86) Non-Subject Possessor *Wh*-Questions

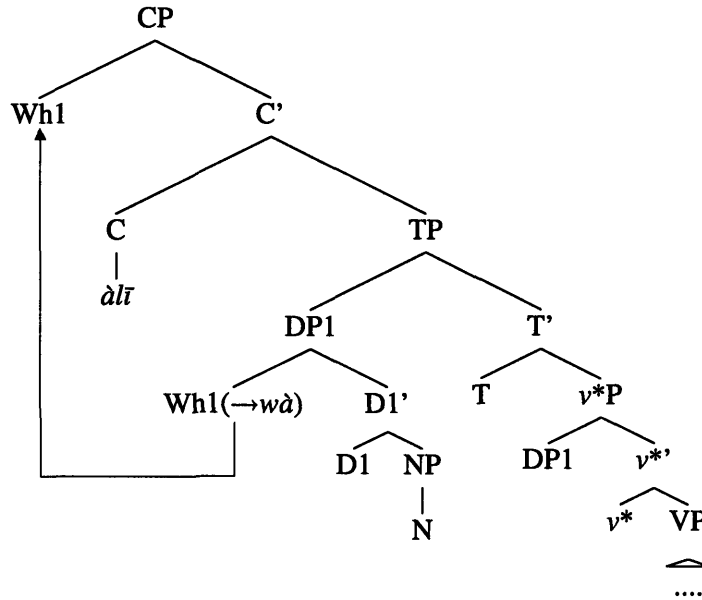
- a. ká wàná àlɪ/àtɪ Àtìm nà:yì \*(wà) ná:b.  
 F who C Àtìm hit his cow?  
 ‘Whose cow did Àtìm hit?’
- b. ká wàná ná:b àlɪ/àtɪ Àtìm nà:yì.  
 F who cow C Àtìm hit  
 ‘Whose cow did Àtìm hit?’





to [Spec, TP], then it would wrongly predict that C could only appear as *àlĩ*. This is because there should be no intervenor either in terms of EPP or Op-EPP.

(7.90) *Wh*/Focus Extraction out of the Subject under the Cyclic Model



### 7.5.3 Multiple *Wh*-Questions

Bùlì allows Multiple *Wh*-Questions. In Multiple *Wh*-Questions, only one *Wh*-phrase can be fronted to [Spec, CP]. Significantly, however, there is no superiority effect and hence fronting of either *wh*-phrase is licit. The only conditions are that the in-situ *wh*-phrase cannot bear the Focus marker *ká* and that multiple occurrences of *ká* are disallowed within a single clause.<sup>25</sup>

(7.91) Bùlì: No Superiority (Subject vs. Object)

- a. *ká wàná àlĩ dà bwà?*  
F who C bought what  
'Who bought what?'
- b. *ká bà àlĩ/àtì wàná dà?*  
F what C who bought  
'Who bought what?'
- c. \* *ká bwà àlĩ/àtì ká wàná dà?*  
F what C who F bought  
'Who bought what?'
- d. \* *bwà àlĩ/àtì ká wàná dà?*  
what C F who bought  
'Who bought what?'

<sup>25</sup>The same ban against multiple focus markers within a single clause is also observed in Navajo (Barss et al. 1991).

The examples in (7.92) show the absence of superiority. In the double-object type Serial Verb Construction, either DO or IdO can be *Wh*-fronted.

(7.92) Bùlì: No Superiority (Direct Object vs. Indirect Object)

a. *ká wàná àlì/àtì Àtìm pà bwà tèt?*  
 F who C Àtìm take what to

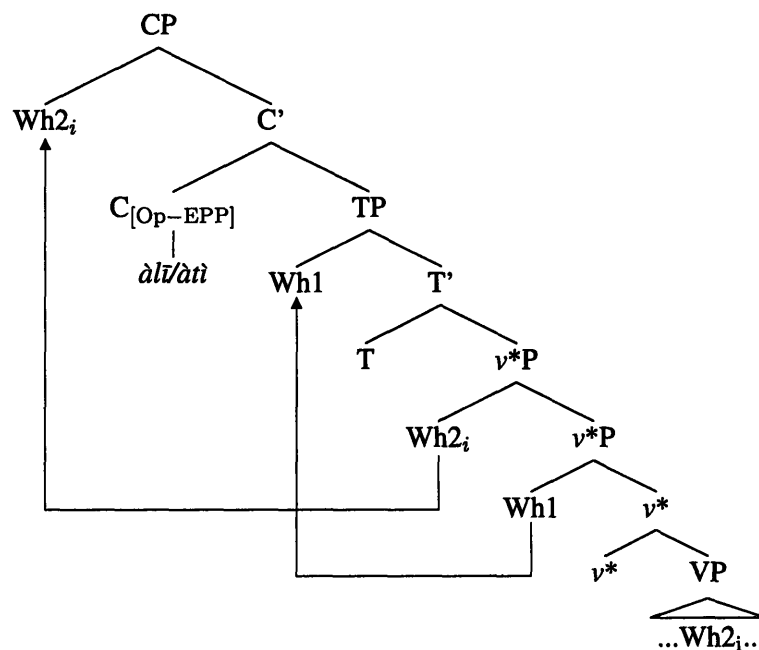
‘Who did Àtìm give what to?’

b. *ká bwà àlì/àtì Àtìm pà tèt wàná?*  
 F what C Àtìm take to who

‘What did Àtìm give to who?’

The derivation of the “superiority violation” sentences is represented as follows.

(7.93) Bùlì: The Derivation of Multiple *Wh*-Questions with Superiority Violation



Again, since the subject intervenes, the EPP relation counts as non-local and *àtì* is predicted correctly. But a challenging question remains as to *àlì*. This is because in terms of  $\bar{A}$ -chains, it still crosses the intervening *Wh1* subject and hence the EPP relation should still count as non-local.

I assume that in Multiple *Wh*-Questions in a single clause, the *Wh*-phrase left in-situ does not have any operator feature. If this is true, the intervening *Wh1* subject should not count as an intervenor and hence *àlì* is predicted, correctly. That the in-situ *Wh*-phrase does not have any operator feature is expected, if the locus of the operator feature is the focus particle *ká*. As the examples show, the second *Wh*-phrase cannot have the focus marker.

In the next section, further support for the absence of the operator feature on the in-situ *Wh1* in [Spec, TP] is shown building on *Wh*-adjuncts and *Wh*-subjects in-situ.

#### 7.5.4 \**Wh*-in-situ at the Edge of *v*\*P

As we have seen in Chapter 2, Bùlì does not allow subject *Wh*-in-situ, while it allows object *Wh*-in-situ. I have proposed to explain object *Wh*-in-situ by assuming that the EPP part of  $C_{[Op-EPP]}$  in Bùlì is optional:  $C_{Op}$ . The question arises, however, as to why this option does not license subject *Wh*-in-situ. As (7.94) shows, a subject *Wh*-phrase must be overtly extracted.

(7.94) Bùlì Subject *Wh*-Questions

- a. ká wàná \*(àlì) tà nā:b  
 F who C have cow(Id)  
 ‘Who owned a cow?’
- b. ká wàná (àlì) pòlì àyìn ká wàná \*(àlì) tà nā:b  
 F who C thought C F who C have cow(Id)  
 ‘Who thought who owned a cow?’

This restriction is in fact widely observed in the languages of the world. Some other languages with this restriction include Yòrùbá (Carstens 1985, 1987), Haitian Creole (Takahashi and Gracanin 2004), Vata (Koopman 1984), Akan (Saah 1988, 1994), Hausa (Tuller 1985, 1986), Kikuyu (Clements 1984), Standard Indonesian (Cole et al. 2005), Malagasy (Sabel 2003), Tagalog (Richards 2001), Javanese (Cole et al. 2003), and Kinyarwarnda (Maxwell 1981). In Yòrùbá, for example, a subject *Wh*-phrase must come to the left of the complementizer *ni*, leaving a resumptive pronoun. In Haitian Creole, a subject *Wh*-phrase must appear to the left of the complementizer *ki*.<sup>26</sup>

(7.95) Haitian Creole: (Takahashi and Gracanin 2004)

- a. Kilès (\*ki) wè Jan?  
 who KI see Jan  
 ‘Who saw Jan?’
- b. Kimoun ki kwè kilès ki rich  
 who C believe who C rich  
 ‘Who believes who is rich?’

(7.96) Kikuyu: (Clements 1984)

- nó.o o-tém-íré/\*á-’tém-íré mo-te?  
 FP-who PP-cut-T/SP-cut-T CP-tree  
 ‘Who cut a tree?’

<sup>26</sup>Some languages (e.g. Yòrùbá, Vata, Akan) require pronominal resumption when a subject is extracted. This can be explained if in these languages, somehow two chains are required to be phonologically instantiated: one for  $\bar{A}$ -movement and the other for A-movement under the parallel derivation. See Richards (2001) for an alternative (but related) explanation.

(7.97) Yòrùbá: (Carstens 1985, 1987)

Ta ni \*(ó) ní kòrin?  
Who F 3Sg. Asp sing

‘Who is singing?’

(7.98) Akan: (Saah 1988, 23)

Hena na \*(ɔ-)baa ha nɛra?  
who F 3Sg.-come.Pst here yesterday

‘Who came here yesterday?’

(7.99) Standard Indonesian: (Cole et al. 2005)

Apa \*(yang) membuatmu demikian gembira bsri ini?  
what C MEN-make-2Sg. so happy day this

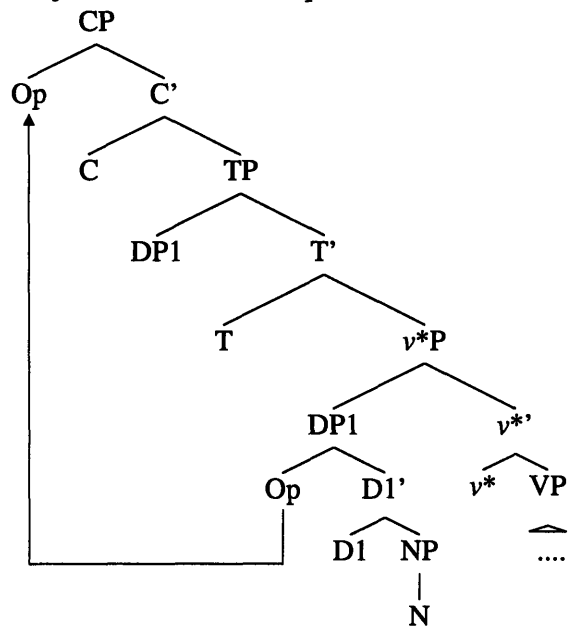
‘What makes you so happy?’

(7.100) Vata: (Koopman 1984, 367-368)

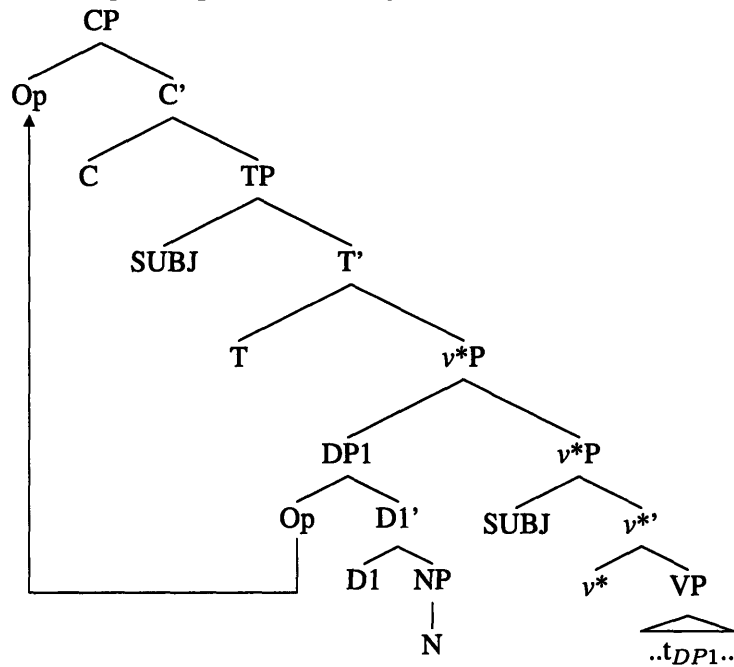
àlò \*(ò) lē sa'ká la'?  
Who 3Sg. eat rice WH

‘Who is eating rice?’

Descriptively speaking, a *Wh*-element cannot be left in-situ at the edge of  $\nu^*P$  or in [Spec, TP]. I propose that “\**Wh*-in-situ at the edge of  $\nu^*P$ ” is due to islands. Assuming that null Operator movement is involved in *Wh*-in-situ (Watanabe 1991, 1992), subject *Wh*-in-situ must be derived from extracting an null operator out of the subject at the edge of  $\nu^*P$ .

(7.101) \*Subject *Wh*-in-situ and Operator Movement

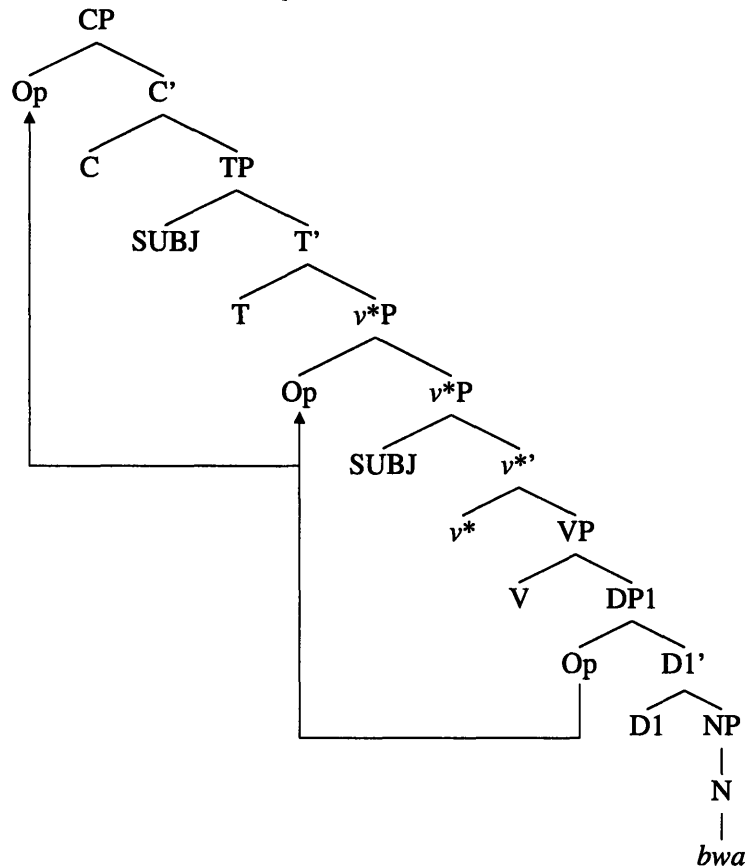
The same is in fact true with illicit cases of stranding *Wh*-elements at the edge of  $v^*P$ . These cases involve extraction out of elements at the edge of  $v^*P$ . Thus both cases share one property –they are instances of extraction out of elements at the edge of  $v^*P$ .

(7.102) \*Stranding a *Wh*-phrase at the Edge of  $v^*P$  (DP1=*Wh*)

As argued in Chapter 2 (with possessor raising in Kinyarwanda) and Chomsky's Fall lectures (2004) (with English *Wh*-extractions), the Subject Island reduces to the inaccessibility of "the edge of the edge" for movement. So, the only way to license a subject *Wh*-phrase is pied-pipe the entire category containing the operator –DP1.<sup>27</sup>

On the other hand, there is no problem with non-subject *Wh*-in-situ in Bùlì.

<sup>27</sup>Note that overt extraction is possible out of DPs in Bùlì but it obligatorily leaves a resumptive pronoun. This is probably a last resort to remedy the otherwise illicit extraction. But note that a null operator cannot use this strategy presumably because it is null and hence cannot leave a non-null pronoun.

(7.103) Object *Wh*-in-situ and Operator Movement

Note that the object *Wh*-phrase is in the complement of VP and hence its edge (i.e. [Spec, DP1]) is accessible for movement. Thus extraction of a null operator out of objects causes no problem and hence is licit.<sup>28</sup>

Finally, I would like to point out another consequence. As we have seen above, Bùli allows partial *Wh*/Focus movement. Note that (7.104b) is ambiguous and crucially the partially-moved *Wh*-phrase can take a matrix scope.

<sup>28</sup>N. Chomsky (p.c.) points out that one could think of another story. For example, the reason why a *Wh*-phrase cannot be left at the edge of  $v^*P$  is due to intervention; a *Wh*-object, if stranded at the edge of  $v^*P$ , would trigger intervention effects for the  $\phi$ -agreement relation between the subject and C-T.

(7.1) [ C [... T $\phi$  [ $v^*P$  WH [ $v^*P$  SUBJ ..... ] ] ] ]

However, it seems to be cross-linguistically true that even *Wh*-adjuncts cannot be left at the edge of  $v^*P$  (see Fanselow To appear for a cross-linguistic overview of partial *Wh*-movement). This undermines an explanation for the ban on *Wh*-elements being at the  $v^*P$  edge in terms of intervention, because *Wh*-adjuncts (or adjuncts in general) should not interfere with  $\phi$ -feature relations.

(7.104) Bùlì: Full/Partial Non-Subject *Wh*-Questions

- a. **ká bwà àlì/àtì** Àtìm wē:nī àyīn Àmòak s<sup>w</sup>à.  
 F what C Àtìm say that Àmòak own  
 ‘What did Àtìm say that Àmòak owned?’
- b. Àtìm wē:nī àyīn **ká bwà àlì/àtì** Àmòak s<sup>w</sup>à.  
 Àtìm said that F what C Àmòak owned  
 ‘What did Àtìm say that Àmòak owned?’  
 ‘Àtìm asked what Àmòak owned.’

The question is why the *Wh*-phrase can be left in this position, allowing the extraction of the null operator from its specifier. If this position, [Spec, C<sub>2</sub>], is the edge of a phase, it is expected that such stranding is prohibited on the same grounds as stranding at the edge of *v*\*P was prohibited. I would like to suggest that the problem ceases to exist if C<sub>2</sub>P is not a phase. Then, the null operator is free to be extracted out of the *Wh*-phrase moved to the edge of C<sub>2</sub>P. It should be recalled that Bùlì has a layered CP structure. *Wh*-phrases appear below C<sub>3</sub> *àyīn* and this higher complementizer cannot be omitted.

Suppose, then, that in Bùlì C<sub>3</sub>P constitutes a phase. It is predicated, then, that a *Wh*-phrase cannot be left at the edge of C<sub>3</sub>P. This prediction is indeed borne out, as the ungrammaticality of (7.105) indicates.

(7.105) Bùlì: Partial Non-Subject *Wh*-Questions

- \* Àtìm wē:nī **ká bwà** àyīn **àlì/àtì** Àmòak s<sup>w</sup>à.  
 Àtìm said F what that C Àmòak owned  
 ‘What did Àtìm say that Àmòak owned?’  
 ‘Àtìm asked what Àmòak owned.’

The same reasoning applies to the case where an extraction out of a topicalized phrase is prohibited. Again, the derivation of the illicit example involves extraction out of the topicalized element at the edge of a phase, [Spec, CP].

## (7.106) English (Richards 2001, 185)

- a. Who do you think that John would like pictures of?  
 b. \*Who do you think that pictures of, John would like?

**7.5.5 *Wh*-Adjuncts**

Now let us turn to *Wh*-adjuncts. As noted earlier, *Wh*-adjuncts exhibit two peculiar properties: (i) they cannot be left in-situ and (ii) they require C to be *àtì*.<sup>29</sup>

<sup>29</sup>The ungrammaticality of in-situ *Wh*-adjuncts seems to be a slightly milder rather than outright ungrammatical. The same is true of the use of *àlì* in those examples, for reasons that I have not yet fully understand.



(7.107) Bùli: “Where”

- a. **ká bē** ?\*àlì/àtì Àtìm nàyi Àmòak?  
 F where C Àtìm hit Àmòak  
 ‘Where did Àtìm hit Àmòak?’
- b. ?\* Àtìm nàyi Àmòak **ká bē**?  
 Àtìm hit Àmòak where  
 ‘Àtìm hit Àmòak where?’

(7.108) Bùli: “When”

- a. **ká ðisàpō/ðimpō** ?\*àlì/àtì Àtìm nàyi Àmòak?  
 F when C Àtìm nagi Àmòak  
 ‘When did Àtìm hit Àmòak?’
- b. ?\* Àtìm nàyi Àmòak **ká ðisàpō/ðimpō**?  
 Àtìm hit amok F when  
 ‘Àtìm hit Àmòak when?’

(7.109) Bùli: “How”

- a. **ká sè** ?\*àlì/àtì Àtìm nàyi Àmòak?  
 F how C Àtìm hit Àmòak?  
 ‘How did Àtìm hit Àmòak?’
- b. ?\* Àtìm nàyi Àmòak **ká sè**?  
 Àtìm hit Àmòak F how  
 ‘Àtìm hit Àmòak how?’

(7.110) Bùli: “Why”

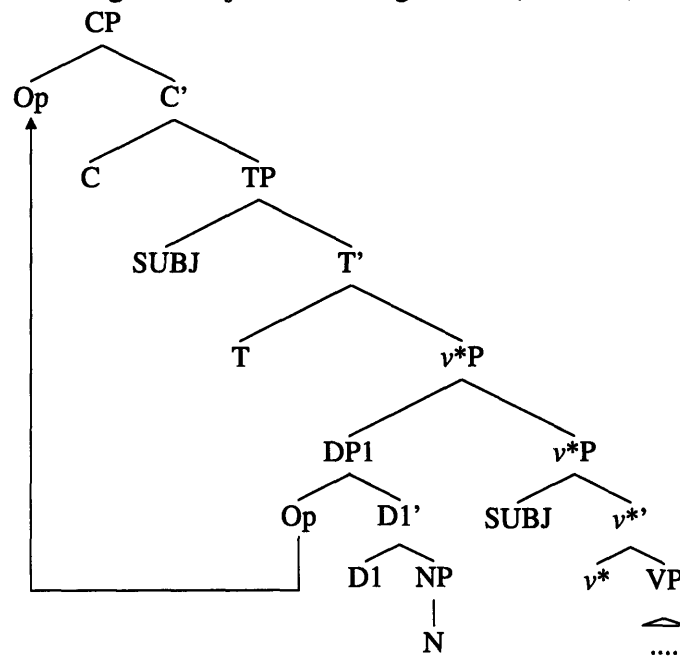
- a. **ká bwànīy/ká bwà-lī-swà** ?\*àlì/àtì Àtìm nàyi Àmòak?  
 F why/F why C Àtìm hit Àmòak  
 ‘Why did Àtìm hit Àmòak?’
- b. ?\* Àtìm nàyi Àmòak **ká bwànīy/ká bwà-lī-swà**?  
 Àtìm hit Àmòak F why/F why  
 ‘Àtìm hit Àmòak why?’

The fact that those *Wh*-adjuncts resist being left in-situ is reminiscent of similarity with *Wh*-subjects, discussed in the preceding section. Therefore, I propose the following hypothesis.

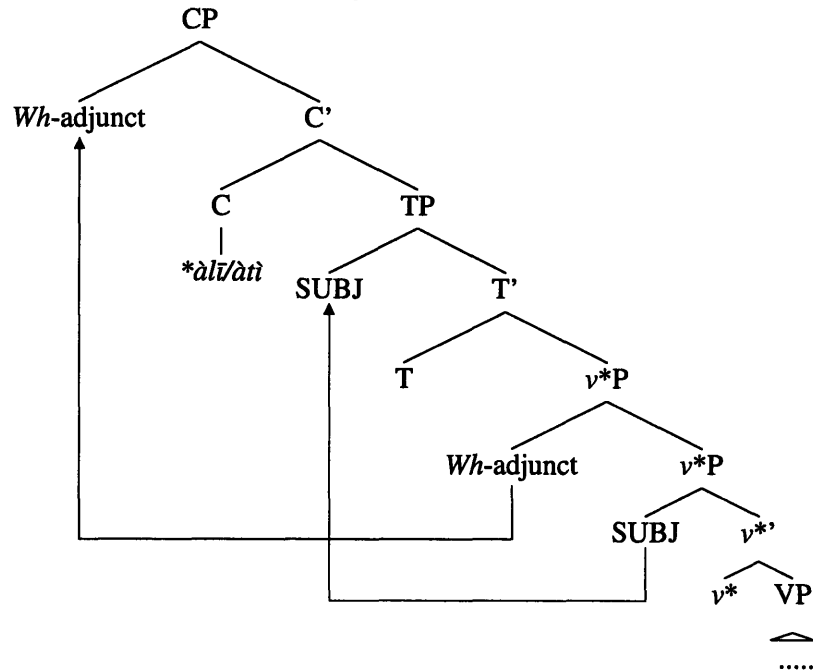
(7.111) *Wh*-adjuncts in Bùli are External-Merged at the edge of *v*\*P.

*Wh*-adjuncts, externally merged at the edge of *v*\*P (above the external argument), constitute an island since they are at the edge of the phase. Therefore, a null operator cannot be extracted out of those elements and consequently, *Wh*-adjuncts in-situ are prohibited.

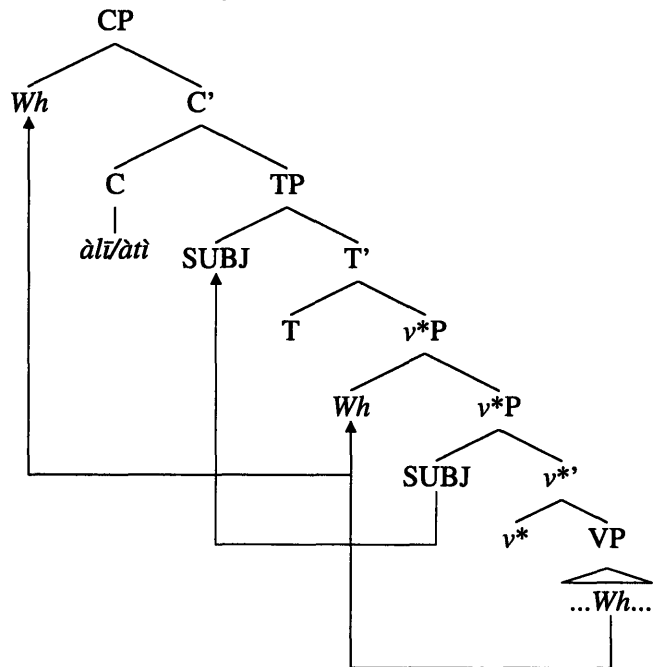
(7.112) \*Stranding a *Wh*-adjunct at the Edge of  $v^*P$  (DP1=*Wh*)



If (7.111) is on the right track, the only way to form *Wh*-adjunct Questions in Bùlì is to move the entire *Wh*-adjuncts. The derivation of the sentences in (7.107)–(7.110) is represented as follows.

(7.113) Bùlì: The Derivation of *Wh*-adjuncts Question

Now let us ask why *Wh*-adjunct extraction requires *àtì*, not *àlì*. This is in fact unexpected given that the extraction of non-subject *Wh*-phrases results in free alternation between the two complementizer forms. In fact the derivation looks quite similar

(7.114) Bùlì: The Derivation of Non-Subject *Wh*-Questions

But they differ in one important respect. *Wh*-adjuncts are externally merged at the edge of  $v^*P$ , while non-subject *Wh*-phrases are internally merged at the edge of  $v^*P$  in the course of the derivation. Under the PTPD, the extraction of a *Wh*-adjunct from the edge of  $v^*P$  does not form an  $\bar{A}$ -chain, while the extraction of a non-subject *Wh*-phrase from the same position forms an  $\bar{A}$ -chain (Chapter 2, Chomsky 2004b, Rizzi 2004a). Thus the derivation (7.114) forms one A-chain.

(7.115) a. A-chain: {SUBJ<sub>TP</sub>, SUBJ <sub>$v^*P$</sub> }

If locality is evaluated in terms of the EPP of C, the EPP dependency is not local since the subject in [Spec, TP] intervenes. Hence  $\bar{a}t\bar{i}$  is selected. On the other hand, if the EPP of C is evaluated in terms of Op<sub>EPP</sub> of C –namely, an  $\bar{A}$ -chain–, it returns no result. This is because the derivation does not have any  $\bar{A}$ -chain to evaluate, in contrast with the derivation of non-subject *Wh*-movement. Thus the only complementizer form is  $\bar{a}t\bar{i}$ .

The prediction is, then, that free alternation re-emerges if a *Wh*-adjunct is extracted in a long-distance way, because this forms  $\bar{A}$ -chain in the matrix clause. This predication is borne out.

(7.116) *ká bē; àl̄/àt̄i fū wè:nì àyīn Àt̄im nàyì Àm̄ðak t;?*  
 F where C you said C Àt̄im hit Àm̄ðak  
 ‘Where did you say that Àt̄im hit Àm̄ðak?’

### 7.5.6 Some Loose Ends and Remaining Issues

Finally, I would like list some examples that I did not deal with in this chapter. These are temporal and conditional adjunct clauses briefly described in Richards (2003). Due to lack of sufficient data, I just describe the facts building on Richards (2003).<sup>30</sup> These constructions also contain instances  $(\bar{a})l̄/(\bar{a})t̄i$ .

(7.117) Buli: Temporal Clauses (Richards 2003)

- a. *ḡ b̄òró á sē yérí t̄i Àt̄im j̄àm.*  
 I Prog.Pst Asp build house(Id) C Àt̄im came  
 ‘When Àt̄im came, I was building a house.’
- b. *Àt̄im l̄i j̄àm l̄ă l̄i/\*t̄i ḡ b̄òró á sē yérí.*  
 Àt̄im C came Dem LI/C I Prog.Pst Asp build house(Id)  
 ‘When Àt̄im came, I was building a house.’
- c. *Àt̄im l̄i j̄àm l̄ă ḡ t̄i sé yérí.*  
 Àt̄im C came Dem I Cnterf build house(Id)  
 ‘When Àt̄im came, I should have built a house (but didn’t).’

(7.118) Buli: Conditional Clauses (Richards 2003)

- a. *wónnì d̄ă mw̄òk ḡm̄òr̄òkw l̄i n̄i.*  
 sky DIN red rain will fall  
 ‘If the sky is red, it will rain.’

<sup>30</sup>All data are cited from Richards (2003) unless otherwise noted.

- b. wónní dā mwòk **kāmā** ηmòròkw tì lî nî.  
 sky DIN red FACT rain Cnterf will fall  
 ‘If the sky were red, it would rain.’
- c. wónní dā mwòk **lāmā**, ηmòròkw tì nî.  
 sky DIN red FACT rain Cnterf fall  
 ‘If the sky were red, it would rain (but it isn’t).’
- (7.119) a. Àtìm lî jàm lva lî ò sè yérí.  
 Àtìm C came Dem LI 1Sg. built house  
 ‘When Àtìm came, I had built a house.’
- b. Àtìm lî jàm lva lî ò sè yérí.  
 Àtìm C came Dem LI 1Sg. built house  
 ‘When Àtìm came, I had built a house.’
- c. Àtìm lî jàm lva tì ò sè yérí.  
 Àtìm C came Dem TI 1Sg. built house  
 ‘When/Because Àtìm came, I had built a house.’

An investigation of the more detailed workings of these constructions and the nature of the C-elements therein is left for future research.

## 7.6 Haitian Creole: A Comparative Perspective

Haitian Creole also exhibits Op-C agreement phenomena with similar but distinct properties. In this section, I will show how the proposed approach extends to a language other than Bùlì, building on the study by Takahashi and Gracanin (2004). Although Takahashi and Gracanin (2004) develop a different analysis that involves  $\phi$ -features on C, I would like to show that the locality-based approach proposed for Bùlì is also able to explain the data.<sup>31</sup>

Op-C agreement in Haitian Creole is simpler than that of Bùlì in a number of respects. First, a gross generalization is that local subject extraction requires the complementizer *ki*, whereas all other extractions select a null complementizer  $\emptyset$ .

(7.120) Haitian Creole (Takahashi and Gracanin 2004)

- a. Local Subject Extraction  
 Klès \*(**ki**) te wè Mari?  
 who C Ant see Mary  
 ‘Who saw Mary?’
- b. Local Non-Subject Extraction  
 Kilès (**\*ki**) Mari te wè?  
 who C Mary Ant saw

<sup>31</sup>Special thanks to Shoichi Takahashi for discussing the data with me.

'Who did Mary saw?'

(7.121) Haitian Creole

- a. C is realized as *ki* if the EPP of C is satisfied by the closest category.
- b. C is realized as  $\emptyset$  if the EPP of C is satisfied by a non-local category.

This approach naturally explains the patterns of Op-C agreement under long-distance  $\bar{A}$ -dependencies. As Takahashi and Gracanin (2004) observe, in Haitian Creole, in contrast with Bùlì, *ki* appears only in the clause where the initial extraction takes place. This is exactly opposite to Bùlì, which manifests Op-C agreement in the highest clause –the clause in which the operator ends up.

(7.122) Haitian Creole (Takahashi and Gracanin 2004)

- a. Long-Distance Subject Extraction  
 Kilès (\***ki**) Maripanse \*(**ki**) renmen Jan?  
 who C Mary think C like Jan  
 'Who does Mary think loves Jan?'
- b. Long-Distance Non-Subject Extraction  
 Kilès (\***ki**) Maripanse (\***ki**) Jan renmen?  
 who C Mary think C Jan like  
 'Who does Mary think Jan loves?'

(7.123) Haitian Creole (Takahashi and Gracanin 2004)

Kilès (\***ki**) Michelpanse (\***ki**) Mari kwè \*(**ki**) rich?  
 who C Michel think C Mary believe C rich  
 'Who does Michel think Mary believes is rich?'

The locality-based approach expects that long-distance subject *Wh*-extraction will require *ki* in both the embedded and the matrix clauses if there is no overt subject in the matrix clause. This is because in such a configuration, extraction is local for the EPP of both Cs. The expectation is again fulfilled.<sup>32</sup>

(7.124) Haitian Creole (Takahashi and Gracanin 2004)

<sup>32</sup>The verb *sanble* has been supposed to allow a null expletive as shown below.

(i) Haitian Creole (Deprez 1992)

Jan sanble (ke) li te vini nan fèt la.  
 Jan seem C 3Sg. Ant come to party D

'Jan seemed to come to the party.'

The question is whether (7.123) involves raising or just *Wh*-movement. Either way, our locality-based theory predicts that *ki* is obligatory for the matrix clause, since the *Wh*-phrase is the closest category to satisfy EPP of C, given that a pro, if any, is phonologically null and hence is unable to satisfy EPP.

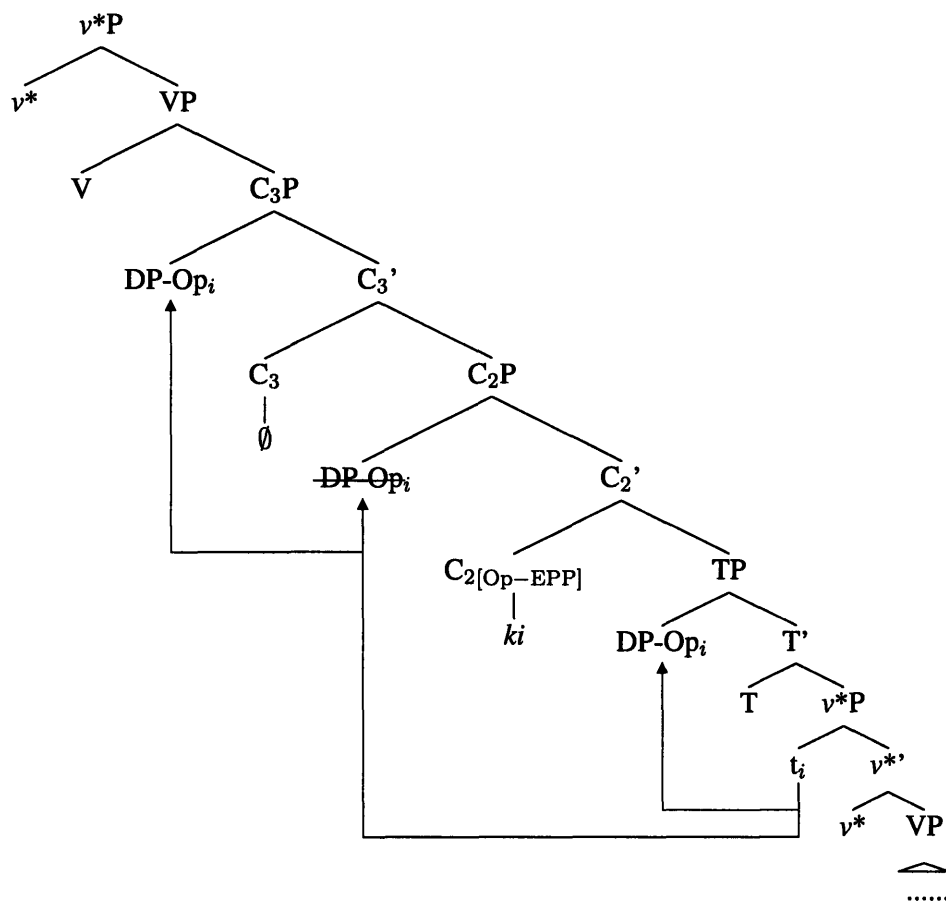
Kimoun **ki** sanble **ki** te vini nan fèt la?  
 who C seem C Ant come to party D

‘Who seemed to come to the party?’

This is expected if Haitian Creole evaluates locality at each Transfer whether or not the head of the chain is null. In other words, Op-C agreement in Haitian Creole is insensitive to whether an element in [Spec, CP] is null or not.

Consider the derivation below.

(7.125) Intermediate Positions and Op-C Agreement



Suppose, as in the case of Bùlì, that Transfer applies to C<sub>3</sub>P and locality is evaluated at this point. Since the algorithm (7.121) is not sensitive to the phonological content of the element occupying

[Spec, C<sub>2</sub>P], the position counts as local and C is realized as *ki*.<sup>333435</sup>

<sup>33</sup>Another possibility is that Haitian Creole does not allow a C<sub>3</sub> layer in successive-cyclic *Wh*-movement. In fact, there does not seem to be a case where a *Wh*-phrase is moved internally to a clause which is headed by the declarative complementizer *ke*. If that is the case, again, *ki* is predicted in the original clause, while all the other clauses through which the *Wh*-phrase moves realize a null C form.

<sup>34</sup>Takahashi and Gracanin (2004) note that there are speakers who find optional *ki* in long-distance extraction (see DeGraff 1993, 80).

- (i) Haitian Creole (DeGraff 1993, 80)

Kimou ou kwè (ki) pral vini?  
 who you believe C will come

‘Who do you believe will come?’

I assume that the optionality is a result of the option of externally merging a *Wh*-phrase to [Spec, CP] of a declarative clause for such speakers. In that case, the EPP of C has not been satisfied by the closest category in its domain and in this sense, it is “non-local”. Thus, an empty C is called for. This option is not available, naturally, for embedded interrogative clauses or matrix clauses, given that such an External Merge cannot value the Op-feature on the probe C, because the *Wh*-phrase is not in the domain of C. See McCloskey (2002) for similar claims and data in Irish.

<sup>35</sup>Chamorro and Palauan show three-way Op-C agreement, which is fairly complex.

- (7.1) Palauan

- a. (Chung and Georgopoulos (1988))

a bung el l-ulemdasu a delak el l-omekeroul a Remy  
 a flower C AGR(WH.NONSUBJ).3-thought.IR a mother C AGR(WH.NONSUBJ).3-grow.IR a Remy  
 ‘the flowers that my mother thought that Remy was growing’

- b. (Chung and Georgopoulos (1988))

a test el mengesireng el ble  
 a test C AGR(WH.SUBJ).surprising.R that AGR(WH.NONSUBJ).have.IR  
 lepas a Roy  
 AGR(WH.NONSUBJ).3.pass.IR a Roy  
 ‘the test that it is surprising that Roy passed’

- c. (Georgopoulos (1991a))

ng-te’a al-ilsa a Mariam el milnguiu er a buk er ngii  
 CL who IR3-PF-see Miriam C R-IM-read P book P her  
 ‘Whødid Mirium see reading her book?’

Based on these facts, Chung and Georgopoulos (1988) propose that *Wh*-Agreement in Palauan (and Chamorro) is determined by the grammatical function of the extracted element with

- (7.2) *Wh*-Agreement (Chung and Georgopoulos (1988)) (first version)

A verb agrees in grammatical function with a constituent that is dependent on it.

- (7.3) *Wh*-Agreement (Chung and Georgopoulos (1988)) (revised version)

A verb agrees in grammatical function with a constituent that is dependent on it and contains a gap.

I will leave for future research an investigation of the Chamorro data, although I believe that the core part of the mechanism proposed in this chapter will cover the Chamorro Op-C agreement system.



## 7.7 Concluding Remarks

In this chapter, I have argued that complementizer selection under Op-C agreement in Bùlì is determined by locality on C's EPP satisfaction. The complementizer is realized as *àlì* only if C's EPP is satisfied locally. On the other hand, it is realized as *àtì* when local EPP satisfaction fails; that is, when C's EPP is satisfied non-locally. I have shown that this is exactly what happens in Relativization/Factives in Bùlì. In contrast, complementizer selection is more relaxed in *Wh*-question and Focus. I have attributed this asymmetry to a parametrization of C in Bùlì (i.e.  $C_{[EPP,Op]}$  vs.  $C_{[Op-EPP]}$ ) and proposed that C in *Wh*-Questions and Focus differs from C in Relativization/Factives in that the former does not allow EPP to be split from Op. I have proposed a parametrization of C, which correctly captures the cluster of differences between Relativization/Factives and *Wh*/Focus constructions. Our theory thus succeeds in attaining a higher explanatory adequacy by eliminating reference to grammatical functions and Spec-Head relations, while achieving wider empirical adequacy.

There are some issues, however, that have not been given sufficient answers in this chapter. The first question is where the proposed asymmetries between relative clauses/factives and *Wh*/Focus constructions come from and whether there is any principled reason behind them. Although we did not address this issue above, one possible line of reasoning would be that these asymmetries are derived from a difference in the syntactic structure: while relative and factive clauses in Bùlì are quite likely to be monoclausal CPs, *Wh*/Focus constructions could have a biclausal structure. Incidentally, *Wh*/Focus constructions in Bùlì contrast with Relative/Factive constructions in that the former make use of the particle *ká*, which is homophonous with the copula. I will leave this for future research, noting that there lie numerous challenging issues to be handled. Another important question to think about is what it ultimately means to say that the morphological realization of Op-C Agreement is conditioned by the locality of EPP saturation and how we can formalize the mechanism of locality of EPP and its morphological Spell-Out. Ultimately, we need to formalize the mechanism of this correlation, but I leave it for future research.

We have also demonstrated that there are various asymmetries between relativization/factives and *Wh*/Focus. At this point, we have no evidence to suggest whether this split reflects some yet unknown principle. In other words, it remains to be investigated whether there is any language where relativization/factives pattern with *Wh*-Questions, excluding Focus, and vice versa.



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