

# Two Types of Dependency

by

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A Dissertation Presented to the  
Faculty of the Graduate School  
UNIVERSITY OF SOUTHERN CALIFORNIA  
In Partial Fulfillment of the  
Requirements for the Degree  
Doctor of Philosophy  
(Linguistics)

August 1998

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This is the version prepared for the GSIL Publications.\* I have corrected some mistakes found in the original version submitted to the university, and revised several portions of it for the expository purposes. The page formatting is also different from the original one, and I will refer to the page numbers of this version in my future works.

Ayumi Ueyama  
August 28, 1998

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\* 'GSIL' stands for 'the Graduate Students in Linguistics', an organization in Linguistics Department, University of Southern California. The reference for this dissertation will be as follows:

Ueyama, Ayumi (1998) *Two Types of Dependency*, Doctoral dissertation, University of Southern California, distributed by GSIL publications, USC, Los Angeles.

# Acknowledgments

## 1. Acknowledgments specifically for this thesis

I wish to thank the members of my committee—Hajime Hoji (chair), Hagit Borer, Nam-kil Kim, Audrey Li, Barry Schein, and Karina Wilkinson—who have given me valuable suggestions on the earlier versions of this thesis.

First of all, I am so much grateful to Hajime Hoji for the extensive discussion on the relevant materials and for his suggestions on how each argument should be presented. Since many of the observations and analyses reported in this thesis have been formed during the course of informal discussion with him starting 1995, I in fact cannot tell how much I owe him. I am responsible for choosing the specific generalizations and analyses shown in this thesis from among many other alternatives which may have appeared in our discussion. But some of the core claims presented in this thesis originated in him (see section 3.4.2 in chapter 3), and some other ideas which I consider developed in me might have been largely affected by his view of Grammar, since most of the arguments in this thesis (including the counter-arguments to his former claims) have been formed as the result of my attempt to see what his theory of Grammar aims to describe. This work would not have come into existence without him.

I learned from Barry Schein in what points the unselective binding approach is inadequate in understanding the nature of donkey anaphora. He made me realize that my rough view at an earlier stage (January 1997) was more in lines with Evans 1980 than with Heim 1982, which eventually resulted in the characterization of the E-type pronoun as presented in current chapter 5. He has also pointed out to me since December 1997 that my approach would not be justified unless I could provide an analysis of paycheck sentences. I regret that I could not discuss convincingly in this thesis why paycheck sentences are simply put outside of the scope of this work, but the relevant remark is found in footnote 1 in chapter 1.

Chapter 2 was added to an earlier version (November 1997) after Hagit Borer had advised me to be more considerate to non-Japanese readers. The initial intention in adding this chapter was therefore to lay out the facts familiar within Japanese linguistics and to present my analysis of the so-called scrambling construction as the background for the main discussion in the subsequent chapters. But since I do not share many of the prevailing assumptions in Japanese linguistics, I have felt compelled to justify my view concerning various points discussed in chapter 2. As a result, the chapter has ended up containing much more information than a non-Japanese linguist would need. Hagit has also suggested to me that I should add some discussion regarding how my analysis of the so-called Japanese scrambling construction would extend to other languages such as German. Since only a

particular aspect of my analysis of the scrambling construction is relevant to the main claims of this thesis, however, I have decided not to discuss the possible extensions of my analysis of the so-called Japanese scrambling construction to other languages. I plan to address the relevant questions when I present my analysis in a full-fledged form in a separate work.

Audrey Li, Karina Wilkinson, and Nam-kil Kim have pointed out to me a number of places where I had not made myself clear. I apologize that I could not consult with them enough regarding the final version of this thesis. There is a good possibility that they are not content with some, or possibly many, portions of this work.

Yukinori Takubo (Kyushu University) and Satoshi Kinsui (Osaka University) have visited USC several times, and I benefited a great deal from the discussion with them. As mentioned in chapters 4-6, part of the theory proposed in this thesis was inspired by their works. I have restated their ideas in my terms so that they can fit into the entire mechanism that I propose here; I hope that the reinterpretation has not distorted their original spirit too much.

Yoshihisa Kitagawa (Indiana University) and Noriko Yoshimura (University of Shizuoka) have given me detailed comments on chapter 2 of an earlier version (May 1998). I especially thank them for their patience in correcting my misunderstandings of their analyses.

I am also grateful to other linguists who have given me helpful suggestions on portions of this work at various stages of its production. They include J.-R. Hayashishita, James Higginbotham, Chris Kennedy, Robert May, Ken Safir, Roger Schwarzschild. In addition, I have benefited from comments by Joseph Aoun, Ikumi Imani, Hiroshi Mito, Ai Kawazoe, Soowon Kim, Anoop Mahajan, Yuki Matsuda, Keiko Miyagawa, Toshiyuki Ogihara, Koichi Takezawa, and the audiences at Kyushu University, University of Tokyo, Kanda University of International Studies, and the workshops for the Joint Research, Monbusho International Scientific Research Program. I am grateful to Yukiko Tsuboi, Hua Lin, and Ai Kawazoe for proof-reading the version submitted to the university. The discussion with Yukiko Tsuboi has been especially helpful in preparing this GSIL version.

## 2. Acknowledgments for my academic life so far

I would like to divide my years in the linguistic field into five periods according to my academic affiliation, and mention the names of the people to whom I am particularly indebted. I apologize that I cannot list all the people that I am thankful to.

### 2.1. University of Southern California (1995-1998)

I met Hajime Hoji in 1990 in Japan, when I was impressed by his enthusiasm on the research of the nature of language. It however took me several years since then before I became his advisee; but I would like to believe that those

years were necessary for me to get prepared for working with him.

There was an opportunity in 1994 in which I had intensive discussion with him on his talk (Hoji 1995a) over twenty hours (or more) during a period of a few days. At that time, Grammar was something that was too abstract for me to feel or see; but he seemed to me to examine it with his own eyes in his mind, which surprised me a great deal. After that, I gradually got convinced that he would let me see the formal Grammar in my mind based on the sense experiences that I can feel. Now that I have caught the sight of the Grammar in myself, I understand anew that the goal of linguistics is to reveal the structure of the Grammar in our mind in its entirety.

During the past three years, we have spent enormous amount of time discussing various linguistic issues, sometimes on his topics, and sometimes on mine. We normally disagree with each other at the outset, but in most cases we end up sharing some ideas. Such a process itself has provided an invaluable experience for me to think about the scientific approach to language in general, and to enhance my understanding of the nature of the Grammar and its interaction with other faculties in our mind.

Hajime has also taught me a great deal about how the materials should be presented and how the ideas should be stated in order to increase readability. In particular, he checked and corrected every page of an earlier version (November 1997) of this thesis, for which I do not know how I can thank him. I wish that the final version had been written better, so that I could say without hesitation that "I am grateful to Hajime Hoji for teaching me how to present the materials clearly." I have tried my best, but I do not think that I have been successful enough. Let me say just vaguely instead: I thank Hajime Hoji for everything that he has taught me.

I would like to thank other faculty members at USC for providing a viewpoint different from Hajime's. They include Barry Schein, Audrey Li, Karina Wilkinson, Hagit Borer, Joseph Aoun, Jean-Roger Vergnaud, and Maria-Luisa Zubizarreta.

My life in Los Angeles would have been much harder if it were not for many friends who helped me on various occasions. Yuki Matsuda deserves special mention. She let me stay in her apartment room for a couple of weeks while I was looking for my room, and took me to the various places that one should know in order to live pleasantly in LA. I am glad that I spent my three years at USC with J.-R. Hayashishita as classmates. Not only that I always enjoyed the conversation with him, his positive belief (that one can always make a progress) has encouraged me so many times. I also thank him for throwing a nice post-defense champagne party for me. I appreciate the friendship of my fellow students: Hiroshi Aoyagi, Daisuke Bekki, Lina Choueiri, Teruhiko Fukaya, Shadi Ganjabi, Elena Herburger, Akemi Kagawa, Akira Kashima, Ai Kawazoe, Grace Hui-ju Li, Keiko Miyagawa, Hongkeun Park, Patricia Schneider-Zioga, Antonella Vecchiato, Maki Watanabe, Shin Watanabe, and Zoe Xiu-zhi Wu. Many thanks go to Yukiko Tsuboi and Hua Lin for cooking me delicious dinners when my life was hectic at the final stage

of the thesis-writing. I am so grateful to Laura Reiter, who has always been supportive; without her help, I could not have graduated USC in three years.

Finally I thank the University of Southern California for the Merit Fellowship which financially supported me during the years.

## **2.2. Massachusetts Institute of Technology (1994-1995)**

I am much indebted to Shigeru Miyagawa for helping me with the opportunity to study at MIT for a year as a visiting scholar.

I would like to thank Kai von Fintel, David Pesetsky, Noam Chomsky, Roger Schwarzschild, Ken Hale, Alec Marantz, Morris Halle, and Michael Kenstowicz for letting me attend their classes, ask many questions, and even submit homework. In particular, I was very much impressed by Kai's semantics course and David's syntax course: but for those courses, certainly my understanding of the previous works in linguistics should have been much less complete and significantly more inaccurate. I did not have the chance to talk to Noam Chomsky in person during the year, but it was an invaluable experience for me to be in his class when he lectured on the content of chapter 4 of Chomsky 1995.

I am grateful to the people who were officially enrolled in those classes for treating me as if I were their classmate. Especially I would like to thank Hooi Ling Soh for her friendship: I really enjoyed talking with her on linguistic issues and on Chinese foods.

Special thanks go to my apartmentmates during the year: Danny Fox, Jonathan Bobaljik, Uli Sauerland, and Susi Wurmbrand. They were always nice and considerate, and my awkward feelings as an 'outsider' was minimized by their warmth.

## **2.3. University of Rochester (1993-1994)**

I owe Yoshi Kitagawa so much that I can describe here only a very small portion of what I owe him.

I met him in 1990 at a workshop held at Tilburg University (Holland). At that time I was in great trouble being at a loss how I should proceed further with the research in theoretical linguistics. He kindly gave me a helping hand, and strongly recommended that I should apply for a graduate school in the United States so that I could start learning linguistic theory from scratch. Not knowing what it was going to be like to study abroad, I could not make up my mind immediately. But after a few years I finally reached the conclusion that it would be the only way for me to survive as a linguist. Without his patient support and encouragement, I could not have come to the United States leaving my family in Japan, and I would have given up linguistics by now.

The Department of Linguistics at the University of Rochester was small in size but well united both academically and non-academically. I learned a lot from the well-organized lectures by Yoshi Kitagawa, Peter Laserson, Greg Carlson, and Itziar Laka. In addition, I was really lucky that I could start my life in the States with Jen Ting as my roommate. Although I am older than

her in the biological age, she always supported me just like an elder sister, and I was dependent on her in many aspects of my life then. I also would like to thank the friendship of my fellow students there including Xiao Lu, Montserat Sanz, Yutaka Osugi, Naoya Fujita, and Koji Hoshi, just to mention a few.

I am grateful to the University of Rochester for the Sproull University Fellowships which financially supported me during the year.

I did not expect (and neither did Yoshi) that he should leave for Indiana University at the end of my first year. I am grateful that he recommended me to study at MIT for a year, so that I could choose my way again at the end of the second year. Although it turned out that I could work with him for only a year, he has always been very supportive, and I will be grateful to him forever.

#### 2.4. Kyoto University of Foreign Studies (1991-1993)

I was a full-time lecturer at Kyoto University of Foreign Studies for two years before I made up my mind to apply for a graduate school in the United States. I would like to thank each of the faculty members there for their hospitality and generosity in allowing me to leave the university, understanding my selfish wish to study once again.

#### 2.5. Kyoto University (1981-1991)

I became acquainted with the generative enterprise in the lecture given by Prof. Masanori Suiko in 1982. I am grateful to him for holding a reading group on generative syntax, where I could learn some of the fundamental arguments before the GB framework.

I wish to thank Profs. Tatsuo Nishida, Akihiro Sato, and Kazuhiko Yoshida for the instructions over the years while I was a student at the Department of Linguistics at Kyoto University. During those years, I could learn the basics of general linguistics, without which my perspective into the linguistic issues would have been much narrower. While Prof. Nishida's own research interests are in the historical change and the comparison among Sino-Tibetan languages, he was always open-minded and supportive to the students who are interested in other theories of linguistics. I could continue studying generative grammar thanks to the liberal atmosphere of the department.

I often had to bother linguists outside Kyoto University for advice, such as Nobuko Hasegawa, Heizo Nakajima, Taisuke Nishigauchi, Koichi Takezawa, Yukinori Takubo, and Koichi Tateishi, to mention a few, to whom I would like to express my deepest gratitude, for kindly answering my endless questions and for giving me advice.

#### 2.6.

Needless to say, I could not have survived the five years in the United States without the understanding and the support by my (current and future) family. I must apologize to them for the various kinds of anxiety which must have been

caused by my abrupt decision to study abroad. I wish that we will share the delight of this accomplishment soon.

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## List of Abbreviations and Terms

### Abbreviations Used in Word-by-word Glosses

ACC	accusative case-marker
COMP	complementizer
DAT	dative case-marker
GEN	genitive case-marker
NOM	nominative case-marker
Q	question morpheme
TOP	topic marker

### Existing Terms (and the sections where their characterizations are discussed)

bound variables	.....	Sections 5.1.2, 5.3.2, Appendix E.
discourse structure	.....	Sections 5.2.2.3, Appendix E.
free variables	.....	Sections 5.2.2, 5.2.3, 5.3.3, 5.3.4.
LF	.....	Sections 1.3.4.2, 5.1.1.
numeration	.....	Sections 1.3.2, 4.3.1, 5.3.3.1, 6.2.1.
PF	.....	Sections 1.3.4.1, 2.5.3, A.4, 3.3, 5.3.3.1.
QR [Quantifier Raising]	.....	Sections 1.3.3.2, 5.1.2, 6.2.2.

### Created Terms (and the sections in which their characterizations are given)

A-type QPs	.....	Sections 3.1, 3.4.1.
<i>a</i> -words	.....	Sections 1.4.2, 4.2.1.
B-type QPs	.....	Sections 3.1, 3.4.1.
co-D-indexation	.....	Sections 4.3.2, C.3, 5.3.3.1.
co-I-indexation	.....	Sections 5.2.2, 5.3.3, 5.3.4.
Deep DL	.....	Sections 2.1, 2.5.1, 2.5.2, 3.4.3.2.
Deep OS-type	.....	Sections 2.1, 2.5.1, 2.5.2, 3.4.3.2.
D-index	.....	Sections 4.3, 5.3.2.2, 5.3.3.1.
DL	.....	Section 2.1.
EQR	.....	Sections 5.3.4.2, 6.2.2.
FD [Formal Dependency]	.....	Sections 3.3, 4.4, 5.3.2, 6.1.4.2, 6.2.3.
I-index	.....	Sections 5.1.2, 5.2, 5.3.3, 5.3.4, 6.1.4.1, 6.1.4.3, 6.2.5.
ID [Indexical Dependency]	.....	Sections 3.3, 4.4, 5.3.3, 6.1.4.3, 6.2.3.
<sup>large</sup> NP	.....	Sections 3.1, 3.4.1, 5.3.2.1.
non-individual-denoting <i>so</i> -words	.....	Appendix D
OS-type	.....	Chapter 2 (especially section 2.1), sections 3.2.3, 3.2.4, 3.4.3.
semantic categories	.....	Sections 5.1.1, 6.2.1, 6.2.2.
<sup>small</sup> NP	.....	Sections 3.1, 3.4.1, 5.3.2.1.
SO-type	.....	Sections 2.1, 3.2.1, 3.2.2.
<i>so</i> -words	.....	Sections 1.4.2, 4.2.2, 5.2.2.1, Appendix D.

SR [Semantic Representation]	.....	Sections 1.3.4.2, 5.1.1, 6.2.4, 6.2.5.
Surface DL	.....	Sections 2.1, 2.5.1, 2.5.3, 3.2.3, 3.2.4, 3.4.3.1.
Surface OS-type	.....	Sections 2.1, 2.5.1, 2.5.3, 3.2.3, 3.2.4, 3.4.3.1.

### Descriptive Names of Phenomena (and the sections where they are discussed)

BVA [bound variable anaphora]	.....	Sections 1.1, 5.3.2, 5.3.4, 6.1.2, chapter 3, Appendix E.
condition C/D effects	.....	Section A.3.2, B.1.2, B.1.4, Appendix C.
coreference	.....	Section 1.1, 6.1.3, chapter 4.
donkey sentences	.....	Section 5.3.3.4, Appendix E.
E-type links	.....	Sections 1.1, 5.2, 5.3.3, 6.1.4.1.
major object	.....	Section A.1
paycheck sentences	.....	Section 1.1 (footnote 1)
proper binding violations	.....	Sections 2.2.3, A.4.1, B.1.3, B.1.4.
reconstruction effects	.....	Sections 2.2.2, 2.2.3, A.3.2, 3.1, 3.2.4, 3.4.3.2, 4.4.
referential circularity	.....	Section 4.4.3.
resumption	.....	Sections A.2, B.1.1, B.1.4.
SCO [strong crossover]	.....	Section 3.4.4.
scrambling	.....	Chapter 2, sections 3.2.3, 3.2.4, 3.4.3.
Spec-binding	.....	Section 2.2.1 (footnote 7)
subjacency effects	.....	Sections 2.1, 2.5.3, A.4.
telescoping	.....	Section 5.3.4.4.
WCO [weak crossover]	.....	Sections 2.2.1, A.3.1, 3.1, 3.2.3, 3.4.3.1, E.3.

### Previous Analyses (and the sections in which some review is given)

Chierchia 1992	.....	Appendix E, Section 5.2.3.3.
Evans 1980	.....	Appendix C, Section 5.2.3.
Fiengo & May 1994	.....	Section 4.4.3.
Heim 1982	.....	Appendix E.
Higginbotham 1983	.....	Section 4.4.3.
Hoji 1995a	.....	Section 3.4.2.
Kitagawa 1990	.....	Section B.1.2.
Kuroda 1988	.....	Section B.2.1.
Reinhart 1983ab	.....	Section 4.5.
Saito 1985	.....	Section B.1.1.
Saito 1992	.....	Sections B.1.4, 3.4.3.
Takubo & Kinsui 1996	.....	Sections 4.2, 4.3.1, 5.1.2, 6.3
Yoshimura 1992	.....	Sections B.1.3, 3.4.3.

## Abstract

The aim of this thesis is to examine the linguistic conditions on anaphoric relations between two linguistic expressions  $\alpha$  and  $\beta$ , and to present a theory of Grammar which generates the output representations based on which  $\alpha$  and  $\beta$  can be related to the same individual(s).

Chapter 2 provides background discussion for the remainder of the thesis. It is shown that the so-called scrambling construction in Japanese is structurally two-way ambiguous; one type of this construction (which shall be called *Surface OS-type*) is crucially used to argue for the claims to be proposed in the subsequent chapters.

Chapters 3 and 4 demonstrate that anaphoric relations are divided into three types when we examine the structural condition for its availability. I thus propose three formal relations that provide basis for an anaphoric relation; they are (i) Formal Dependency (which is contingent upon LF c-command), (ii) co-I-indexation (which has to satisfy the PF precedence requirement in case the antecedent and the dependent term are in the same sentence), and (iii) co-D-indexation (the establishment of which is not syntactically constrained in principle).

Chapter 5 considers how these three relations are to be interpreted. I claim that Formal Dependency is basically mapped to bound variable anaphora, while co-I-indexation forms an E-type link, assuming the characterization of an E-type link in lines with Evans 1980. These two relations are *dependencies* in the sense that the dependent term can be interpreted only if there is a linguistic antecedent. Co-D-indexation, on the other hand, is not a dependency, and the two co-D-indexed expressions are simply independently referential.

Chapter 6 summarizes the proposals, and discusses further issues on the organization of Grammar.