# Table of Contents

**Dedication**  
i

**Acknowledgements**  
vii

**COMP -Ko as Inherent Accusative Marker**  
Yongkil Jeong  
1

**Serial Verb Construction in Korean**  
Jae-yoon Kim  
41

**Comments on Verb Raising in Japanese and Korean**  
Soowon Kim  
78

**Proposal for an Experiment on SU, DO and IO Relative Clause Acquisition in French**  
Jennifer A. Loveless  
100

**Constraints on wordfinal schwa loss in Middle High German**  
Renata Raffelsiefen  
119

**Da, Desu, Desho: Some Asymmetries in Japanese Copula Construction**  
Tatsuya Suzuki  
165

**Relative that is a wh-operator**  
Gabriel Webster  
185

**What to Do With Asian Anaphors?**  
Tom Wylie  
199
Dedication

This volume of UW Working Papers in Linguistics is dedicated to Dr. Heles Contreras. During his 34 years at UW, Heles has been a tremendous guide and mentor for his students. We thank you, Heles, for your dedication to our success and development.

What follows on these pages are a few words from just a handful of the many students whose lives have been touched by Heles Contreras over the course of his career:

Dear Heles,

As you begin to look back on your work as teacher and researcher, I hope you will look back to that summer in Ottawa when we were housemates. You taught an excellent seminar on Government-Binding theory at the University of Ottawa in the way you always taught new theoretical advances. You presented the material clearly, but added questions that would drive the students to begin to look beyond the newness to the language issues that were not resolved. Your grasp of grammar and theory were clear and always helpful.

And maybe you can remember all the time you had to spend helping me make my thesis into something that was clear and consistent. I remember that time! And through that process I learned a lot about writing coherently yet with a view to moving things forward.

Thank you for your many hours as my teacher and helper and friend. You were always an encouragement to me. I do hope that your semi-retirement plans may allow you to return to Eastern Ontario. This time, you can visit and just relax.

Peace and good health. May your appetite for truth not diminish.

Dear Heles,

Thanks so much for all your support throughout the last three years. As a new grad student I had no idea what I was doing or whether I was doing it right. You were always a rock of support and your door was always open. Your office may be filled, but your place won't be.

Heles has meant so much to me in my career that it's difficult for me to express. I first had him in 463 in the Spring of 1987 and was immediately impressed by the breadth and depth of his knowledge and his Socratic teaching style. After that I took or audited every seminar he taught. Heles is the rare sort of professor who can supportively challenge his students; in other words, he demands the best from them, but he is always available to work with them. After all these years, I still email syntax questions to him when I need clarification on a theoretical point, and he's never failed to help me out. I'll never know how he finds the time to read everything he does!
I remember attending an LSRL a few years back in El Paso. I was terrified of giving my paper (on Old French genitive constructions, of all things!) in front of a packed room that included such luminaries as Carlos Otero and Dennis Bouchard, but Heles radiated such confidence at me from the audience that I managed to get through it. After the requisite grueling question period, I wanted to disappear into a black hole. I sat down in front of Heles, and he leaned over and said, "Good job." His characteristically taciturn praise was the highlight of the conference for me, and I have never forgotten it.

In a very real sense, I will always be Heles' student. Thank you, Heles, for everything!

I will always remember Heles for his excellent teaching, his intellectual honesty, and his entrañable (can't possibly translate this) personality. Gracias por darnos una vida de ejemplo de integridad intelectual y personal.

Va por ti, maestro.

Dear Professor Contreras,

Even though I was never very good at syntax, I thoroughly enjoyed your Spanish Syntax class. I wish I had taken more of your classes while I had the chance. Everyone in the Linguistics Department will surely miss you!

Take care and enjoy your retirement!!

I came out to Seattle about three months before my first quarter began in order to get acquainted with the area and the Linguistics department. I had an appointment with Heles to set up my schedule for the fall (and ask any last-minute panic questions). Heles was my first impression of the Linguistics department—he was friendly and seemed interested in what I had to say, and HE DIDN'T STOP SMILING!! And now that I've been here for a year, I can confirm: HE DOESN'T STOP SMILING!! Has anybody else noticed this phenomenon? The impression Heles gave me at our first meeting helped ease my anxieties of leaving my career to become a full-time student again. Thank you, Heles!

It was my first quarter at the UW in 1990 and I was still in the process of adapting to the new environment. With a new friend I read Cinque's A'-Syntax and somehow Heles joined us and we met regularly to discuss the book. At one of those meetings I presented what I thought was a particularly nice and elegant account of some phenomena in German. I was excited about this idea, things seemed to fall so nicely into place, I thought I was really on to something. Not more than five minutes into presenting, Heles calmly pointed out that the word order came out wrong - and sure enough, it did. Not just in some cases, but across the board. I had ended up predicting word order phenomena that were quite unlike anything in German. Needless to say, my ears turned the color of Mt. Vernon tulips and my embarrassment was complete. Heles asked me to continue, though, as if nothing special had happened. He still considered the idea as a possible application of Cinque's model, even though it didn't work the way I intended at all. I was struck by this respect for a
rather wild and backfiring speculation. In the many seminars taught by Heles that I took after this episode, this initial impression was confirmed over and over again. Heles takes his students and their ideas very seriously. I never even once saw him dismiss an idea quickly.

Later, when I TAed for Heles, I realized that the same kind of respect extended to teaching and to the cooperation with the TAs. Including the fact that Heles suggested a totally new concept for the introductory linguistics class, with guest lecturers from other departments. After so many years of teaching, an introductory class for him was still worth experimenting and improving on. I'm sure that no-one in the TA-team at that time will forget the enthusiasm he sparked in us for this new approach. Then there was the time when he attended an exam despite having terrible back pain, instead of rescheduling the exam and having the student go through the pre-exam anxieties again. Just another example in a long list.

I am very grateful for a teacher like Heles. He sets high intellectual standards. But even more than that, he does the same as a teacher and as a person.

---

Dear Heles,

You are the primary reason that I came to UW. I still remember how excited I was when I first met you. It was a great pleasure to take your very insightful and interesting seminars. Thank you very much!

---

Dear Heles,

In 461 and 462, you illuminated those complicated and confusing syntactic theories with creative examples and thought-provoking questions. In 508, you guided us through the maze of Chomsky's (and others) enigmatic theories with LOTS of patience and with those forever useful summaries and outlines. Through it all, you've always kept your sense of humor that makes our class fun and enjoyable. Thank you so much for giving me such a fun and challenging ride through the adventureland of syntax. You will be missed profoundly.

---

The first real seminar I took at UW was a two-quarter syntax seminar taught by Heles. The idea was that by the end of the first quarter we would produce an abstract that we would then turn into a full-fledged paper over the course of the second quarter. After struggling to find a topic all quarter, all that I had by the end was the tiniest germ of a bad idea. Heles was very encouraging however, gently suggesting some directions I could look in. Meanwhile, while I hardly noticed, I was learning more about syntax in that seminar than I thought possible. The key was Heles and the wonderful atmosphere of mutual learning that he fostered—treating everyone's questions and ideas with respect and consideration. By the end, under his quiet encouragement, I had turned that bad idea into a paper that became my Master's thesis. I think the most telling thing about that seminar is that Heles made it so much fun that everyone wanted to keep going when the quarter ended—and we did! The students in that seminar started the syntax roundtable, again with
lots of help from Heles. Thank you, Heles, for all your encouragement, intellect, and integrity.

"Heles, U Dub"

What is this? Why am I writing about it? Because, I think, it tells us something about Heles. It was four years ago when we were talking about a new t-shirt for our department. Since the previous one was the t-shirt for WECOL (which was held at the UW in '93), it was time for a new one, and everybody agreed. Although we had already had a couple of meetings and talked about some ideas, we didn't have a good one yet. At one meeting, one of our fellow students brought a new idea. It was something like this:

"Heles, U Dub"

All of us at the meeting were pretty sure that Heles wouldn't mind our making a t-shirt like this. Some of us even thought that he might like it. I also liked the idea and I agreed with others regarding Heles' reaction to the shirt, in spite of the fact that I had known him only for two quarters. I could tell he is such a person who accepts new/innovative ideas, no matter how strange they seem at first sight, just like when he teaches syntax. Unfortunately, the idea wasn't chosen, since we were making a departmental t-shirt, not for LSUW ("Heles, U Dub"). And no t-shirt was made with the design. Sorry Heles, if you don't like the idea. But this is a part of my memory at the UW and I also thought it is a good story which I should share with others on this occasion.

The very first course in linguistics that I took at the UW was Heles' seminar on the introduction to the Minimalist program (Ling 580). The content of the seminar was very difficult for me to follow because of the fact that I was not ready for taking such high level of class and because of Chomsky's book. Every time I attended class, I felt powerless, but I had to write a term paper for credit. So I tried my best, trying to draw trees for every example sentence and so on. But I still didn't know what topic to work on. Instead, all I had was too many questions. One day I visited him in his office, saying that I couldn't draw a tree for the 'believe' sentence even though I followed those defined movements! Heles then told me that I had found something interesting and that I should write a term paper about it. I was very encouraged by his words and wrote a paper on it with a lot of struggle. I tried hard to include my alternative analysis in the paper, but I thought it wasn't good enough after writing it up. But, to my surprise, he gave me a very good grade on my paper.
Again I was very encouraged by that and this experience made me feel much more positive in studying. So I was glad to have taken his class as my first linguistics class at the UW. Thank you so much for your encouragement, Heles.

I remember the course in Romance Linguistics that Heles was scheduled to teach in 1982 (or thereabouts). A fair number of us, perhaps six or eight, showed up the first day of class. Heles was prepared with an outline of the topics and papers we were to cover. But after looking around the room, he said, "I guess under the rules of the University, I can't teach this course--you're all auditors." And indeed none of us was signed up, we were all auditing--except me. So I had my personal class in Romance Linguistics, while everyone else audited it. And a good class it was--it is to this day one of my UW linguistics classes that stands out, rather than fading into the general background. Since I was the only non-auditor, Heles asked me to do a paper for the class and present it as one of the sessions. I won't claim that it was a great paper (it was an analysis of long distance wh-constructions in Spanish as binding of possibly null resumptive pronouns), but it was fun, and it almost turned into a thesis topic.

Thank you, Heles, for a great class!

I also took Phonology 451 from Heles, back in 1975. I can still recall him laboring to convince a rather stubborn student that voiceless unaspirated stops were distinct from voiced stops. As a native speaker of Spanish, it was no doubt painfully obvious to Heles, and it was clear enough to me (who had taken a course in phonetics the previous summer); but it was clearly non-obvious to the native speaker of English, who I think went away thinking that linguists were making this all up.

I can never thank Heles Contreras enough for the syntax classes I took with him and for serving as a reader on my dissertation committee. Even though linguistic theory has evolved since my Syntax I and II classes, the basics he so clearly taught me from Radford's textbook still help me in my preparation for teaching my own graduate linguistic classes today. He also is one of the kindest, most humble, down to earth people that it has been my privilege to know and I wish him the best of everything in his retirement.

Dear Heles,

I just want to tell you how lucky I feel to have been in your 400 class. It's taken me more than 25 years to finish a degree--I think I'd be without one still but for that class, no exaggeration.

You are a fine, fine teacher and person. I hope that you continue teaching, along with whatever else you wish to do, provided that it's exactly the amount you want to teach in exactly the way you want to do it.

I had the opportunity to have Professor Contreras for Linguistics 507 and 508. Although I consider myself to be "syntax impaired", I enjoyed these classes especially because of Professor Contreras' extraordinary and enthusiastic teaching abilities. I always left the
room convinced that syntax could be an earthly subject after all, plus amazed at how many usages Professor Contreras could find for the word "stuff" in syntactic theory.

To Heles,

I will never forget your inspiring and insightful lectures. Thank you for being always patient, understanding and encouraging. "Estoy segura de que ni la distancia ni el tiempo nos va a separar!"

Back in the days when students memorized a series of transformations to get from Deep Structure to Surface Structure, Heles was my first teacher of linguistics at UW. I remember him then as a good teacher, empathetic to student needs. When the class hit a learning snag, we were surprised and grateful for his willingness to reorganize the syllabus to accommodate our pace.

Good teaching is a hallmark of Heles’s career, also marked by the way he handled Linguistics 200 the final time it was his duty to teach the mass class. Instead of a easy rehash of previous quarters, he used the newest results, linguistic examples (like, duh), and tried innovative teaching techniques the peak of which required the whole class to get up during lecture and do fieldwork with each other.

Besides your distinguished career as a linguistics researcher, thanks, Heles, for your long career as a calm, dependable, cheerful, fine teacher.
Acknowledgements

We thank the following contributors to Friends of Linguistics
July 1, 1998 through May 11, 1999

James L. Armagost
G. Bruce Brown
Benjamin Sandor Creisler
Jeannette S. DeCarrico
Claire Engelbrecht
Anne V. Farrell
Michael Gamon
Nobuko Hasegawa
Hee-Bok Jung
Jack Odell Lawson
Masahiro Morikawa
Aki Helen Namioka
Barbara S. Pearson
Michael W. Reddell
Don Schafer
Maxine Florence Schmidt
Tatsuya Suzuki
Horng-Ming and Sun-Hui-Lin Wu
COMP -Ko as Inherent Accusative Marker

Yongkil Jeong
yongkil@u.washington.edu

1. Introduction

Based upon the fact that complementizer -ko and nominal accusative suffix -lul are licensed in complement to V but not in complement to N or in subject position, Jeong (1997) proposes that both -ko and -lul are associated with (structural) accusative. In this paper, I propose that -ko is associated with inherent accusative, whereas -lul is associated with structural accusative. This analysis of -ko and -lul is empirically supported by the fact that the former but not the latter is licensed by passivized verbs, given the widely accepted assumption that structural but not inherent case is absorbed in passive (Jaeggli 1986, Roberts 1987, and Haegeman 1991). The proposed analysis of -ko and -lul is also supported by various morpho-syntactic phenomena, which show that the complementizer -ko patterns with postpositions such as -eykey and -ey, which are argued to be inherent case markers.

The organization of this paper is as follows. In section 2, I discuss nominal projections in Korean and claim that the so-called nominal case markers and postpositions are structural and inherent case markers, respectively (Baker 1988 and Kim 1990). I argue that both structural and inherent case markers belong to the category D (Ahn and Yoon 1989 and Bak 1990). In section 3, I propose that verbal suffix -ko is inherent accusative marker, whereas nominal suffix -lul is structural accusative marker.

2. Nominal Projection

In this section, I discuss nominal projections in Korean and claim that functional head D is the locus of case, i.e., (both structural and inherent) case markers belong to the category D. Specifically, I argue that the so-called nominal case suffixes -ka, -lul, and -uy are structural case
markers, whereas postpositions such as -ey and -eykey are inherent case markers. (Baker 1988b, Bak 1990, and Kim 1990).

2.1 Case Markers

Fully inflected noun phrases, i.e., DPs, are typically associated with case features. Cross-linguistically, it has long been observed that the functional head D is the locus of case features (Emonds 1985, Abney 1987, and Olsen 1989). In various languages, lexical determiners are morphologically inflected for case features. Let us consider German determiners. As pointed out by Olsen (1989), case features are relevant to the morphological realizations of lexical determiners in German. This is a clear indication that the head D is the locus of case features in German. Observe the examples in (1).

(1) a. der Lehrer
    the-Nom teacher

    b. den Lehrer
    the-Acc teacher

As illustrated in (1), case features such as [+Nom] and [+Acc] are overtly marked on the lexical determiners which are of the category D. It is quite clear, therefore, that the category D is the locus of case features in German. Bavarian also shows case features that are morphologically marked on lexical determiners, which suggests that case features are associated with the head D. Observe the examples in (2), cited from Bayer (1984).

(2) a. dem Mo
    the-Dat man
b. den Mo
the-Acc man

The lexical determiners *dem* and *den* in (2), which are of the category D, are morphologically inflected for case features, which confirms that case features are associated with the head D in Bavarian.

Olsen (1989) argues that German pronouns, which are overtly inflected for case features, are of the category D. This confirms the argument that the head D is associated with case features in German. Abney (1987) also provides supporting evidence that the head D is the locus of case features by arguing that English pronouns are of the category D. Given that English pronouns are morphologically inflected for case features, it is not implausible to assume that the head D is the locus of case features, although it is not overtly realized in case of regular determiners.

Nouns in Korean are morphologically inflected for case features, which are realized as nominal suffixes. Observe the examples in (3). The nominal suffixes *-ka*, *-lul*, and *-uy* in (3) are the morphological realizations of nominative, accusative, and genitive case, respectively.

(3) a. aki-ka kicha-lul coaha-n-ta.

baby-Nom train-Acc like-Pres-Dec

‘The baby likes his/her train.’

b. aki-uy kicha-lul sa-ass-ta.

baby-Gen train-Acc buy-Past-Dec

‘I bought the baby’s train.’

Given that the morphological realizations of case features are invariant in Korean, it seems plausible to assume an independent syntactic category for case features. I argue that it is the head D that is associated with case features in Korean. Consider the configuration in (4).
It has been argued in the literature on Korean syntax that the head D is the locus of case features. Ahn and Yoon (1989) and Bak (1990), for example, propose that the nominal case suffixes in (3) are of the functional category D. Their argument goes as follows. Korean is head-final. Given that noun phrases are DPs (Fukui 1986 and Abney 1987), it is predicted that in Korean the head D appears in the final position of a DP. It is in fact the nominal case suffixes that appear in the final position of a DP. Therefore it follows that the case suffixes are the head D of DP.

Cross-linguistic evidence has been provided that case suffixes or case particles should be analyzed as independent syntactic heads. Bittner and Hale (1996a), for example, suggest that case is a functional head, which they refer to as K. Bittner and Hale's (1996a) argument that case is a functional head is supported by the fact that in head-initial languages like Khasi and Samoan case particles appear in the initial position of case-marked nominals. Observe the examples in (5), cited from Bittner and Hale (1996a).

(5) a. Khasi (Mon-Khmer: Assam, India)

Ka la yo’’ii [ya ‘u khlaa].

she Past see Acc the tiger

‘She saw the tiger.’

---

1 Bittner and Hale (1996a) distinguish nominative-marked nominals from accusative-marked nominals by arguing that the former projects a DP, whereas the latter projects a KP. In Korean, there is no such distinction between nominative- and accusative-marked DPs. See Kim (1990) who argues that nominative differs from accusative in Korean in that it is assigned by default. With respect to morphological realization, however, nominative is not distinguished from accusative in that both are realized as nominal suffixes. Following Han (1987), Choe (1988), and Kim (1996), I simply assume that nominative is licensed by AgrS in Korean.
b. Samoan (Austronesian: Samoa)
‘olo’o uli [e le teine] le ta’avale.
Prg drive Erg the girl the car
‘The girl is driving the car.’

The case particles *ya* and *e* in (5), which are associated with accusative and ergative, respectively, are licensed in the initial position of the case-marked nominals, i.e., outside the determiners, which are argued to be the head D. Therefore the examples in (5) suggest that we need an independent syntactic category for case features.

The argument that case is a functional head predicts that case suffixes or particles appear in the final position of case-marked nominals in head-final languages. It is indeed confirmed by the data in (6), also cited from Bittner and Hale (1996).

(6) a. Miskitu (Misumalpan: Nicaragua)
Vaitna ba [sula ba ra] kaik-an.
Man the deer the Acc see-Past.3
‘The man saw the deer.’

b. Shokleng (Ge: Central Brazil)
[ti to] e kuyan te kupe wa.
he Erg his body the wash Prg
‘He is washing his body.’

Both Miskitu and Shokleng are defined as head-final. As illustrated in (6), the case particles *ra* and *to* appear in the final position of the case-marked nominals, which strongly suggests that they are the head of the entire nominal phrases. As in Khasi and Samoan, the case particles appear outside the determiners, which suggests that they are not the head D but a head which lies outside DP. The data in (5) and (6) are nicely accounted for under Bittner and Hale’s (1996a) analysis.
Korean falls under the same category as Miskitu and Shokleng in that it is head-final. As in Miskitu and Shokleng, the nominal case suffixes appear in the final position of case-marked nominals in Korean, which strongly suggests that the case suffixes are the head of case-marked nominals in Korean. Given this, there are two possible structures for case-marked nominals in Korean.

(7) a. \[
\begin{array}{c}
D' \\
\text{NP} \\
\triangle \text{aki} \\
\text{[+Nom]}
\end{array}
\quad b. \quad \begin{array}{c}
K' \\
\text{NP} \\
\triangle \text{aki} \\
\text{[+Nom]}
\end{array}
\]

The head K in (7b) is assumed to be exclusively associated with case features. In Korean, however, a single suffix may realize not only case features but also agreement features. Observe the examples in (8) and (9).

(8) a. apeci-kkeyse
father-Nom/Hon

b. aki-ka
baby-Nom

(9) a. apeci-kkey
father-Dat/Hon

b. aki-eykey
baby-Dat

The nominal suffixes -kkeyse in (8a) and kkey in (9a) are associated with both case and agreement features. We do not need an additional category K and further the term ‘K’ is not
appropriate for case markers in Korean. Therefore I assume (7a) over (7b). In sum, I claim that the head D is the locus of case in Korean.

2.2 Postposition

Korean has a group of nominal suffixes called “postpositions”. First, observe the examples in (10).

    Joe-Nom baby-Dat ring-Acc give-Past-Dec
    ‘Joe gave a ring to the baby.’

    Joe-Nom ring-Acc box-Loc put-Past-Dec
    ‘Joe put the ring in the box.’

The nominal suffixes -eykey and -ey in (10) are traditionally referred to as postpositions. They pattern with prepositions in English in that they have their own semantic interpretations.

In English, prepositions are argued to constitute an independent syntactic category P. It is not quite clear, however, whether postpositions belong to the category P in Korean. Let us compare the case-marked noun phrases in (11) and the postpositional phrases in (12).

(11) a. aki-ka
     baby-Nom

    b. sangca-lul
     box-Acc
(12) a. aki-eykey
       baby-Dat

      b. sangca-ey
       box-Loc

The postpositions -eyky and -ey in (12) are not distinguished from the case suffixes -ka and -lul in (11) in that both attach to stem nouns. More importantly, the postpositions and the case suffixes occupy the same morphological position, i.e., both follow the stem nouns. Further, observe the examples in (13), which more clearly show that the postpositions and the case suffixes occur in the same morphological position.²

(13) a. aki-tul-ka
       baby-Pl-Nom

      b. sangca-tul-lul
       box-Pl-Acc

(14) a. aki-tul-eykey
       baby-Pl-Dat

      b. sangca-tul-ey
       box-Pl-Loc

The data in (13) and (14) show that both the postpositions and the case suffixes immediately follow the plural suffix, which is a clear indication that they are in the same morphological position. Further, the postpositions cannot co-occur with the case suffixes in Korean. Observe the examples in (15).

² For the sake of convenience, I simplify the system of inflectional suffixes, ignoring variants conditioned by phonological environments. Nominative and accusative are realized as -ka and -lul, respectively, when the stem
(15) a. *aki-eykey-lul
    baby-Dat-Acc

    b. *aki-lul-eykey
    baby-Acc-Dat

Given the similarities and the differences between the postpositions and the case suffixes in Korean, we are faced with a question, i.e., whether the postpositions constitute an independent syntactic category P or they are of the same category as the nominal case suffixes. Consider the possible configurations of postpositional phrases in Korean as in (16).

(16) a. PP
    b. DP
     P'
     NP P
     △  |
    aki- eykey

     D'
     NP D
     △  |
    aki- eykey

If we assume (16a) for postpositional phrases, then we need to assume two independent syntactic categories, i.e., D and P, both of which select NP complements. Compare (16a) and (17).

(17) DP
    D'
    NP D
    △  |
    aki -lul

nouns ends in a vowel and as -i and -ul when the stem noun ends in a consonant. I simply posit -ka and -lul as nominative and accusative marker, respectively.
If we assume (16b), on the other hand, we can have a unified structure of regular nominal projections and postpositional phrases. Intuitively, therefore, (16b) seems to be the better alternative.

There arises a further problem with the structure (16a) considering properties of the category P. Given that it is a universal property that P selects DP complements, the structure (16a) should provide an answer to the question why the head P cannot select a DP complement in Korean. As an alternative to (16a), one might suggest that the category P indeed selects a DP complement as illustrated in (18).

(18)

```
PP
   /\  \\
  P'   \\
 /    /
DP    P   \\
   /  \\
D' -eykey
 /    \\
NP   D \\
   /\  \\
akik-
```

With the structure (18), we can maintain the argument that P universally selects a DP complement. There arises another problem with (18). It remains unexplained why the head D is always non-overt, i.e., why the postpositions cannot co-occur with the case suffixes, which are of the category D.

Now let us consider the structure (16b). There is empirical and theoretical evidence for assuming (16b) instead of (16a). First of all, the fact that the postpositions and the case suffixes occupy the same morphological position strongly suggests that they are of the same category. This argument is further confirmed by the fact that the case suffixes and the postpositions cannot co-occur. If we assume that they are of the same category, these facts are well accounted for in a principled manner. There is further empirical evidence that the postpositions and the case suffixes are indeed of the same category. Consider the following examples.
   Joe-Nom school-Loc/Acc go-Past-Dec
   ‘Joe went to school.’

   Joe-Nom Sue-Dat/Acc ring-Acc give-Past-Dec
   ‘Joe gave Sue a ring.’

The data in (19) show that the postpositions -ey and -eykey are interchangeable with the accusative suffix -lul, which is a clear indication that the postpositions are of the same category as the case suffix, i.e., D. I argue that postpositions are of the category D in Korean.

Given that the category D is the locus of case (and agreement) features, the argument that the postpositions are of the category D predicts that they are associated with case features. It has long been argued that the category P is indeed associated with case features in various languages (Chomsky 1986, Baker 1988b, and Kim 1990). More specifically, the category P has been assumed to be typically associated with inherent case. Observing that benefactive applicatives are distinguished from instrumental applicatives in Chichewa, for example, Marantz (1984) and Baker (1988b) suggest that the syntactic head P may realize inherent case in Chichewa. Baker (1988b) defines the possible functions of the category P as illustrated in (20).

(20) Ps may
   i. assign a θ-role
   ii. assign Case to an NP
   iii. REALIZE (i.e. spell out) an inherent Case Assignment

Under the assumption that a P may in a particular structure have function (iii), Baker (1988b) suggests that the prepositional elements found in instrumental clauses in Chichewa are the morphological realizations of inherent case.

The so-called of-insertion in English provides supporting evidence for the argument that prepositions may realize inherent case. Chomsky (1986a) argues that the dummy preposition of is merely the realization of the inherent genitive case assigned by the lexical head N. The
preposition of is distinguished from other prepositions in that it does not assign any θ-role to the complement. Observe the examples in (21).

(21) a. I bought a book for my son.
    b. I am proud of my son.

The preposition for in (21a) assigns a θ-role, i.e., benefactive, to the complement DP my son. The preposition of in (21b), on the other hand, does not assign a θ-role to the complement, which is assigned a θ-role by the lexical head A proud. It is just a morphological realization of the inherent case assigned to the complement by the head A in connection with a thematic relation. The dummy preposition of in (21b) therefore has the property (iii) in (20), whereas the preposition for in (21a) has both (i) and (ii).

Following the distinction between case-assigning Ps and case-realizing Ps in Baker (1988b), Kim (1990) proposes that the category P may realize an inherent case in Korean. Observe the examples in (22).

(22) a. [Na-eyskey] kay-ka musep-ta.
        I-Dat dog-Nom scary-Dec
    ‘I am scared of dogs.’

        America-Loc earthquake-Nom occur-Past-Dec
    ‘In America an earthquake occurred.’

Kim (1990) argues that the postpositions -eykey and -ey in (22) are the realizations of the inherent case assigned by the predicates under a close association with θ-roles. Under Kim’s (1990) analysis, na- and mikuk- are assigned an inherent case at D-structure by the predicates musep- and na-, respectively. The prepositions -eykey and -ey are inserted at S-structure to
realize the inherent cases. These postpositions are not \( \theta \)-role assigners, i.e., they have only the property (iii) in (20).\(^3\)

The argument that the postpositions are of the same category as the case suffixes in Korean is also supported by Grimshaw (1991) who suggests that the highest (extended) projection of the nominal system is PP. If we adapt Grimshaw's (1991) analysis of noun phrases to Korean, we have the following structure of postpositional phrases.

(23)

\[
\begin{array}{c}
\text{PP} \\
\downarrow \\
\text{P'} \\
\downarrow \\
\text{DP} \\
\downarrow \\
\text{D'} -\text{eykey} \\
\downarrow \\
\text{NP} \\
\downarrow \\
\text{D} \\
\downarrow \\
\text{aki}
\end{array}
\]

Given that there are two functional categories within a nominal projection, there arises a question regarding the so-called nominal case suffixes, i.e., whether they are D or P. There is clear empirical evidence that the case suffixes are not D. Observe the following examples.

   Sue-Nom home-to-Del go-Past-Dec
   'Sue went home only.'


---

\(^3\)Like Baker (1988b), Kim (1990) also distinguishes two types of P in Korean. Some Ps are just the morphological realizations of case and the others are \( \theta \)-role assigners. In this chapter, I discuss only the former type of P.
    Sue-Nom apple-Del-Acc buy-Past-Dec
    ‘Sue bought apples only.’


The data in (24) show that the postposition -ey occurs inside the so-called delimiter -man ‘only’ and the data in (25) indicate that the case suffix -lul occurs outside the delimiter. This implies that the postpositions occupy a morphological position internal to the case suffixes. The data in (24) and (25) therefore suggest that the case suffixes cannot be the head D, which is internal to P under the assumption that the postpositions are the head P.

There is much clearer evidence that the case suffixes cannot be D. The data in (26) show that the postposition -ey may co-occur with the case suffix -lul in restricted contexts.

    Sue-Nom home-to-Acc go-Past-Dec
    ‘Sue went home.’


Note here that the postposition -ey may precede the case suffix -lul (26a), but not vice versa (26b). This strongly suggests that the case suffix -lul in (26a) cannot be the head D under the assumption that the postposition -ey is P. The data in (24) through (26) therefore lead us to conclude that the case suffixes are of the same category as the postpositions if we assume Grimshaw’s (1991) analysis of case-marked nominals.

To summarize, I argue that the case suffixes and the postpositions are of the category D and thus associated with case features in Korean. Specifically, I claim that the so-called case suffixes are the morphological realizations of structural case, whereas the postpositions are those of inherent case.
3. -Ko and Inherent Accusative

Based upon the configurations in which complementizer -ko and accusative suffix -lul are licensed, Jeong (1997) proposes that both -ko and -lul are associated with structural accusative. It is well-known that -ko is licensed in the domain of complement to V. It cannot be licensed in complement to N nor in subject position. Observe the examples in (28).

    Joe-Nom rumor-Acc believe-Past-Dec
    ‘Joe believed the rumor.’

    b. [Sue-ka cip-ey ka-ass-ta-ko] Joe-uy mitum
    Sue-Nom home-to go-Past-Dec-C Joe-Gen belief
    ‘Joe’s belief that Sue went home’

    Sue-Nom home-to go-Past-Dec-Nom Joe-Acc surprised do-Past-Dec
    ‘That Sue went home surprised Joe.’

The nominal suffix -lul, which is the realization of accusative, is also restricted to the domain of complement to V. It is self-evident that it cannot be licensed in complement to N nor in subject position since it is accusative marker. Observe the examples in (29).
   Joe-Nom Sue-Nom go-Past-Dec C believe-Past-Dec
   ‘Joe believed that Sue went.’

b. *[somun-lul] Joe-uy mitum
   rumor-Acc Joe-Gen belief
   ‘Joe’s belief of the rumor’

   that rumor-Acc Joe-Acc surprised do-Past-Dec
   ‘The rumor surprised Joe.’

Based upon the data in (28) and (29), Jeong (1997) suggests that the verbal suffix -ko shares the feature [+Acc] with the nominal suffix -lul.

(30) a. \[
\begin{array}{c}
V' \\
\mid \ \\
D' \\
\mid \\
NP \quad D \quad [\text{-lul} \quad [+\text{Acc}]]
\end{array}
\]

b. \[
\begin{array}{c}
V' \\
\mid \ \\
C' \\
\mid \\
MP \quad C \quad [\text{-ko} \quad [+\text{Acc}]]
\end{array}
\]

In this paper, I refine Jeong’s (1997) analysis and propose that the complementizer -ko is associated with inherent accusative, whereas the nominal suffix -lul is associated with structural accusative. In the next section, empirical evidence for the analysis of -ko as being associated with inherent accusative will be presented.
3.1 Passivization

Passivization is considered one of the criteria by which one can distinguish structural case from inherent case. It is widely argued that passivized verbs lose the ability to assign structural (accusative) case but retain the ability to assign inherent case. Let us consider the German examples in (31) and (32), cited from Haegeman (1991) and Webelhuth (1995).

(31) a. Sie sieht ihn
   she sees him-Acc

   b. Er wird gesehen
   he-Nom is seen

   c. *Ihn wird gesehen
   him-Acc is seen

(32) a. Sie hilft ihm.
   she helps him-Dat

   b. Ihm wird geholfen
   him-Dat is helped

   c. *Er wird geholfen
   he-Nom is helped

The data in (31) clearly indicate that German accusative, which is assumed to be structural, cannot be licensed by the passivized verb *gesehen* (31c). This is correctly predicted by the widely accepted assumption that passivization absorbs structural case (Jaeggli 1986, Roberts 1987, Baker et al. 1988, Haegeman 1991, and Webelhuth 1995). Given this, the object DP raises to the subject position to be assigned nominative by the finite INFL (31b). The data in (32), on
the other hand, show that German dative, which is argued to be inherent, is licensed by the passivized verb *geholfen*. This is predicted by the assumption that inherent case is not absorbed by passivization.

Korean patterns exactly with German in terms of passivization and case absorption. Consider the following examples.

    
    *Joe-Nom Sue-Dat ring-Acc give-Past-Dec*  
    ‘Joe gave Sue a ring.’

    *ring-Nom Sue-Dat give-Pass-Past-Dec*  
    ‘A ring was given to Sue.’

    *Sue-Nom ring-Acc give-Pass-Past-Dec*  
    ‘Sue was given a ring.’

In (33a), the indirect object DP *Sue-eykey* is assigned dative and the direct object DP *panci-lul* is assigned accusative. (33b) clearly indicates that the dative-marked indirect object is licensed by the passivized verb *cu-eci*. (33c), on the other hand, shows that the accusative-marked direct object cannot be licensed by the passivized verb. From the data in (33), we can conclude that dative, which is realized as *-eykey*, is inherent, whereas accusative, which is realized as *-lul*, is structural. I assume that DPs headed by *-lul* are licensed by AgrO in terms of the spec-head agreement, whereas DPs headed by *-eykey* are licensed by V in terms of the head-complement relation.

Given that passivized verbs lose the ability to license structural accusative in Korean, consider the examples in (34) and (35).
   CBS-Nom that rumor-Acc report-Past-Dec
   ‘CBS reported the rumor.’

   CBS-by that rumor-Acc report-Pass-Past-Dec
   ‘The rumor was reported by CBS.’

   everybody-Nom that rumor-Acc believe-Past-Dec
   ‘Everybody believed the rumor.’

   everybody-by that rumor-Acc believe-Pass-Past-Dec
   ‘The rumor was believed by everybody.’

   ‘The passive morphemes -toy and -eci in (34b) and (35b) absorb structural accusative and
   thus the accusative-marked DP somun-lul in (34b) and (35b) cannot be licensed by the passivized
   verbs poto-toy and mit-eci. The object DP may raise to the subject position to be assigned
   nominative by AgrS as illustrated in (36).

   that rumor-Nom CBS-by report-Pass-Past-Dec
   ‘The rumor was reported by CBS.’

   that rumor-Nom everybody-by believe-Pass-Past-Dec
   ‘The rumor was believed by everybody.’
From the data in (34) - (36), it is clear that DPs headed by the nominal suffix -lul are associated with structural accusative, which is absorbed in the passive.

Now let us consider passive constructions with sentential complements. Observe the examples in (37) and (38).

   CBS-Nom Korea-Nom win-Past-Dec-C report-Past-Dec
   ‘CBS reported that Korea won.’

   Korea-Nom win-Past-Dec-C report-Pass-Past-Dec
   ‘It was reported that Korea won.’

   everybody-Nom Korea-Nom win-Past-Dec-C believe-Pass-Dec
   ‘Everybody believed that Korea won.’

   Korea-Nom win-Past-Dec-C believe—Pass-Pass-Dec
   ‘It was believed that Korea won.’

The embedded CPs headed by the verbal suffix -ko in (37b) and (38b) are the objects of the passivized verbs potoy- and mit-eci-, respectively. Unlike the DPs headed by -lul in (34b) and (35b), the embedded CPs headed by -ko in (37b) and (38b) are licensed by the passivized verbs. Under the analysis of -ko and -nun I proposed in chapter 3, the object CPs in (37b) and (38b) are associated with structural accusative. It is therefore wrongly predicted that like the object DPs headed by -lul in (34b) and (35b), the object CPs in (37b) and (38b) headed by -ko cannot be licensed by the passivized verbs. The prediction is not correct, however, as clearly illustrated in (37b) and (38b). The analysis of -ko and -lul as being associated with structural accusative should be reconsidered.
Given the fact that the object DPs (36a) and (36b) raise to the subject position and are assigned nominative case, one might argue that the embedded CPs in (37b) and (38b) are also in the subject position and therefore the verbal suffix is not associated with accusative, whether structural or inherent. This is not the case, however. We saw in chapter 3 that CPs differ from DPs in Korean in that the latter but not the former can occur in subject position. Compare (39) and (40).

    that fact-Nom everybody-Acc surprise make-Past
    ‘The fact surprised everyone.’

    that fact-Nom important-Dec
    ‘The fact is important.’

(40) a. *[Hankuk-ka iki-ess-ta-ko-(ka)] motu-lul nolake ha-ess-ta.
    Korea-Nom win-Past-Dec-C-Nom everybody-Acc surprise make-Past-Dec
    ‘That Korea won surprised everybody.’

    b. *[Hankuk-ka iki-ess-ta-ko-(ka)] cungyoha-ta.
    Korea-Nom win-Past-Dec-C-Nom important-Dec
    ‘That Korea won is important.’

Judging from the data in (40), it is clear that the embedded CPs in (37b) and (38b) are not in the subject position.

I propose that the verbal suffix -ko is associated with inherent accusative, whereas the nominal suffix is associated with structural accusative. Under this analysis, CPs headed by -ko are predicted to be licensed by passivized verbs since inherent accusative is not absorbed by passivization. I claim that the embedded CPs in (37b) and (38b) are licensed by the matrix verbs. In order to account for the fact that the nominal suffix -lul cannot be licensed by the passivized
verbs, I maintain the argument that -lul is the morphological realization of structural accusative, which I argue to be licensed by the functional category AgrO. Consider the configurations in which -lul and -ko are licensed.

\[(41)\]  

\[(41a)\]

\[
\begin{array}{c}
\text{AgrOP} \\
\text{DP} \quad \text{AgrO'} \\
\text{somun-lul} \quad \text{VP} \\
\text{[+Acc} \text{SC]} \\
\text{V'} \\
\text{t} \quad \text{V} \\
\text{mit-} \\
\end{array}
\]

\[(41b)\]

\[
\begin{array}{c}
\text{AgrOP} \\
\text{VP} \quad \text{AgrO'} \\
\text{[+Acc} \text{SC]} \\
\text{V'} \\
\text{CP} \quad \text{V} \\
\text{iki-ass-ta-ko} \\
\text{[+Acc} \text{IC}] \\
\text{mit-} \\
\text{[+Acc} \text{IC}] \\
\end{array}
\]

The object DP in (41a), headed by the nominal suffix -lul, bears structural accusative, which must be licensed by the functional head AgrO. It raises to the spec of AgrOP and is licensed by the matrix AgrO. The object CP in (41b), on the other hand, bears inherent accusative, which must licensed by the lexical head V. It is not necessary for the object CP to raise to the spec of AgrO. Under the assumption that passivized verbs do not project AgrOP, object DPs headed by -lul cannot be licensed in the passive since structural accusative cannot be licensed by passivized verbs. CPs headed by -ko, on the other hand, are licensed in passive since inherent accusative can be licensed by the passivized verbs.

The proposed analysis of -ko implies that CPs headed by -ko are licensed in the same manner as DPs headed by postpositions such as -eykey and -ey, which are the morphological realizations of dative and locative case. DPs headed by -eykey and -uy are licensed by passivized verbs since they are associated with dative and locative which are inherent. Observe the examples in (42).
(42) a. punci-ka sue-ekey cu-eci-ass-ta.
    ring-Nom Sue-Dat give-Pass-Past-Dec
    ‘A ring was given to Sue.’

b. punci-ka sangca-ey sumki-eci-ass-ta.
    ring-Nom box-Loc hide-Pass-Past-Dec
    ‘The ring was hidden in the box.’

The dative-marked DP in (42a) and the locative-marked DP in (42b) are licensed by the passivized verbs cu-eci and sumki-eci. I argue that DPs headed by -ekey or -ey and CPs headed by -ko are associated with inherent case and thus that they are licensed by V in terms of the head-complement relation. Compare the configuration (41b) with the configuration (43).

(43)

```
V'
  
  DP       V
  
Sue-ekey   cu-eci
[+Dat]       [+Dat]
```

In sum, the revised analysis of -ko as being associated with inherent accusative is empirically supported by the fact that, like DPs headed by postpositions which are associated with inherent case, CPs headed by -ko are licensed by passivized verbs.

3.2 Case Drop

The analysis of -ko as being associated with inherent accusative is also supported by the so-called case drop phenomenon in Korean. Observe the examples in (44).

    Joe-Nom traffic accident-Acc police-Dat report-Past-Dec
    ‘Joe reported the traffic accident to the police.’
   Joe-Nom candy-Acc box-Loc hide-Past-Dec
   ‘Joe hid the candy in the box.’

The direct object DPs in (43a and b), which are headed by the nominal suffix -lul, are licensed via the checking of structural accusative by the functional head AgrO. The dative DP in (44a) and the locative DP in (44b), on the other hand, are licensed by the verbs via the checking of dative and locative, respectively.

Given that postpositions are the realizations of inherent case in Korean, let us discuss how the nominal case suffixes and the postpositions behave in terms of the case drop phenomenon. There have been proposed ECP-based analyses of the case drop phenomenon in the literature. Lamontagne and Travis (1987), for example, observe that the possibility of non-overt realization of accusative is subject to an adjacency condition in languages like Japanese. Observe the following examples from Japanese, cited from Bittner and Hale (1996).

(45) a. John-ka dare-(o) nagutta no?
   John-Nom who-Acc hit Q
   ‘Who did John hit?’

b. Dare-(o) John-ga nagutta no?

The object DP in (45a) is properly governed by the verb since it is \( \theta \)-marked and satisfies the adjacency condition. Therefore the accusative suffix -o can be dropped. The object DP in (45b), on the other hand, is not properly governed by the verb since the adjacency condition is not satisfied. Therefore the accusative suffix -o cannot be dropped.

ECP-based analyses of the case drop phenomena, however, seem not to hold in Korean in which the adjacency condition seems not to exist. Observe the examples in (46).
   who-Nom candy-Acc eat-Past-Int
   ‘Who ate the candy?’

   b. Candy-(lul) nuku-ka mek-ass-nya?

As clearly illustrated in the above examples, the accusative suffix -lul can be dropped regardless of whether the adjacency condition is met or not. Consider the data in (47) and (48) which further suggest that the adjacency condition is not relevant to the case drop phenomena in Korean.

(47) a. Joe-ka Sue-eykey panci-(lul) cu-ass-nya?
   Joe-Nom Sue-to ring-Acc give-Past-Int
   ‘Did Joe give Sue a ring?’

   b. Joe-ka panci-(lul) Sue-eykey cu-ass-nya?

(48) a. Sue-ka sangca-ey candy-(lul) sumki-ass-nya?
   Sue-Nom candy-Acc box-in hide-Past-Int
   ‘Did Sue hid the candy in the box?’

   b. Sue-ka candy-(lul) cangca-ey sumki-ass-nya?

From the data in (46) -(48), it is clear that the structural accusative suffix -lul can be dropped regardless of whether the adjacency condition is met or not.

Unlike the structural accusative suffix -lul, postpositions such as -eykey and -ey, which I argue to be the morphological realizations of (inherent) dative and locative case, cannot be dropped regardless of the adjacency condition is met. Compare (48) and (49).
(49) a. Sue-ka sangca-*(ey) candy-lul sumki-ass-nya?
    Sue-Nom box-in candy-Acc hide-Past-Int
    ‘Did Sue hide the candy in the box?’

b. Sue-ka candy-lul cangca-*(ey) sumki-ass-nya?

In order to account for the case drop phenomenon in Korean, we need to make a
distinction between structural and inherent case. Regardless of whether the adjacency condition
is met or not, structural case suffixes may be dropped, whereas inherent case suffixes may not.\footnote{There seem to exist postpositions in Korean which can be dropped. This may weaken the argument presented in this section. It is not necessarily the case, however. First observe the following examples.}

Now let us consider the verbal suffix -ko. With respect to the case drop phenomenon, the
verbal suffix -ko patterns with the postpositions -eykey and -ey but differs from the structural
accusative suffix -lul. As clearly illustrated in (50) and (51), -ko cannot be dropped regardless of
whether the adjacency condition is met or not.

\footnote{There seem to exist postpositions in Korean which can be dropped. This may weaken the argument presented in this section. It is not necessarily the case, however. First observe the following examples.}

(i) a. Joe-ka hakkyo-(ey) ka-ass-ta.
    Joe-Nom school-to go-Past-Dec
    ‘Joe went to school.’

    Joe-Nom ring-Acc Sue-to give-Past-Dec
    ‘Joe gave Sue a ring.’

The examples in (i) show that the inherent case markers -ey and -eykey can be dropped. It is not clear, however,
whether it is indeed the inherent case markers that are dropped if we consider the fact that the inherent case markers
-ey and -eykey in (i) are interchangeable with the nominal accusative marker -lul as illustrated in (ii).

    Joe-Nom school-Acc go-Past-Dec
    ‘Joe went to school.’

    Joe-Nom ring-Acc Sue-Acc give-Past-Dec
    ‘Joe gave Sue a ring.’

Given the fact that -ey and -eykey may be interchangeable with -lul, it is not implausible to assume that it is the
structural accusative marker -lul, not the inherent case markers that are dropped.
   Joe-Nom Sue-Nom come-Past-Dec-C believe-Past-Dec
   ‘Joe believed (that) Sue came.’


   Joe-Nom Sue-to one o’clock-at come-Imp-C say-Past-Dec
   Joe told Sue to come at one o’clock.’


The embedded CPs in (50b) and (51b) are not properly governed by the matrix verbs and
the verbal suffix -ko may not be dropped. In (50a) and (51a), on the other hand, the embedded
CPs are properly governed by the matrix verbs since the adjacency condition is met.
Nevertheless, the verbal suffix -ko may not be dropped. The data in (50) and (51) clearly show
that the verbal suffix -ko patterns with inherent case suffixes such as -eykey and -ey but differs
from the structural accusative -lul regarding the case-drop phenomenon. This strongly supports
the analysis of -ko as being associated with inherent (accusative) case.

3.3 Interactions with Topic Marker/Delimiters

Structural and inherent case suffixes show different properties regarding their interactions
with the topic marker -(n)un in Korean. Structural case suffixes cannot co-occur with the topic
marker as illustrated in (52). Instead, they can be replaced by the topic marker as illustrated in
(53).\(^5\)

\(^5\) The topic marker -\textit{nun} should be distinguished from the complementizer -\textit{nun}. The former can attach to both
nominal and verbal projections, whereas the latter is restricted to verbal projections.
   Joe-Nom-Top linguistics-Acc study-Past-Dec
   ‘Joe studied linguistics.’

   Joe-Nom linguistics-Acc-Top study-Past-Dec
   ‘Joe studied linguistics.’

   Joe-Nom/Top linguistics-Acc study-Past-Dec

   Joe-Nom linguistics-Acc/Top study-Past-Dec

Unlike the nominal suffixes -ka and -lul, which are associated with (structural) nominative and accusative, the postpositions -ey and -eykey, which are the realizations of (inherent) locative and dative, can co-occur with, but cannot be replaced by, the topic marker as illustrated in (54).

   Joe-Nom candy-Acc box-in-Top hide-Past-Dec
   ‘Joe hid the candy in the box.’

   Joe-Nom Sue-to-Top ring-Acc give-Past-Dec
   ‘Joe gave Sue a ring.’
In short, structural case suffixes are distinguished from inherent case suffixes in terms of their interactions with the topic marker. The former are interchangeable but not co-occur with the topic marker, whereas the latter are not interchangeable but co-occur with the topic marker.

Korean has a group of nominal suffixes referred to as delimiters. The interactions of the case suffixes with the delimiters also suggest that we need a distinction between inherent and structural case. In general, the structural case suffixes -ka and -lul can be replaced by the delimiters as shown in (55). While it is possible for the structural case suffixes to be replaced by the delimiters, they cannot co-occur with the delimiters as illustrated in (56).

    Joe-also/only linguistics-Acc study-Past-Dec
    ‘Joe also/only studied linguistics.’

    Joe-Nom linguistics-also/only study-Past-Dec
    ‘Joe studied linguistics too/only.’

    Joe-Nom-also/even linguistics study-Past-Dec

    Joe-Nom linguistics-Acc-also/even study-Past-Dec

Unlike the structural case suffixes, on the other hand, the inherent case suffixes -ey and -eykey cannot be replaced by, but co-occur with, the delimiters as illustrated in (57).

    Joe-Nom candy-lul box-in-also/even/only hide-Past-Dec
    ‘Joe hid the candy also/even/only in the box.’
   Joe-Nom Sue-to-also/even/only ring-Acc give-Past-Dec
   ‘Joe gave a ring also/even/only to Sue.’

The data in (55) - (57) clearly show that structural case is distinguished from inherent case with respect to their interactions with the delimiters in Korean.

Now let us discuss the interactions of the verbal suffix -ko with the topic marker and the delimiters. With respect to the interactions with the topic marker and the delimiters, the verbal suffix -ko patterns exactly with the inherent case suffixes -ey and -eykey. Observe the examples in (58).

   Joe-Nom Sue-Nom come-Past-Dec-C-Top/only/even say-Past-Dec
   ‘Joe said only/even that Sue came.’

   Joe-Nom Sue-Dat one o’clock-at come-Prop-C-Top/only/even tell-Past-Dec
   ‘Joe told Sue to come at one o’clock.’

The verbal suffix -ko can co-occur with the topic marker or the delimiters, just as the inherent case suffixes can. The verbal suffix -ko, on the other hand, cannot be simply replaced by the topic marker or the delimiters.

In sum, we have seen systematic differences between the nominal suffix -lul and the verbal suffix -ko, which has led us to argue that -ko is not associated with structural accusative. We have also seen systematic similarities between the verbal suffix -ko and the inherent case suffixes, which led us to conclude that -ko is associated with inherent accusative. Consider a summary of properties of -lul, -eykey, and -ko as given in (59).
(59)  **-lul**  ****-eykey**  **-ko**  
- Free Case Drop  - No Case Drop  - No Case Drop  
- Replaced by Del  - Not replaced by Del  - Not replaced by Del  
- Not co-occurs with Del  - Co-occurs with Del  - Co-occurs with Del  
- Not licensed in passive  - Licensed in passive  - Licensed in passive  

The systematic differences between the nominal suffix **-lul** and the verbal suffix **-ko** along with the systematic similarities between the postposition **-eykey** and the complementizer **-ko** lead us to the conclusion that **-ko** is associated with inherent (accusative) case.

### 3.4 Morphological Structure

In this section, I will show that the morphological structures of case-marked DPs and CPs further suggest that the verbal suffix **-ko** is associated with inherent accusative, whereas the nominal suffix **-lul** is associated with structural accusative. We have seen in 3.3 that the structural accusative suffix such as **-ka** and **-lul** cannot co-occur with the delimiters, whereas the inherent case suffixes such as **-ey** and **-eykey** can.

Delimiters in Korean, however, should be classified into two suptypes in terms of whether they can co-occur with the structural case suffixes. Some can co-occur with **-ka** and **-lul** and others cannot. Consider the examples in (60) and (61).

(60) a. penci-man-ka  
    ring-Del (only)-Nom

    b. penci-man-lul  
    ring-Del (only)-Acc

(61) a. *penci-to-ka  
    ring-Del (also)-Nom
b. *punci-to-lul
ring-Del (also)-Acc

As clearly illustrated in (60) and (61), the delimiter -man is distinguished from the delimiter -to in that the former but not the latter can co-occur with -ka and -lul, which are associated with (structural) nominative and accusative. The fact that the delimiter -man can co-occur with -lul seems to suggest that the structural accusative suffix -lul is not distinguished from the inherent dative suffix -eykey since both can occur with -man.

Despite the fact that both -lul and -eykey allow the delimiter -man, however, -lul and -eykey are clearly distinguished from each other in terms of morphological structure. Compare the examples in (60) with those in (62).

(62) a. chinku-eykey-man
friend-Dat-Del (only)
‘only to the friend’

b. cangca-ey-man
box-Loc-Del (only)
‘only in the box’

A close look at the internal morphological structures of the nominal projections in (60) and (62) clearly indicates that the structural case suffixes are preceded by the delimiter -man, whereas the inherent case suffixes are followed by the delimiter. In other words, they occupy different morphological positions.

(63) a. punci -man -lul
N Del SC

b. Sue -eykey -man
N IC Del
Given the morphological structures in (63), we are led to assume the structure in (64) for nominal projections in Korean.

(64) N-IC-Del-SC

According to (64), inherent case suffixes such as -eykey and -ey are licensed inside delimiters, whereas structural case suffixes such as -ka and -lul outside the delimiters.

Now let us move to the verbal case suffix -ko. With respect to morphological structure, -ko patterns exactly with inherent case suffixes, i.e., both are followed by the delimiters. Observe the examples in (65).

    Joe-Nom Sue-Nom go-Past-Dec-C-Del say-Past-Dec
    ‘Joe said that Sue went.’


The fact that the verbal suffix -ko is followed by the delimiter -man strongly suggests that it is associated with inherent case. The verbal suffix -ko and inherent case suffixes occupy the same morphological position in connection with the delimiter -man. Now consider the morphological structure of verbal projections headed by -ko.

(66) ka-ass-ta -ko -man
    V IC Del

The internal morphological structure of the verbal projection in (66) provides strong evidence that the verbal suffix -ko is indeed associated with inherent accusative.\(^6\)

\(^6\) Emonds (1985) argues that COMPs are of the category P. Under his analysis, it is therefore quite natural to assume that COMPs share features with postpositions. Given the argument that postpositions are the realizations of inherent case, we are led to argue that COMPs are also associated with inherent case.
The interactions of \textit{-lul} and \textit{-ko} with the delimiters in interrogatives more vividly show that the former is associated with structural accusative and the latter with inherent accusative. We have seen in chapter 3 that interrogative clauses in Korean may be headed by the nominal suffix \textit{-lul} or the verbal suffix \textit{-ko}, which is a strong indication that both are associated with accusative.

    Joe-Nom who-Nom go-Past-Int-Acc/C ask-Past-Dec
    ‘Joe asked who went.’

The delimiter \textit{-man} can co-occur with the verbal suffix \textit{-ko} as well as the nominal suffix \textit{-lul}. The suffixes \textit{-lul} and \textit{-ko}, however, are clearly distinguished from each other in terms of the morphological positions in which they occur. Observe the examples in (68).

    Joe-Nom who-Nom go-Past-Int-Del-Acc ask-Past-Dec
    ‘Joe asked who went.’


As clearly illustrated in (68), the nominal suffix \textit{-lul} is preceded by the delimiter \textit{-man}, whereas the verbal suffix \textit{-ko} is followed by \textit{-man}, which strongly suggests that the former is associated with structural accusative and the latter with inherent accusative.

I have argued that the postposition \textit{-eykey} is the realization of inherent (dative) case and the nominal suffix \textit{-lul} that of structural (accusative) case. Observe the examples in (69), which show that the postposition \textit{-eykey} is interchangeable with the nominal case suffix \textit{-lul} in some cases.
   doctor-Nom baby-Dat/Acc shot-Acc put-Past-Dec
   ‘The doctor gave the baby a shot.’

   Joe-Nom Sue-Dat/Acc book-Acc give-Past-Dec
   ‘Joe gave Sue a book.’

Both -eykey and -lul can co-occur with the delimiter -man. As expected, however, the
postposition is followed by -man, whereas the nominal suffix -lul is preceded by -man.

   doctor-Nom baby-Dat-Del shot-Acc put-Past-Dec
   ‘The doctor gave a shot only to the baby.’


   Joe-Nom Sue-Dat-Del book-Acc give-Past-Dec
   ‘Joe gave a book only to Sue.’


The morphological structure given in (64) is clearly confirmed by the data in (68), (70)
and (71) and therefore we are led to conclude that the verbal suffix -ko is associated with inherent
(accusative) case and the nominal suffix -lul with structural (accusative) case.
4. Summary

I have argued that inherent case is uniformly licensed by lexical heads in terms of the θ-related head-complement relation, whereas structural case is licensed by functional heads in terms of the spec-head agreement. Specifically, I argued that structural accusative is licensed by the functional head AgrO and inherent accusative by the lexical head V. I also argued that structural genitive is licensed by the functional head D in terms of the spec-head complement and inherent genitive by the lexical head N. Based upon these arguments, I proposed that the verbal suffixes -ko and -num are the morphological realizations of inherent accusative and inherent genitive, respectively. I showed that this analysis is supported by the licensing of -ko in the passive sentences, the case drop phenomenon, the interactions of the case suffixes with the delimiters, and the internal morphology of the case suffixes and the delimiters.
References


Whitman, J. (1991) String Vacuous V-to-Comp, paper presented at GLOW.


Serial Verb Constructions in Korean

Jaeyoon Kim
jy@u.washington.edu

1. Introduction

In this paper, I will present serial verb constructions (hereafter, SVC’s) in Korean. In section 2, I will give general descriptions of three complex verb constructions in Korean. In section 3, I will discuss negation in complex verb construction. Section 4 distinguishes some pseudo-SVC’s from genuine SVC’s. In section 5, I will overview on SVC’s. Section 6 is a summary.

2. Complex Verb Constructions in Korean

The term ‘complex verb construction’ indicates, broadly, constructions where two verbs occur in a sequence, with a suffix attached to the first verb, as is the case in verbal coordinate constructions, subordination constructions, and SVC’s. In this section, I will give a general description of the three constructions mentioned and distinguish SVC’s from the other two constructions. I will also discuss the status of the suffix -e, which is used in SVC’s.

2.1 Coordination

Coordination can be characterized as follows: (i) neither conjunct is a complement of the other; (ii) semantically, two independent events are asserted, which may take at the same time or sequentially; (iii) a conjunction marker -ko is used. In Korean, the suffix -

\footnote{Note that some languages do not use overt conjunction markers. See Payne(1985:25-27) for a discussion of these languages.}
ko is a verbal conjunction marker,² and it is suffixed to the first verb. Let's look at the examples of coordinate structures:

(1) John-i chayk-ul ilk-ko cu-ess-ta
    -NOM book-ACC read-Conj give-Past-Dec

    'John read and gave books.'

Properties (i), (ii), and (iii) of coordination are in evidence in the examples in (1).

2.2 Subordination

Subordination is characterized as a relation in which one verb or verb phrase is subcategorized by, or is a complement of the other, and the subcategorizing verb cannot appear alone without this complement. In Korean, the first verb (phrase) will be a complement of the second. Subordination structures are schematized in (2):

(2)   Y
     / \
    XP  y

In the subordination in (2), a lexical category, Y takes a phrasal complement, XP. There are some examples of the subordination structure in (2).

The verb sayngkak- ‘to think’ and the periphrastic causative verb ha- ‘to do/cause’ are subordination verbs; i.e., verbs that take a phrasal complement. In order to see that this is the case, let’s consider the scope of negation in the following examples:

(3) a. apeci-nun John-i ani sengsilha-ta-ko
    father-Top John-Nom Neg diligent-Dec-Comp

² When two noun phrases are coordinated, the suffix -(k)wa, or -(h)ko, is used.
sayngkak-ha-si-ess-ta
consider-do-Hon-Past-Dec
‘Father considered John not to be smart.’
b. John-un apeci-ka ani o-si-key ha-ess-ta
   John-Top father-Nom NEG come-Hon-Comp cause-Past-Dec
   ‘John caused father not to go.’

In the sentences in (3), the first verb’s domain is distinct from that of the final verb; in each, the negative morpheme has scope only over the first verb. If this were not the case, sentence (3a) would mean ‘The father did not consider John to be diligent’. The negation morpheme does not take scope across a clausal boundary.³ Consider the negation scopes in (4):

(4) a. apeci-un John-I sengsilha-ta-ko ani
   father-Top John-Nom diligent-Dec-Comp Neg
   sangkak-ha-si-ess-ta
   consider-do-Hon-Past-Dec
   ‘The father did not consider John to be diligent.’
b. John-un apeci-ka o-si-key ani ha-ess-ta
   John-Top teacher-Nom come-Hon-Comp NEG cause-Past-Dec
   ‘John did not cause father to come.’

In (4), the negative morpheme is placed before the final verb and after the first verb, and thus it has scope only over the final verb.

In (4), the negation scopes indicate that, in a subordination structure, the head verb takes a phrasal complement. It is also semantically clear that one verb takes the phrase of the other verb as a complement in a subordination structure; without the complement, the structure does not make sense, and it is not grammatical.

³ The scope of negation will be discussed in detail in section 3.
2.3 Serialization

In the third type of Korean complex verb construction, serialization, two verbs are combined without a conjunction marker, unlike coordination, and neither verb is a complement of the other, unlike subordination. I consider this type of construction to be a serial verb construction (SVC). In order to investigate Korean SVC's, I first introduce some general criteria for defining the SVC. Although there has been a lot of debate on the definition of SVC's up to now,¹ I will follow the Sebba’s (1987) definition for the construction:

(5) Criteria for SVCs:

In a sequence of the form V1…V2,

a. Both V1 and V2 must be lexical verbs, i.e. must be capable of appearing as the only verb in a simple sentence.

b. If it is possible to conceive of V1 and V2 as denoting separate action at all, then both V1 and V2 must be interpreted as having the same tense and aspect. Thus, for example, V1 may not be interpretable as ‘past’ if V2 is interpreted as ‘future’.

c. There must be an ascertainable clause boundary between V1 and V2, i.e. they must be within the same clause.

d. No conjunction should separate the verbs in sequence.

(Sebba(1987:39))

The criteria in (5) can tell us what an SVC is. Let’s take some typical SVC examples:

(6) Sranan

a. Den fon owrukuku kiri
   they beat owl kill
   ‘They beat the owl to death.’

b. Mi fringi a battra broke  
   I threw the bottle break  
   ‘I threw the bottle and it break.’

(7) Yoruba
a. Olu ti omo naa subu
   Olu push child the fall
   ‘Olu pushed the child down.’

b. Olopaa na ole naa be.
   Police whip thief the bleed
   ‘The police whipped the thief until he bled.’

(M. Baker (1989:529-30, (28)))

In (6a), the two verbs, fon ‘beat’ and kiri ‘kill’, meet all the criteria in (5); they can be used as single verbs independently, they denote a single event, there is no clausal boundary between them, and there is no conjunction marker. This is also the case in (7).

Korean also has the same type of verb conjunction, as illustrated in (8);

(8) Korean
a. John-i Mary-uy ot-ul cap-e tangi-ess-ta
   -Nom -Gen clothe-Acc hold-E pull-Past-Dec
   ‘John held/pulled Mary’s clothe.’ (‘John held and pulled Mary’s clothe.’)

b. John-i cip-uro ttwi-e ga-ess-ta
   -Nom house-to run-E go-Past-Dec
   ‘John ran/went to a house.’ (‘John ran and went to a house.’)

All the criteria in (5) are met in the sentence in (8). In (8), first, both verbs, cap- ‘hold’ and tangi- ‘pull’, can be used alone. Secondly, both verbs denote a single event (a fused meaning), taking the same tense. Thirdly, both verbs are in the same clause; i.e., there is
no clausal boundary between the two verbs. Finally, there is no conjunction; the suffix -e is not a conjunction in Korean.

However, there are two difference between Sranan (and Yoruba) SVC’s and Korean SVC’s. One is the word order; Korean is an SOV language, whereas Sranan is an SVO language. In Korean, the verbs come together consecutively, whereas in Sranan an object intervenes between the verbs. The second difference is that there is a suffix -e on the first verb in Korean, while in Sranan there is no affix between the verbs. But these difference do not necessary imply that the constructions are significantly different in the two languages. Following the criteria in (5), the constructions in the two languages can be subsumed under a single construction, an SVC.

Now let’s summarize the difference between, first, an SVC and a coordinate structure, and secondly, an SVC and a subordination structure. SVC’s differ from coordinate structures in the following ways: (i) in an SVC a single event is asserted, whereas in a coordinate structure two events are asserted, and (ii) in a coordinate structure a conjunction is used, whereas in an SVC no conjunction is used.

SVC’s differ from subordinate structures in the following ways; (i) in an SVC, neither verb is a complement of the other, whereas in a subordination structure one verb (phrase) is a complement of the other, and (ii) either verb in an SVC can be used alone, whereas in a subordination structure, the complement-taking verb cannot be used alone.

I propose the structure in (9) for the structure of SVC’s.

(9) Structure of Korean SVC’s

```
V
/\
V1 V2
```

In the structure in (9), neither verb takes the other as a complement. Note that the structure in (9) is different from a coordinate structure where a conjunction intervenes between the two verbs.
2.4 The suffix *-e*

We have seen that *-e* is suffixed to the first of the two verbs in a Korean SVC. This suffix does not have any semantic content. For the status of the suffix, I will follow M.-Y Kang(1988). Kang proposes that *-e* is just a verb final suffix to help a verb stem stand, because in Korean a verb stem is a bound morpheme, requiring a verb-final particle to be suffixed to it. Kang(1988:78) proposes the following principle:

(10) Morphological Closure

   Bound predicates must be ‘closed off’ by a set of suffixes belonging to the category C.

The category C suffixes are ones other than aspectual/tense/AGR/model suffixes: they are *-ta* (the Declarative marker), *-ca* (the Exhortative marker), *-la* (the imperative marker), *-e* (the Serial marker), etc. The first verb in an SVC is a verb stem, a bound morpheme, and it cannot stand alone. It requires the help of the suffix *-e* which belongs to category C. The second verb of a SVC will be suffixed with one of the category C suffixes, such as the Declarative marker.

The principle of Morphological Closure in (10) is related to the claim that an SVC is syntactic. If an SVC is a lexical construction; i.e., a lexical compound, its first verb will not need the suffix because it is not independent in the syntax. Only the whole verb has this status, so only it needs a suffix.

Alternatively, one may suggest that the suffix *-e* is a complementizer, an infinitive marker, or a linker (or a connective). However, it can be neither a complementizer nor an infinitive marker because both of the these types of suffixes appear in subordination structure and, as I have shown, an SVC is not a subordination structure.

---

5 Note that a coordination construction may denote a single event, but need not. On the other hand, an SVC denotes a single event necessarily.
One other possibility is that the suffix is a linker or a connective for combining two verbs, and thus one may suggest the following structure for an SVC:

(11) $\begin{array}{c}
\text{V3} \\
/ \mid \ \backslash \\
\text{V1} \ e \ \text{V2} \quad (\text{e: linker}) \\
\text{v3} [\text{V1} \ e \ \text{V2}]
\end{array}$

In a later derivation, the suffix -e will be suffix to V1. The structure in (11) will encounter a problem. The problem arise when an SVC has a delimiter. Some delimiter may intervene between the two verbs of an SVC, as shown in (12):


\hspace{1cm} -Top school-to walk-E-only go and come-Past-Dec

\hspace{1cm} ‘John came and went to school, only on foot.’

b. John-un hakkyo-ey kel-e-to tani-ess-ta

\hspace{1cm} -Top school-to walk-E-even go and come-Past-Dec

\hspace{1cm} ‘John came and went to school, even on foot.’

As shown in the interpretations, the delimiters take scope only over the verbs to which they are suffixed. Thus, we may suggest the following basic structure in (13):

(13) $\begin{array}{c}
\text{v3} [[ \text{V1 Del} ] -e \ \text{V2}] \\
\end{array}$

(Del: Delimiter)

Here I assume that a delimiter is adjoined to a category over which it takes scope. Now we have a problem because the structure in (13), V1+Del+e+V2, does not refer the surface structure, V1+e+ Del +V2, as shown in (12). We need some kind of solution to get the correct structure from the structure in (13). The operation would transpose the
suffix and the delimiter, or else it would be an infixation operation, which is unheard of in Korean.

However, the same problem arises in coordinate structure where a verb suffixed by a conjunction marker may also be suffixed by a delimiter, as shown in (14):

(14) John-un ku chayk-ul ani ilk-ko-to ihayha-ess-ta
   -Top the book-Acc Neg read-Conj-even understand-Past-Dec
   'John understood the book, even without reading (it).'

We may assume the structure in (15) for the coordinate structure in (14):\(^{18}\)

(15) \[ VP \\
      /   |   \ \\
     VP1 Conj VP2 \\
    /   |   \\
   V    V2 \\
   /   \ \\
  V1 Del \\
 VP[VP1[VP1[VP1[VP1[VP1[VP[V1 Del]] Conj VP2][V2]]]]]]

Here again, the structure in (15) is different from the surface structure; the structure in (15) is V1+Del+Conj+V2, but the surface structure in (14) is V1+ Conj + Del +V2. I will leave open the possibility that the suffix -e in an SVC may be a linker combining two verbs.

The representation approach, adopting Morphological Closure in (10), will assume the following structure for an SVC with a delimiter:

(15) \[ V3 \\
      /   \ \\
     V1   V2 \]
\[
\begin{align*}
V_1 & \text{ Del} \\
v_3[v_1[V_1 \text{ Del}] V_2]
\end{align*}
\]

The lower $V_1$ will get the suffix `-e` by Morphological Closure (10), assuming that a delimiter is not a closure suffix.

3. Negation and Complex Verb Constructions

In this section, I will discuss some basic facts of Korean complex verb constructions, based on negation which is an important tool for telling one structure from the others.

3.1 Scope of Negation

Korean has two types of negation: short-form negation and long-form negation, as illustrated below:

(17) a. Short-form Negation

\begin{align*}
\text{motu-ka} & \quad \text{ani} & \quad \text{mek-ess-ta} \\
\text{all-N} & \quad \text{NEG} & \quad \text{eat-Past-Dec}
\end{align*}

`Nobody ate.`

b. Long-form Negation

\begin{align*}
\text{motu-ka} & \quad \text{mek-ci} & \quad \text{ani} & \quad \text{ha-ess-ta} \\
\text{all-N} & \quad \text{eat-Comp} & \quad \text{NEG} & \quad \text{do-Past-Dec}
\end{align*}

(1) ‘Nobody ate.’

(2) ‘Not everyone ate.’
Sentence (17a) contain short-form negation, and sentence (17b) contains long-form negation where the main verb *mek*-'eat' is followed by the verb *ha*-'do'.

In this section, I am concerned only with short-form negation, and will use its scope phenomenon which is agreed on by many linguists (Han (1987, 1993), Suh(1990), and Cho(1992), among others). The rule for the scope of short-form negation is given in (18):

(18) Scope of ani

       ani has a scope over the verb to which it attaches.

The rule in (18) can be represented schematically, as in (19):

(19)

                      V
               /     \
            /       \
       NEG    V

The scope of short-form negation is so narrow that it has scope over the verb to which is adjoined. The representation in (19) is supported by the fact that, in short-form negation, the negative morpheme *ani* is adjoined only to a lexical verb, but never to a quantifier, a noun, or an adverb, as shown in (20):

(20) a. motun salamtu-l  ani  ca-ess-ta

          all  people-Nom  NEG  sleep-Past-Dec

     ‘All people did not sleep.’ (Nobody slept.)

b. *ani  motun  salamtu-l  ca-ess-ta

          NEG  all  people-Nom  sleep-Past-Dec

     ‘Not all people slept.’

c. *ani  salamtu-l  ca-ess-ta

          NEG  People-Nom  slept-Past-Dec

     ‘Not people slept.’
d. * motun salamul-i ani ppalli ca-ess-ta
   all people-Nom NEG quickly sleep-Past-Dec
   ‘All people did not sleep quickly.’

In (20), we can see that the negative morpheme *ani* appears only before a lexical verb. An element is not allowed to intervene between the morpheme and a verb, and thus, in (20d), the negative morpheme cannot take scope over the verb crossing over the intervening adverb.

### 3.2 Complex Verb Constructions with Short-form Negation

In this section, I will distinguish a complex verb construction from others by using the scope of short-form negation. First, let us consider the scope of negation in SVC’s. Note that the SVC’s in (21) have ambiguous reading with respect to the scope of negation:

   John-Nom NEG Walk-E go-Past-Dec
   (i) ‘It is not the case that John went on foot.’
   (ii) ‘John went, not on foot.’

   b. John-i sakwa-lul ani ssiss-e mek-ess-ta
      -Nom apple-Acc NEG wash-E eat-Past-Dec
      (i) ‘It is not the case that John washed/ate an apple.’
      (ii) ‘John ate an apple, without washing it.’

The negative morpheme in (21) may take scope over both verbs of the SVC, or it may take scope only over the first verb. To explain the ambiguous readings in (21), let us first
consider the structure of the SVC. It is assumed that there is no clausal boundary between
the two verbs of an SVC because an SVC is mono-clausal. Thus, I propose the structure
in (22) for SVC’s. Based on the SVC structure in (22) and the structure in (19), we may
represent the structure of the negated SVC structure in (21) as in (23):

(22) = (9)
  V
  /\    
 V1  V2

(23) a.  V  b.  V
  / \    / \    / \    / \\
 NEG  V  V1  V2
  / \    / \
 V1  V2  NEG  V1
  v[NEG v[V1 V2]]  [[NEG V1] V2]

Following the rule in (18), we get the wide negation over both verbs (V1 and V2) in
(23a), whereas in (23b) we get narrow scope negation only over the first verb (V1). Note
that the verb V in (23) are zero-level verbs since verb serialization involves only lexical
verbs, and the negative morpheme may be adjoined only to a lexical verb.

Now let’s consider the negation scope in the following verbal coordinate
construction:

(24) John-i  ku  chayk-ul  ani  ilk-ko  cu-ess-ta
     -Nom the book.Acc NEG read-Conj give-Past-Dec
  ‘John gave the book, without reading (it).’

In (24), the negative morpheme takes scope only over the first verb. Because we apply the
scope rule in (18) to the coordinate sentence in (24), we should first determine the

---

*In (20d), with a strong stress on the adverb, the sentence may be possible. See H.-D. Ahn(1991) for the*
structure of the sentence in (24); (24) involves a VP, not coordination. This can be shown by adverb insertion, as seen in (25):

    -Nom the book-Acc NEG read-Conj quickly give-Past-Dec

    ‘John quickly gave the book, without reading (it).’

The sentence in (25) allows an adverb to intervene between the two verbal conjunct. This indicate that (25) involves VP coordination.

It is observed that the negative morpheme ani may not be adjoined to a V coordinate construction in Korean. Some examples are given below:

(26) a. John-i cip-ey ani nol-ko ka-ess-ta
    -Nom house-to NEG play-Conj go-Past-Dec

    ‘John did not play and then went to house.’

b. John-i sakwa-lul ani ssiss-ko mek-ess-ta
    -Nom apple-Acc NEG wash-Conj eat-Past-Dec

    ‘John did not wash the apple and then ate it.’

    (‘John ate the apple without washing it.’)

c. Mary-ka ku capci-lul ani ilk-ko peli-ess-ta
    -Nom the magazine-Acc NEG read-Conj throw away-Past-Dec

    ‘Mary threw away the magazine without reading it.’

The scope of short-form negation in (26) is always over the first verb of the coordinate structure. This generalization is represented as in (27):

(27)     V3
          / \  
          \   /  
          NEG V3

discussion.
\[ / \ \backslash \]
V1 Conj V2
\[ v_3[\text{NEG } v_3[V1 \text{ Conj } V2]] \]

On the other hand, we have already seen that the negative morpheme can be adjoined to an SVC, as in (23a), repeated in (28):

(28) \[ V2 \]
\[ / \ \backslash \]
NEG V2
\[ / \ \backslash \]
V1 V2
\[ v_2[\text{NEG } v_2[V1 \text{ V2}]] \]

To explain the contrast between (27) and (28), I propose the following condition on the negative morpheme \textit{ani}:

(29) Morpho-syntactic Condition on \textit{ani}

\textit{ani} may be adjoined only to a morpho-syntactic verbal head.

In the SVC in (28), only the final verb is the morpho-syntactic head of the SVC because, for example, a tense marker attaches only to the final verb. But the first verb in an SVC is not the head of the SVC. Thus, according to the rule in (29), the negative morpheme may be adjoined to the final verb V2 in (28), which is a head. On the other hand, in the coordinate structure in (27), both verbs V1 and V2 are heads of the construction and the final verb V3 cannot be said to be the head of the whole coordinate construction. This is why the negative morpheme \textit{ani} cannot be adjoined to a V coordinate construction. As expected, in a VP conjoined construction, the negative morpheme may be adjoined either to the first verb or the final verb or to both, as shown, respectively, in the following:
    -Nom the book-Acc NEG read-Conj return-Past-Dec
    ‘John returned the book, without reading (it).’
b. John-i ku chayk-ul ilk-ko ani pannapha-ess-ta
    -Nom the book-Acc read-Conj NEG return-Past-Dec
    ‘John read the book and then did not return it.’
c. John-i ku chayk-ul ani ilk-ko ani pannapha-ess-ta
    -Nom the book-Acc NEG read-Conj NEG return-Past-Dec
    ‘John did not read the book and did not return it.’

Now let’s consider subordination constructions. In section 2.1.2, I have shown that in a subordinate construction, one verb takes a phrasal complement. I have also shown that in a subordinate construction, the negative morpheme may take scope over either the embedded verb or the main verb, depending on its position, as repeated below:

(31) a. John-un apeci-ka ani o-si-key ha-ess-ta (3b)
    John-Top father-Nom NEG come-Hon-Comp cause-Past-Dec
    ‘John caused father not to come.’
b. John-i apeci-ka o-si-key ani ha-ess-ta
    John-Nom teacher-Nom come-Hon-Comp NEG cause-Past-Dec
    ‘John did not cause father not to come.’

The scope of negation in (31a) is only over the embedded verb, and in (31b) it is over the final verb. This is predicted by the scope rule in (18). The scope difference in (31) are represented in (32a) and (32b), respectively:

(32) a. \[
    \begin{array}{c}
    V3 \\
    \text{XP} V2 \\
    : \\
    \end{array}
    \begin{array}{c}
    V \\
    \text{XP} V2 \\
    : \\
    \end{array}
\]
As the scope rule in (18) predicts, (32a) shows the reading in (31a), and (32b) shows that in (31b).

I have shown that, in a subordinate structure, one verb take a phrasal complement, which I call syntactic subordination. Now I will introduce lexical subordination which is different from syntactic subordination. Consider the negation scope in the following sentences:  

(33) John-i ku sosel-ul ani ilk-e po-ess-ta  
     -Nom the novel-Acc NEG read-E attempt-Past-Dec  
     (i) ‘John did not attempt to read the novel.’  
     (ii) ‘John attempted not to read the novel.’

Sentence (33) is ambiguous and this is not predicted by the subordination structure introduced earlier and the scope rule in (18). The unexpected negation scopes result from a different subordination structure, but not from the scope rule in (18). Following Sells and Cho(1991), I suggest the structure in (34) for the subordination construction in (33):

(34) V2  
     / \  
     V1  V2

In (34), two lexical verbs, V1 and V2 are combined to from another verb, V2. In this subordination, one verb takes another verb as a complement, which is different from serialization, and the category of V2 is lexically determined: that is, only a limited

---

7 The data and test of the scope of negation in the structures in (33) are due to Sells and Cho(1991).
number of verbs can take a lexical verbal complement. I call this subordination lexical subordination.

That only lexical verbs are combined in (34) can be shown by the fact that virtually no element intervenes between the two verbs, as shown in (35):

   -Nom the novel-Acc read-E eagerly attempt-Past-Dec
   ‘John eagerly attempted to read the novel’

b. *apeci-ka atul-cykey chayk-ul ilk-e yelsimhi cwu-si-ess-ta
   father-Nom son-Dat book-Acc read-E eagerly give-Hon-Past-Dec
   ‘Father eagerly read books for his son.’

In addition, only the final verb in the subordination structure in (36) agrees with the main subject:

(36) apeci-ka ku ssel-ul ilk-*usi*-e po-*si*-ess-ta.
   father-Nom the novel-Acc read-Hon-E attempt-Hon-Past-Dec
   ‘Father attempted to read the novel.’

The agreement phenomenon in (36) also suggests that the first verb ‘read’ in (36) is not a phrasal category.

Based on the structure in (34) and the scope rule of negation in (18), we can explain the ambiguous reading in (33), as represented in (37):

(37) a. V2
    / \          b. V2
    / \        / \          / \          / \          / \
NEG V2       V1 V2        V1 V2        NEG V1
    / \               / \       / \               / \
    V1 V2             V2[NEG v2[V1 V2]] V2[v1[NEG V1] V2]
The representation in (36) show that the negation morpheme takes scope over either the first verb or the two verbs. The scope phenomenon in this subordination construction is exactly like that in SVC’s. Now we can see that the negation scope rule in (18) give correct reading for lexical subordination constructions, based on the structure in (34).

Now I have argued that Korean has two types of subordinations: syntactic and lexical. Syntactic subordination is where one verb takes a phrasal complement, and lexical subordination is where one verb takes a zero-level complement. The two types are summarized in (38):

\[
\begin{align*}
(38) \text{a. Syntactic Subordination} & \quad \text{b. Lexical Subordination} \\
Y' & \quad Y \\
/ \ \ / \ \ / \ \ / \ \\
XP \ Y^0 & \quad X \ Y
\end{align*}
\]

What syntactic and lexical subordination structure have in common is that, in both cases, one verb takes another category as a complement. The difference between them is in the level of the complement.

3.3 A Morphological Condition

It is predicted from the lexical subordination and serialization structure that the second verb can be negated, as shown below:

\[
\begin{align*}
(39) \quad V \\
/ \ \ / \ \\
V1 \ V2 \\
/ \ \ / \ \\
\text{NEG} \ V2 \\
v[V1 \ v2[\text{NEG} \ V2]]
\end{align*}
\]
NEG, which may be adjoined to a lexical verb, is also a lexical category and thus it may be adjoined to V2 in (39). However, this prediction is not borne out. I will suggest a reason that (39) is not allowed.

The sentence in (40) are SVC’s in which the negative morpheme is adjoined to the final verb.

(40) a. ?? John-i chayksang-ul cap-e ani tangki-ess-ta
    -Nom desk-Acc hold-E NEG pull-Past-Dec
    ‘John hold the desk and not pulled it.’

b. ?? John-i hakkyo-ey kel-e ani ka-ess-ta
    -Nom school-to walk-E NEG go-Past-Dec
    ‘John did not go to school, on foot.’

The sentence in (40a) are not good as SVC’s. If there is a pause after the first verb and before the negative morpheme, the sentence become better, but they are not SVC’s. the same phenomenon can be seen in the lexical subordination structure in (41).

(41) a. *John-i mek-e ani po-ess-ta
    -Nom sleep-E NEG attempt-Past-Dec
    ‘John did not attempt to eat.’

b. *John-i atul-eykey chayk-ul ilk-e ani cwu-ess-ta
    -Nom child-Dat book-Acc read-E NEG give-Past-Dec
    ‘John read/not gave the book for hi son.’

The question is why (39) is not allowed. Since the negative morpheme may be adjoined to a lexical verb, there seems to be no syntactic reason to prevent the structure in (39). I suggest that the negative morpheme ani is not an element which may intervene between lexical verbs. Only the subject plural marker -tul and some of the delimiters can intervene between the verbs. Note also that an intervening element must be a lexical
category, or the realization of a syntactic feature. Thus, I may assume that the negative morpheme ani is not an element which can intervene between lexical verbs.

4. Pseudo-SVC’s

In this section, I will first distinguish SVC’s from pseudo-SVC’s: lexical compound verbs and the /ko/ constructions where the latter two constructions are named for their suffixes. For expository purposes, I call SVC’s the /e/ construction, naming it after the suffix -e, and I will use the two terms interchangeably.

4.1 Lexical Compounding Verbs

There are lexical compound verbs which should be distinguished from the /e/ construction, the syntactic serial verb construction.

One clear distinction between the lexical compound verb construction and the /e/ construction is obviously the absence of the suffix -e in the former. We have seen that -e is suffixed to the first verb of an SVC by the principle of Morphological Closure. If two verbs are combined in lexicon, then the suffix need not be added to the first verb because the whole verb behaves as a single unit. Some lexical compound verbs are illustrated in the following examples:

(42) a. olu-nayli
   go up-go down
   ‘go up and down’ ‘fluctuate’

   b. o-ka-
   come-go
   ‘come and go’

   c. nal-ttwi-
   fly-run
   ‘act violently’

   d. chi-pat-
   hit-butt
   ‘give cuffs and buffs’ (Y.Kim (1984b:152))

---

8 The subject plural -tul may be considered the realization of a syntactic feature.
(43) a. tol-po-
   turn around-see
   ‘look after’
c. pil-pwuth-
   beg-stick
   ‘fawn (upon)’

b. pil-mek-
   beg-eat
   ‘go begging’
d. ttwi-nol
   run-play
   ‘skip about’ (Y.-S Kim (1984b:155))

In the above lexical compound verb, we cannot see the suffix -e between verbs, and only two verbs stems are combined. Note also that the meanings of many of the lexical compounds are figurative or far from the original meanings of the component verbs. In this type of lexical compound verb, neither component verb will behave independently in the syntax. Rather, the whole compound verb will behave as a single unit and thus there will be no suffix insertion, according to the principle of Morphological Closure. This type of compounding is no longer productive in present-day Korean (Y.-S Kim (1984b:145)).

Some verbs can combine to form either an SVC or a lexical compound verb, with a corresponding contrast in meaning. This is shown in the following pair of examples.

(44) a. lexical compound verb

Mary-ka aki-lul cal tol-po-ess-ta
   -Nom baby-Acc well turn around-see-Past-Dec
   ‘Mary looked after the baby well.’

b. serial verb

Mary-ka aki-lul tol-e po-ess-ta
   -Nom baby-Acc turn around-E see-Past-Dec
   ‘Mary turned around/saw the baby.’

In (44a, b) the lexical compound verb and the SVC contain the same component verbs, tol- ‘turn around’ and po- ‘see’. The lexical compound verb in (44a) has a figurative meaning, ‘look after’, but the SVC in (44b) retains the meanings of its component verbs,
‘turn around/see’. The meanings of the lexical compound verbs are often not predictable from the component verbs, although there are predicable cases.

However, note that there are some lexicalized idomatic SVC’s. An idomatic SVC is one which at some point started as an SVC and later became lexicalized. The following are examples:

(45) John-uy halapeci-kkeyse tol-e ka-si-ess-ta
    -Gen grandfather-Nom turn-E go-Hon-Past-Dec
    ‘John’s grandfather passed away.’

(46) John-i swuhak-ey ttwi-e na-ta
    -Nom math-at run-E come out-Dec
    ‘John is excellent at math.’

In (45), the verb tol-e ka-si- ‘pass away’ is an idomatic SVC which is used only for persons considered to be respectable. In (46), the verb ttwi-e na- has a idomatic meaning, ‘excellent’.

4.2 The /ko/ Construction

Now let’s compare the /el/ construction and the /ko/ construction, which is a type of conjunction. Compare the following two constructions, which are identical except for the suffixes:

(47) a. koyangi-ka cwi-lul cap-e mek-ess-ta
    cat-Nom rat-Acc catch-E eat-Past-Dec
    ‘The cat caught/ate the rat.’

b. koyangi-ka cwi-lul cap-ko mek-ess-ta
    cat-Nom rat-Acc catch-KO eat-Past-Dec
‘The cat caught the rat and ate it.’

Sentence (47a) Expresses a single event where two sub-events are fused into one. On the other hand, sentence (472b) is a typical coordinate structure where the conjunction marker -ko is used, and it expresses two separate events in a sequence.

I will present two phenomenon to distinguish the /le/ and the /ko/ constructions. The first one is a scope of negation. Consider what the scope of the negative morpheme is in the following two examples:

(48) a. kay-ka koki-lul ani mwul-e ka-ess-ta
   dog-Nom meat-Acc NEG bite-E go-Past-Dec
   (i) ‘It is not the case that the dog went with the meat in its mouth.’
   (ii) ‘The dog went, without the meat in its mouth.’

b. kay-ka koki-lul ani mwul-ko ka-ess-ta
   dog-N meat-Acc NEG bite-KO go-Past-Dec
   ‘The dog did not bite the meat and then he went.’
   (‘The dog went without the meat in its mouth.’)

In (48b) the scope of negation is only over the first verb, whereas in (48a) it may scope the two verbs. This negation scope phenomenon shows that the /le/ construction and the /ko/ construction are different, implying that the /ko/ construction in (48b) is a VP-conjunction structure. If there is a pause between the two verbs in (48a), then we can only get a reading like (48b), the negative morpheme scoping only the first verb.

The second phenomenon is adverb insertion. An adverb may not be inserted in the /le/ construction, whereas it may or may not be insertion in the /ko/ construction, depending on its internal structure. If the /ko/ construction is formed from phrasal conjunctions, then an adverb may be inserted between the two verbs, modifying the second verb. If, however, the /ko/ construction is formed of lexical verbs, then an adverb may not be inserted. Sentence (49a) is an example of the /le/ construction, and sentence (49b), an example of the /ko/ construction whose conjunctions are VP:
(49) a. ?? John-i aki-lul an-e ppalli ka-ess-ta
   -Nom baby-Acc take hold of in arms-E quickly go-Past-Dec
   'John quickly carried the baby away in his arms.'
   b. John-i aki-lul an-ko ppalli ka-ess-ta
   -Nom baby-Acc take hold of in arms-KO quickly go-Past-Dec
   'John went quickly, holding the baby in his arms.'

The sentence in (49) show that the /el/ construction does not allow an adverb to intervene between the two verbs modifies the second verbs, whereas the /ko/ construction does. Note that the adverb intervening between the two verbs modifies the second verb. This adverb insertion shows that the /el/ construction is different from the /ko/ construction.

Sometimes the /ko/ construction contains only zero-level verbs. The sentence in (50) are V-conjoined structures.

(50) kakye-eyse salamul-i mwulken-ul sa-ko phal-ess-ta
    store-in people-Nom thing-Acc buy-KO sell-Past-Dec
    'People bought and sold things in the store.'

As discussed in Section 2.2.2., the V-conjunction structure in (50) will behave differently from the VP-conjoined structure in (49b). consider the scope of negation and adverb insertion in (51).

(51) a. Negation
    kakye-eyse salamul-i mwulken-ul ani sa-ko phal-ess-ta
    store-in people-Nom thing-Acc NEG buy-KO sell-Past-Dec
    'It is not the case that people bought and sold things in the store.'
   b. Adverb Insertion
    sicang-eyse salamul-i mwulken-ul sa-ko chenchenhi phal-ess-ta
    market-in people-Nom thing-Acc buy-KO slowly sell-Past-Dec
‘People bought and slowly sold things in the market.’

The phenomenon in (51) can be accounted for by assuming the structure in (52) for the coordinate structure:

(52) \[
\begin{array}{c}
\text{V3} \\
/ & | & \backslash \\
\text{V1 conj V2}
\end{array}
\]

The structure in (52) is a V-conjoined construction; an adverb may not intervene between the two lexical verbs. The negative morpheme may not be adjoined to a V-conjoined structure because of the morphological condition on ani discussed earlier. This condition says that ani may be adjoined only to a morpho-syntactic head. In (52), the verb V3 is not such a head and thus the negative morpheme may not be adjoined to it.

There are some cases where the /ko/ construction has a meaning similar to that of the /e/ construction. Compare the meaning of the sentences in (53):

(53) a. Mary-ka atul-lul an-e ka-ess-ta
    -Nom son-Acc take hold of in arms-E go-Past-Dec
    ‘Mary took hold of her son and went.’
    (‘Mary carried her son away in her arms.’)

   b. Marry-ka atul-lul an-ko ka-ess-ta
      -Nom son-Acc take hold of in arms-KO go-Past-Dec
      (i) ‘Mary held her son in her arms and went.’
      (ii) ‘Mary went, holding her son in her arms.’

Sentence (53a) is a sentence of the /e/ construction; i.e., an SVC, and sentence (53b) is one of the /ko/ constructions; i.e., a coordinate structure. Note that the /ko/ construction in (53b) is ambiguous and the meaning in (53bii) is almost identical to that of (53a).
Here I argue that the two constructions in (53) are different; one is an /e/ construction, and the other is a /ko/ construction. I will explain that the particular meaning in the /ko/ construction in (53b) is due to a lexical property of the verb.

I will first show that the constructions in (53) are instances of the /e/ construction and the /ko/ construction, respectively, and then I will examine what lexical properties the verbs have and why the properties induce some particular meaning on the /ko/ construction.

First, the short-form negation and adverb insertion in (54) demonstrate the previously-discussed difference between the two constructions:

(54) Negation

a. Mary-ka atul-lul ani an-e ka-ess-ta
   -Nom son-Acc NEG take hold of in arms-E go-Past-Dec
   (i) ‘It is not the case that Mary carried the baby away in her arms.’
   (ii) ‘Mary went away, without holding the baby in her arms.’
   (implying that she carried the baby not in her arms but some other way.’)

b. Mary-ka atul-lul ani an-ko ka-ess-ta
   -Nom son-Acc NEG take hold of in arms-KO go-Past-Dec
   (i) ‘Mary did not hold her son in her arms and went.’
   (ii) ‘Mary went, without holding her son in her arms.’

(55) Adverb Insertion

a. Mary-ka atul-lul an-e ppalli ka-ess-ta
   -Nom son-Acc take hold of in arms-E quickly go-Past-Dec
   ‘Mary quickly carried her son away in her arms.’
   (‘Mary carried her son away in her arms.’)

b. Mary-ka atul-lul an-ko ppalli ka-ess-ta
   -Nom son-Acc take hold of in arms-KO quickly go-Past-Dec
   (i) ‘Mary held her son in her arms and went quickly.’
   (ii) ‘Mary went quickly, holding her son in her arms.’
As predicted, the scope of negation in (54) differentiates the two constructions. In (54a), the negative morpheme can take scope over all the verbs, whereas in (54b) it never takes scope over the second verb 'go'. These different negation scope are what the /e/ construction and the /ko/ construction are expected to show. As well, adverb insertion differentiates the two constructions, as predicted; and adverb may not intervene between the two verbs in the /e/ construction, but it may, in the /ko/ construction.

One more distinction between the two sentences in (55) can be made in the selection of aspectual adverbs. Compare the two sentences in (56), where an aspectual adverb is used.

(56) a. "Mary-ka han sikan tongan atul-ul an-e ka-ess-ta\n        -Nom one hour for baby-Acc take hold of in arms-E go-Past-Dec\n        'Mary carried her son away in her arms for an hour.'
        ('Mary went, taking hold of her son in her arms for an hour.')

b. "Mary-ka han sikan tongan stul-ul an-ko ka-ess-ta\n        -Nom one hour for son-Acc take hold of in arms-KO go-Past-Dec\n        'Mary went, holding her son in her arms for an hour.'

Sentence (56a) is not acceptable because it implies that it took an hour for Mary to take hold of the baby in her arms. On the other hand, (56b) is acceptable because Mary may go, holding the baby in her arms for an hour.

When we get the particular meaning in the /ko/ construction as in (53bii), the resultative state of the first verb obtains during the event of the second verb. Let's call this interpretation of the /ko/ construction the resultative interpretation. The resultative interpretation is not limited to the sentence in (68b), but it happens to some particular type of verbs. To see the resultative interpretation, let's consider some other cases. It is pointed out by several linguists that the form V-ko iss- in Korean is ambiguous, as shown below:
(57) ku-nun moca-lul ssu-ko iss-ta
    he-Top hat-Acc put on-KO be-Dec
(i) 'He is putting on a hat.'
(ii) 'He is in the state of wearing a hat.'
    ('He put on a hat and now he wears a hat.')
    (K. Lee (1978:374))

I suggest that sentence (57) is structurally ambiguous: one construction is a progressive form, and the other is that of the /ko/ construction (i.e., a conjunction construction). This means that the second verb iss- 'be/exist' in (57) is not a main verb in the progressive form but an aspectual auxiliary verb, whereas in the /ko/ construction, it is main verb. As an instance of the /ko/ construction—a V’ conjoined structure—sentence (57) behaves exactly like we would like predict. Consider the scope of negation and the adverb insertion in (55) and (56):

(58) Negation
    ku-nun moca-lul ani ssu-ko iss-ta
    he-Top hat-Acc NEG put on-KO be-Dec
    He is in the state of not wearing a hat.'

(59) Adverb Insertion
    ku-nun moca-lul ssu-ko pang-aney iss-ta
    he-Top hat-Acc put on-KO room-in be-Dec
    'He is in the room, wearing a hat.'

In (58), the scope of negation is only over the first verb, and in (59) an adverb may intervene between the two verbs, modifying the second verb. This is what the /ko/ construction is expected to show. Like /ko/ constructions, the sentences in (58) and (59) show the resultative interpretation.
The final thing to note about the resultative interpretation of the /ko/ construction is that only a limited number of verbs, "wearing or contact verbs", can have the resultative interpretation, as K. Lee (1978) observes. Some of these are listed in (60):

(60) ssu- ‘put on (a hat or glasses)’
    sin- ‘put on (shoes or socks)’
    may- ‘tie (a tie or a ribbon)’
    ip- ‘put on(clothes)’
    kki- ‘put on (gloves)’ (K Lee (1978:374))

All the verbs in (60) may denote a result state where the object (a theme) contacts the body of the subject (an agent).

The following illustrate more examples of the /ko/ construction where the contact verbs are used.

(61) a. Mary-ka moca-lul ssu-ko ka -ess-ta
    -Nom hat-Acc put on-KO go-Past-Dec
    ‘Mary went, wearing a hat.’

b. Mary-ka ppalkan os-lul ip-ko ka-ess-ta
    -Nom red clothes-Acc put on-KO go-Past-Dec
    ‘Mary went, wearing red clothes.’

c. Mary-ka kkaman kwutwu-lul sin-ko ka-ess-ta
    -Nom black shoe-Acc put on-Ko go-Past-Dec
    ‘Mary went, wearing black shoes.’

My conclusion concerning the resultative interpretation of the /ko/ construction is that this interpretation is due to the lexical properties of some particular verbs.

To summarize this section, I have distinguished the /e/ construction from the lexical compound verb construction and the /ko/ construction. Several phenomenon are presented to distinguish the /e/ construction from the others. I conclude that only the /e/
construction is an SVC and the other construction are not. To study SVC's correctly, we need to single out the genuine SVC's.

5. Previous works on SVC's

In this section, I will briefly discuss previous work done on SVC's in Korean. There have been three main approaches to this construction. First, the SVC have been treated as a compound verb construction by some linguists. In the early transformational period, it was treated as a bi-clausal construction. Recently, it was treated as a serial verb construction. I will discuss each approach briefly. As before, for expository reason, I will use the terms SVC's and /e/ construction interchangeably.

5.1 The Compound Verb Approach

H. B. Choi(1935) gives a detailed description of the /e/ construction. His description are summarized as follows:

(62) V1-e + V2 Construction
   a. the construction has a fused meaning of V1 and V2
   b. no word can be inserted between the two verbs.
   c. the suffix -se cannot be suffixed to the V1-e
   d. the suffix -e is an adverbial suffix

   (Choi (1935:282-284))

In accordance with what was said in previous section, I think that all the observation in (62) are correct except for (62d). observation (62b) and (62c) are argued against by some linguists because they think that the suffix -se is an optional element. They also claim that some words seem to be inserted between the two verbs. Concerning (62d), it is not clear
why the suffix -e should be adverbial. Choi’s argument seems to be based on a purely semantic interpretation of the construction: that is, the first verb seems to modify the second like a manner adverb. But there is no syntactic evidence that the first verb plus the suffix -e is an adverb.

In fact, Choi does not commit himself to the claim that the /e/ construction is a compound verb construction. Rather, he only suggests that it is better to call the construction by this name. Thus, I cannot tell whether he considers the /e/ construction to be a lexical construct or a syntactic one. Since Choi calls the /e/ construction a compound verb construction, some linguists have followed his terminology.

It seems that some linguists have so far considered the /e/ construction as a lexical compound construction. But if one assumes that the /e/ construction is a syntactic compound verb construction, then the compound approach does not differ fundamentally form the present SVC approach.

5.2 The Bi-clausal Approach

Some Korean linguists in the early period transformational generative grammar argue that the /e/ construction is bi-clausal, and the suffix -e is considered as a sort of complementizer. In this approach, it is assumed that one underlying sentence is embedded in another sentence in the /e/ construction.

There is, however, evidence that the /e/ construction is not bi-clausal, but mono-clausal, syntactically. As shown in Section 2.2., the scope of negation shows that the /e/ construction is mono-clausal. Let’s consider the scope of negation again in the following examples:

(63) John-i say-ul ani cap-e o-ass-t
    John-Nom bird-Acc NEG catch-E come-Past-Dec
(i) ‘It is not the case that John caught and brought a bird.’
(ii) ‘John came, without (catching) a bird.’
In (63), the negative morpheme may scope either the first verb or the two verbs. These different scope are represented in (64):

(64) a. \[ V2 \]
    \[ \begin{array}{c}
          / \\
         V1 \ V2 \end{array} \]
    \[ \begin{array}{c}
          / \\
         \text{NEG} \ V2 \end{array} \]
    \[ \begin{array}{c}
          / \\
         \text{NEG} \ V1 \end{array} \]
    \[ v_2[v_1[\text{NEG} \ V1] \ V2] \]

b. \[ V2 \]
    \[ \begin{array}{c}
          / \\
         V1 \ V2 \end{array} \]
    \[ \begin{array}{c}
          / \\
         \text{NEG} \ v_2[v_1 \ V1 \ V2] \end{array} \]

In contrast, in a syntactic subordination structure where one verb takes a phrasal complement, the scope of negation is different, as shown below:

(65) a. John-i Mary-lul ani ka-key ha-ess-ta
    -Nom -Acc NEG go-Comp do-Past-Dec
    ‘John caused Mary not to go.’

b. John-i Mary-ka ani coh-ta-ko malha-ess-ta
    -Nom -Acc NEG good-Dec-Comp say-Past-Dec
    ‘John said that Mary was not good.’

In (65), the negation takes scope only over the first verb, the one to which the negative morpheme is adjoined, not over the second (or not over the two verbs). This phenomenon clearly shows that the \( /e/ \) construction, an SVC, is mono-clausal, not bi-clausal.

5.3 The Serial Verb Approach

Some linguists have started to consider the \( /e/ \) construction as an SVC. I will introduce their proposals briefly and point out its possible problems.
H. Jo (1990) presents the SVC approach to the \( le/ \) construction in the GPSG framework, where she gives the following structure:

\[
\begin{array}{c}
\text{VP/NP[\( \alpha \)]} \\
/ \quad \backslash \\
\text{VP/NP[\( \alpha \)]} \quad \text{VP/NP[\( \alpha \)]}
\end{array}
\]

(I.-H. Jo (1990:250))

Structure (66) is like the VP-conjoined structure except for the object-sharing property, which is expressed by the \([\alpha]\) notation. Unfortunately, representation (66) wrongly predicts that an adverb may be inserted between the two verbs. This does not conform to the facts in Korean, as shown below:

    -Nom school-to walk-E go and come-Past-Dec
    ‘John went and came to school on foot.’

    -Nom school-to walk-E quickly go and come-Past-Dec
    ‘John quickly went and came to school on foot.’

(68) a. John-i uyca-lul tul-e nalu-ess-ta
    -Nom chair-Acc lift-E carry-Past-Dec
    ‘John lifted/carried the chair.’

b. ??John-i uyca-lul tul-e ppalli nalu-ess-ta
    -Nom chair-Acc lift-E quickly carry-Past-Dec
    ‘John lifted/carried the chair quickly.’

Representation (69) also has difficulty in explaining the construction where the two verbs do not share an object, as shown below:

(69) a. Mary-ka ku inhyeng-ul an-e o-ess-ta
-Nom the doll-Acc hold-E come-Past-Dec

‘Mary brought the doll in her arms.’

b. John-i tam-ul ttwi-e nem-ess-ta

-Nom fence-Acc jump-E go over-Past-Dec

‘John went over the fence, by jumping.’

The second verb in (69a) and the first verb in (69b) are intransitive verbs, and thus the two verbs in each sentence above do not share an object, contrary to the representation in (69).

6. Summary

In section 2, we distinguished serialization from coordination and subordination. Serialization differs from coordination in that the former does not use any conjunction and it makes only one assertion, whereas the latter uses a conjunction and it makes two assertions. Serialization differs from subordination in that, in the former, one verb does not take the other as a complement (or argument), whereas in the latter, it does. Section 3 discusses the scope of short-form negation, which is a convincing test for distinguishing serialization from other similar constructions. The negative morpheme takes scope only over the verb to which it is adjoined and this enables us to distinguish SVC’s from other constructions. Section 4 distinguishes genuine SVC’s from pseudo-SVC’s –i.e., lexical compound verb constructions, and /ko/ constructions. In lexical compound constructions, the suffix -e which is added to the first verb of an SVC does not appear, and the meaning of a lexical compound verb of a lexical compound verb tends to be figurative, or non-compositional, whereas that of an SVC is generally compositional. The scope of negation easily distinguishes SVC’s from /ko/ constructions; in the former, it can be ambiguous, whereas, in the latter two constructions, it cannot. Section 5 examines previous work on SVC’s and points out some problems with this work. For example, neither the bi-clausal approach nor the other serial verb approaches is appropriate to describe and explain
Properties of Korean SVC's. It is implied that a syntactic compounding approach would be similar to the present approach.

References


Comments on Verb Raising in Japanese and Korean

Soowon Kim
soowon@u.washington.edu

1. Sloppy/Strict Identity Interpretation

Otani & Whitman (1991; hereafter O&W) claim that in pro-drop languages null object constructions like those in (2) (from Chinese) and (3) (from Japanese) have properties parallel to those of VP-ellipsis constructions in English shown in (1), regarding sloppy/strict identity interpretations of the null objects.

(1) Peter likes his picture, and Joan does [np e] too.
   a. Joan likes Joan's picture  (the sloppy reading)
   b. Joan likes Peter's picture  (the strict reading)

(2) Zhangsan bu xihuan [guanyi ziji de yaoyan]; Mali ye bu xihuan [np e].
    'Zhangsan not like about self GEN rumor Mary also not like
    'Zhangsan doesn't like rumors about himself, and Mary doesn't, either.'
    a. Mary does not like rumors about herself, either
    b. Mary does not like rumors about Zhangsan, either

(3) John-wa [zibun-no tegami]-o sute-ta; Mary-mo [np e] sute-ta.
    John-TOP self-GEN letter-ACC discard-Perf; Mary-also discard-Perf
    'John threw out his (=John's) letters, and Mary did too.'
    a. Mary threw out Mary's letters, too
    b. Mary threw out John's letters, too

O&W argue that the ambiguity of (2) and (3) between sloppy identity and strict identity can be best analyzed as involving VP reconstruction at LF. But as O&W admit, Chinese and Japanese

---

*An earlier version of this paper was presented at the Workshop on East Asian Linguistics held at the University of California, Irvine in April 1996. I thank the audience for comments and many useful suggestions, and especially, Naoki Fukui, Hajiine Hoji, James Huang, Yukinori Takubo, and Moira Yip.
have no genuine case of VP-ellipsis identical to the ellipted VP in (1); rather, the main V in the antecedent VP is reduplicated or copied. Thus, (2) and (3) look very much like null object constructions at surface. However, O&W make the crucial claim that overt V-raising creates an empty VP in (2) and (3) which is identical to the ellipted VP in (1); hence, as shown in (4), their S-structure representations do provide the right sort of environment for VP reconstruction at LF.

\[(4) \quad [\text{up. NP}_{\text{subj}} \, [\text{vp. NP}_{\text{obj}} \, e] \, t_v] \, \text{V-Inf}] \, \text{(order irrelevant)}\]

Specifically, O&W argue that the sloppy reading of the Japanese example (3) is accounted for first by V-raising, then by applying predicate-abstraction followed by copying the antecedent VP into the ellipsis site, along the lines of Sag (1976) and Williams (1977). This is illustrated in (5).

\[(5) \quad \begin{align*}
\text{a. verb raising: } & \text{John-wa } [\text{vp. zibun-no tegami]-o t_v]} [\, \text{sute-ta}] \, \text{(antecedent VP)} \\
& \quad \text{Mary-mo } [\text{vp. } e] \, t_v] [\, \text{sute-ta}] \, \text{(ellipted VP)} \\
\text{b. } \lambda\text{-abstraction: } & \text{John-wa } [\lambda x \, [x \text{-no tegami]-o t_v]] [\, \text{sute-ta}] \, \text{(antecedent VP)} \\
& \quad \text{Mary-mo } [\lambda x \, [x \text{-no tegami]-o t_v]] [\, \text{sute-ta}] \, \text{(ellipted VP)}
\end{align*}\]

An important implication of O&W's analysis, then, is that overt V-raising does exist in Chinese, Japanese, and Korean, despite the appearance that the result is always string-vacuous in the latter two. Call it the V-raising account.

In this paper, however, I argue that facts concerning sloppy/strict identity provide no evidence for overt verb raising in the languages at hand.\(^1\) The goal of this paper is therefore to show (i) that an alternative account for strict/sloppy identity of null objects that does not assume V-raising is not only viable but is also empirically correct for a broader range of data that the V-raising account fails to deal with, and (ii) that O&W's V-raising account cannot be an adequate account for a full range of interpretations null objects exhibit. For this reason, the discussion will be limited to issues on sloppy/strict identity. Also, the data to consider here are drawn primarily from

---

\(^1\)Hoji 1995 independently arrived at the same conclusion, based on Japanese data of very different nature. He argues that sloppy identity exhibited by null objects in Japanese is distinct in semantic interpretation from sloppy identity of the standard type found in VP-ellipsis constructions in English. If Hoji is correct, this semantic distinction must be dealt with by any accounts that seek to find parallelisms between VP ellipses in English and null objects in Japanese. Thus, my account presented herein is compatible with Hoji's analysis of null objects in Japanese, giving it further support from a syntactic viewpoint.
Korean, because Chinese and Japanese appear to lack some of the crucial constructions that bear on the predictions of O&W’s V-raising account. It remains to be seen whether overt verb raising in these languages can be supported by considerations other than sloppy/strict identity of null objects, which however is an issue that goes beyond the scope of this paper.

2. Predictions and Problems of the V-Raising Account

2.1 Double Object, Quantifier Floating, and Part-Whole Constructions

I will begin with the predictions made by the V-raising account of O&W. Since O&W’s postulation of overt verb movement finds its necessity exclusively for the availability of a sloppy identity interpretation of a null object and its absence in certain contexts (see below), let us first consider sloppy readings. (I will return to strict readings in Section 3.) First, the V-raising account requires that the VP to be reconstructed at LF must be empty, as depicted in (4) above. Second, the V-raising account does not necessarily require that exactly the same verb occur in both the antecedent VP and the VP in the reconstruction site, as argued for by O&W, as long as V-raising renders both VPs empty prior to LF reconstruction, with the proviso that “[LF reconstruction] copies only unindexed verb traces (O&W, p. 351, note 4).” Third, if the verbs in the antecedent VP and the VP in the reconstruction site differ, the V-raising account does however require that VP copying satisfy the lexical properties of the second verb in the reconstruction site. I will show the V-raising account has only limited success in dealing with a broader range of empirical facts regarding sloppy/strict identity, because that account requires an impossible type of VP reconstruction for a certain class of constructions in Korean.

Consider first the sloppy reading of (6b) with ditransitive verbs, where the goal argument of the VP in the reconstruction site is distinct in reference from that in the antecedent VP.


Peter-TOP self-GEN picture-ACC I-DAT/ACC show-Past-Ind

’Peter showed me his (=Peter’s) picture.’
   but Ruth-TOP ever anybody-(DAT)-even not show-Past-Ind
i) But Ruth never showed anybody her (=Ruth's) picture
ii) ?But Ruth never showed anybody his (=Peter's) picture

The availability of the sloppy reading in (6b) would be a problem for O&W under the standard analysis of double object constructions, since the VP in the reconstruction site with a distinct goal argument inside it could not be made empty even after V-raising; hence, VP copying is doomed to fail for (6b). O&W would therefore have to assume one of the following: (i) the VP that enters into reconstruction must be a nonmaximal projection of V, perhaps V', that includes only the theme NP (modulo λ-abstraction) and the (unindexed) trace of the moved V, or (ii) the VP that enters into reconstruction is the maximal projection of V, but then the goal argument must move out of the VP prior to LF so that the VP that gets copied should contain the theme NP, the (unindexed) trace of the moved V, and the (unindexed) trace of the moved goal argument. Call the former analysis 'partial reconstruction', and the latter 'goal extraposition'.

Both of these options turn out to be untenable, however. The option of 'partial reconstruction' does not solve the problem, as it is just a part of a more general problem that the V-raising account must cope with: simply, 'partial reconstruction' requires an illegitimate or impossible type of VP reconstruction. Note that 'partial reconstruction' is also incompatible with the VP-Shell structure for double objects proposed by Larson (1988) or with many recent variants of it that are enriched with agreement projections. The reason is because in the Larsonian VP-Shell structure the theme NP and the V do not form a constituent. Nor is 'goal extraposition' a possible solution, either, since there are cases where certain constituents must stay inside the VP and cannot be removed from the VP. The relevant cases include floating quantifier constructions and part-whole constructions, to which I now turn.

Sentence (7a) is a typical example of numeral quantifier floating, and the quantifier and its antecedent both occur inside the VP. The VP in (7b) however involves a different numeral quantifier whose antecedent is a null object. Note that sloppy/strict readings do obtain in (7b).
(7)  a. Harry-nun [caki-(uy) chinkwu]-lul twumyeng-(ul) pul-less-ta.
    Harry-TOP self-(GEN) friend-ACC two.CL-(ACC) invite-Past-Ind
    'Harry invited two of his friends.'

    Jane-TOP three.CL-(ACC) invite-Past-Ind

    i) Jane invited three of her (=Jane's) friends

    ii) Jane invited three of his (=Harry's) friends

Now that the two VPs in (7) have distinct numeral quantifiers, VP reconstruction must copy
the antecedent VP but the numeral quantifier into the VP of (7b), in practically the same way as it
does in (6). This then requires the numeral quantifier in (7a) to be outside the VP, a case similar to
'goal extraposition'; hence, on the V-raising account the VP of (7a) must look like (8) prior to
reconstruction at LF.

(8)  ?*...twumyeng-(ul) [vp [np caki-(uy) chinkwu-lul] [np t] t_v]...

However, (8) is not a possible S-structure configuration for (7a) because it violates the condition on
floating quantifiers in Korean (and Japanese): a floating quantifier must be c-commanded and
preceded by its antecedent. Moreover, the c-command requirement on a floating quantifier may not
be fulfilled by the trace of the moved quantifier. (For relevant discussions, see Y.-J. Kwon (1991)
and C. Lee (1989).)² If correct, this leaves us only one possibility: 'partial reconstruction' under the
assumption that the relevant structure of VP for (7a,b) is the one in (9).

(9)  
    VP
    / \ 
    V'  NQ (numeral quantifier)
    /  \ 
    NP  V

²The status of this constraint is however somewhat muddy, given that not all researchers appear to agree on its strict
application. Park & Sohn (1993) claim that not only can a floating quantifier precede its antecedent, but it can also
Apart from possible individual or dialectal variation, however, it is clear that the constraint is at work, but then, there
seem to be additional qualifications to be appended to it that largely remain unclear at the moment. Miyagawa (1988),
for example, observes that in Japanese, the floating quantifier that can be preposed over its antecedent is subject to a
thematic condition such that the antecedent must be a theme NP, indicating that the restriction at hand might not be
syntactic in nature.
Given (9), copying the V' that contains the object NP and the trace of V after verb movement would account for the sloppy reading of (7b), as predicted by the V-raising account.

But the VP structure in (9) might raise its own problems for quantifier floating constructions. No doubt, the sequence NP-NQ must be treated as a constituent when they behave as a single NP with respect to case marking (i.e. [NP-NQ]-case). The question is what structure to assign to them when they behave as two separate NPs (i.e. the case of quantifier floating of the structure [NP]-case [NQ]-case)? Terada (1990) suggests that in Japanese the latter, too, must form a constituent. Miyagawa (1988) also suggests that quantifier floating in Japanese must obey a mutual c-command requirement as a floated quantifier holds a predication relation with its antecedent. If these authors are correct, then the structure in (9) could not be assumed for Japanese.

Park & Sohn (1993), however, argue that in Korean, a floating quantifier and its antecedent must not form a constituent, as their constituency is disconfirmed on empirical grounds. So for Park & Sohn, the structure in (9) may hold true for Korean. If, on the other hand, the two structures above, [NP-NQ]-case and [NP]-case [NQ]-case, are derivationally related by means of antecedent-NP movement, it would be much harder to reconstruct only the part of the antecedent VP that excludes the quantifier, for that involves copying of discontinuous phrase markers that are not a constituent.

Furthermore, 'partial reconstruction' faces a much tougher problem when part-whole constructions of the sort illustrated in (10) are taken into consideration.

(10) a. Mike-nun James-lul tali-lul ketecha-ss-ta.
    Mike-TOP James-ACC leg-ACC kick-Past-Ind
    'Mike kicked James on the leg.'

    Edgar-TOP chicken-ACC feather-ACC pluck-Past-Ind
    'Edgar plucked the chicken.'

As shown by Maling & Kim (1992) and J. Yoon (1989), the part-NP is the complement of the verb and behaves as such with respect to verbal case marking, selection, and theta-theoretic properties, while the whole-NP rather has an adjunct-like status. I thus assume the structure of VP in (10a,b) to be the one given in (11) (ignoring the position of the VP-subject), which is essentially the
structure proposed by J. Yoon (1989) for inalienable possession constructions (modulo Θ-identification of Higginbotham (1985)).

(11) VP (Θ-grid (x): Θ-marking)
     / \ 
whole-NP V' (Θ-grid (x,y): Θ-marking)
     / \ 
part-NP V (Θ-grid (x,y) Θ-identification)

Moreover, the part-NP, being nonreferential, is syntactically inert and cannot move out of the VP but must stay in place (J. Yoon (1989: 358-359); see also Y.-J. Kim (1990)). It is predicted, then, that under the V-raising account, a sloppy reading would never arise in part-whole constructions if the part-NP in the reconstruction site differs from the one in the antecedent VP. The reason is that given the structure of VP in (11), there is no way for VP copying to pick only (the trace of) the verb and the whole-NP as a constituent in exclusion of the part-NP and reconstruct the VP as such. But this prediction of the V-raising account is empirically disconfirmed, as shown in (12). In fact, (12b) does allow a sloppy reading.

    Jerry-TOP self-GEN child-ACC arm-ACC hit-Past-Ind
    'Jerry hit his child on the arm.'

   but Julia-TOP leg-ACC hit-Past-Ind
   i) But Julia hit her (=Julia's) child on the leg
   ii) But Julia hit his (=Jerry's) child on the leg

The problem, then, is that the V-raising account of O&W must posit a structurally impossible type of VP reconstruction in order to explain the sloppy reading of (12b). This indicates, prima facie, that the availability of sloppy identity in part-whole constructions must be able to be accounted for without recourse to VP reconstruction, casting serious doubts on the necessity of V-raising in any accounts of sloppy/strict interpretations of null objects.

2.2 Nonidentity of Verb and Subcategorization
O&W also discuss cases that involve nonidentical verbs but which give rise to sloppy identity readings, as illustrated in (13) with an example from Japanese.

(13) a. John-wa \( v_p \) zibun-no roba-o tataki]-ta
    John-TOP self-GEN donkey-ACC beat-Perf
    'John beat his (=John's) donkey.'

b. Bill-mo \( v_p [v_e] \) ker]-ta
    Bill-also kick-Perf
   i) Bill also kicked his (=Bill's) donkey
   ii) Bill also kicked his (=John's) donkey

O&W argue that on their V-raising account, cases such as (13b) are predicted to have a sloppy reading, since the VP in the reconstruction site would have the trace of the raised V unindexed, as depicted in (4) above. Hence no conflict arises.

They however claim that when the two verbs are not identical, a sloppy reading is allowed only when VP copying can satisfy the lexical property of the V in the reconstruction site, as illustrated, again, with an example from Japanese:

(14) a. John-wa hati-zi-ni \( v_p \) zibun-no apaat-kara de-ta.
    John-TOP 8-o'clock-at self-GEN apartment-from leave-Perf
    'John left from his (=John's) apartment at 8 o'clock.'

    Bill-TOP 9-o'clock-at clean-start-Perf
   i) *Bill started cleaning his (=Bill's) apartment at 9 o'clock
   ii) Bill started cleaning his (=John's) apartment at 9 o'clock

(14b) disallows a sloppy reading, crucially because the two verbs in (14) have different subcategorization properties: it subcategorizes for a PP in (14a) but for a NP in (14b). Thus, VP copying fails in (14b) since VP reconstruction would provide the VP of (14b) with a PP complement that is incompatible with the lexical property of its V. Note that this analysis must assume that Japanese has the category P distinct from morphological case markers and it projects its own maximal category PP distinct from NP.
However, this account is not at all convincing since there are many similar examples that do allow sloppy readings. Consider the Korean example in (15).


       John-TOP always   self-GEN wife-COM/*ACC shopping-ACC do-Pres-Ind

       'John always does the shopping with his (=John's) wife.'

    b. Kulena Aaron-un [or e] makwutwutulkyephay-n-ta.

       but Aaron-TOP brutally beat-Pres-Ind

       i) But Aaron beats his (=Aaron's) wife brutally

       ii) ??But Aaron beats his (=John's) wife brutally

The sloppy reading of (15b) is very easy to detect and is quite clear, especially when (15b) is a description on Aaron's personality (in which case, the strict reading becomes quite odd for a pragmatic reason: there is no reason why one would habitually beat someone else's wife). (16) shows that the verb in (15b) cannot subcategorize for a comitative phrase but must take an accusative object, which is just the opposite of (15a).

(16)  Kulena Aaron-un [caki-uy anay]-lul/*wa makwu twutulkyephay-n-ta.

       but Aaron-TOP self-GEN wife-ACC/*COM brutally beat-Pres-Ind

       'But Aaron beats his (=Aaron's) wife brutally.'

The question is whether the comitative marker wa in (15a) is a case particle or a categorially distinct head (such as P). There is good reason not to take the particle wa to be an inherent/lexical case marker. The comitative phrase in (15a) is not subcategorized for by the V. Given that crosslinguistically, an inherent/lexical case is sensitive to a verb's thematic property, the comitative particle wa in (15a) should not be taken as an inherent/lexical case. If, on the other hand, the particle wa in (15a) is a postposition heading a PP, then the sloppy reading of (15b) would be an apparent problem for the V-raising account, which, contrary to fact, predicts the absence of sloppy identity for (15b) on a par with (14b).

Miyagawa (1988) discusses quantifier floating in Japanese and suggests the (im)possibility of quantifier floating coincides with the category of its antecedent: a floating quantifier cannot be associated with its antecedent if the latter occurs inside PP, for they must obey a mutual e-command condition. This account makes crucial reference to categorial distinctions, which he takes
to be evidence for the existence of category P in Japanese. Note that the same holds true for 
Korean, where quantifier floating is disallowed when the antecedent occurs with the comitative 
particle wa. Extending Miyagawa's analysis to Korean, the comitative particle wa would then have 
to belong to the category P, distinct from case particles, which in turn would pose an apparent 
problem for the V-raising account. Sells (1995), on the other hand, takes the issue in greater detail, 
arguing that the alleged distinction between case particles and postpositions in Japanese and Korean 
can hardly be established on empirical grounds. If Sells is correct, the nonexistence of a categorial 
distinction between them would, once again, pose an apparent difficulty for the V-raising account.

The upshot of the discussion is, then, that not only does the V-raising account make crucial 
reference to an unwarranted categorial distinction between postpositions and case particles in the 
languages at hand, but it also fails to show that the lack of sloppy identity in (14b) is a general 
property that holds of other similar cases that are structurally identical to (14b).

2.3 Sloppy Identity in Partial Ellipsis

O&W observe, in further support of the V-raising account, that the availability of sloppy 
identity in Japanese is subject to the same sort of locality condition that constraints VP ellipsis in 
English (see Sag (1976), Williams (1977)):

(17) a. John-wa [[NY Times-ga zibun-no kizi-o inyoosi-te i-ru-to] kik-ta]
   John-TOP NY Times-NOM self-GEN article-ACC quote-ing be-Imp-Comp hear-Perf

   'John heard that the NY Times is quoting his (=John's) article.'

b. Bill-mo [[NY Times-ga [np e] inyoosi-te i-ru-to] kik]-ta
   Bill-also NY Times-NOM quote-ing be-Imp-Comp hear-Perf

   i) *Bill also heard that the NY Times is quoting his (=Bill's) article
   ii) Bill also heard that the NY Times is quoting his (=John's) article

According to O&W, the null object in (17b) disallows a sloppy reading, the reason being that on the
intended sloppy reading, (17b), like its English counterpart in (18) below, would contain a free variable after VP copying at LF.

(18)  John, thinks Bill like him, and Mary thinks Bill does, too.
    i)  ...and Mary thinks that Bill likes John, too
    ii) *...and Mary thinks that Bill likes Mary, too

To see why, let us inspect the two LFs of (18). The application of $\lambda$-abstraction yields the two structures in (19a), and VP copying the two LFs in (19b).

(19)  a. $\lambda$-abstraction (for the first conjunct of (18)):
    i)  John [ $\lambda x$ [x thinks that Bill [vp likes x]]]
    ii) John [ $\lambda x$ [x thinks that Bill [vp likes him]]]

b. VP copying (for the second conjunct of (18)):
    i)  *Mary [ $\lambda y$ [y thinks that Bill [vp likes x]]] (applied to (19ai))
    ii) Mary [ $\lambda y$ [y thinks that Bill [vp likes him]]] (applied to (19a(ii))

(19bi) corresponds to a $\lambda$-expression that contains a variable bound from outside by a different token operator, which is prohibited. The result then appears to be that sloppy identity does not obtain in partial ellipsis constructions.

The Sag/Williams account has been questioned by Friengo & May (1994), however, who observe that the range of empirical facts is broader than what the Sag/Williams account actually predicts them to be. Friengo & May give examples of the following sort to show that sloppy identity does obtain for an object NP in an elided VP in an embedded clause (pp. 106-107):

(20)  a. I didn't know that Bill was a bigamist.

b. Mary just said he's married to her, and Sally said he is, too.

It is clear that (20b) allows a sloppy reading: Sally said he is, too can mean Sally said Bill's married to Sally, too.

In fact, the same observation appears to hold in Korean as well, which thus casts doubt on the empirical validity of the generalization that sloppy identity does not obtain in a partial VP ellipsis. Consider (21a,b).


Bill-TOP company-NOM reason-without self-ACC fire-Past-Ind-Comp say-Past-Ind
'Bill said that the company fired him (=Bill) for no obvious reason.'


Mary-also company-NOM reason-without fire-Past-Ind-Comp say-Past-Ind

i) Mary also said that the company fired her (=Mary) with no obvious reason

ii) Mary also said that the company fired him (=Bill) with no obvious reason

Given that structurally, (21b) is exactly parallel to (17b), it remains unclear why a sloppy reading obtains in (21b) but not in (17b). Nevertheless, it seems clear that there should not be any structural account for the (un)availability of sloppy identity in contexts of this sort. I thus claim, without any further discussion, that the locality condition that O&W address is at best spurious. Consequently, their V-raising account is also undermined.

3. On Strict Identity

I now turn to the strict identity readings found in all of the examples seen so far. Note that the Sag/Williams account for sloppy/strict identity involves an optional application of predicate-abstraction (i.e. \( \lambda \)-abstraction), as shown briefly in (19a) above (abstracting away from the details of the Sag/Williams account). But the optionality of predicate-abstraction (whereby a pronoun can either turn into a bound variable or stay in place unaffected) does not account for strict identity in such examples as (14b) and (17b) above; and for this reason, O&W (p. 355) assume that "the attested strict interpretation of [(17b)] may be derived either by optionally interpreting the long-distance reflexive zibun in [(17a)] as a pronoun or by positing John-no kizi 'John's article' as a null topic in [(17b)]." They also note, in passing, that the null-topic analysis of empty objects in Huang (1987) fails for (17b), since that analysis incorrectly predicts the availability of sloppy identity for (17b), as shown in (22).

(22) [Zibun-no kizi-wa], Bill-mo [np[CP NYT-ga [np e] inyoosi-te iru-to] kik-ta]

self-GEN article-TOP Bill-also NYT-NOM quote-ing be-Imp hear-Perf
'His, article, Bill, also heard that the NY Times is quoting.'

(22) involves an overt topic that corresponds to the object of the complement clause in (17a); but (22), which has the topic overt, does allow a sloppy reading that is absent in (17b).

When the observed facts are considered from a different angle, however, a quite interesting picture emerges: that is, the generalization is that all the examples we have seen that involve null objects allow strict identity, whereas their counterparts with overt objects do not appear to. Consider the contrasts illustrated in (23).

        John-TOP self-GEN mother-ACC love-Pres-Ind
        'John loves his (=John's) mother.'

    b. Mary-ttohan [caki-uy emma]-lul salangha-n-ta.
        Mary-also self-GEN mother love-Pres-Ind
        i) Mary also loves her (=Mary's) mother
        ii) Mary also loves his (=John's) mother

        Mary-also love-Pres-Ind
        i) Mary also loves her (=Mary's) mother
        ii) Mary also loves his (=John's) mother

The contrast between (23b) and (23c) seems sharp; and a strict reading, which is disallowed in (23b) (with an overt object), becomes easily available for (23c) (with a null object). Why should that be so?

Note that this generalization, if correct, appears to be the opposite of the property of VP-ellipsis in English that Fiengo & May (1994) highlight: namely, the 'eliminative' puzzle of ellipsis. This point can be illustrated by the contrast between (24b) and (24c).

(24)  a. Max said he saw his mother, and
    
    b. Oscar said he saw his mother, too.
    
    c. Oscar did [e], too.

(24b) allows four different readings, depending on how the pronouns can be construed. They allow either across-the-board sloppy identity or across-the-board strict identity, so (24b) can mean either
Oscar saw Oscar’s mother or Max saw Max’s mother; but they also allow mixed readings, on which (24b) can mean either Oscar saw Max’s mother or Max saw Oscar’s mother. (The reading on which the pronoun has an independent construal does not concern us here.) Crucially, however, (24c) in VP ellipsis disallows this last reading, with the first pronoun as strict and the second pronoun as sloppy. Fiengo & May show that this is quite general in VP ellipsis: the effect of ellipsis is 'eliminative', not conserving all anaphoric possibilities. Going back to null objects in Korean, we see that the effect of ellipsis is actually 'additive', by allowing more anaphoric possibilities. All other things being equal, that is, if, as claimed by O&W, VP ellipsis in English and VP-ellipsis-like constructions in Korean (and Japanese) have the same syntactic properties, this fact would seem truly puzzling. In Section 4 I suggest the difference can be reduced to anaphoric interpretations of so-called long-distance reflexives such as caki in Korean.

Before closing this section, however, I should mention that there is some evidence against O&W’s null topic analysis for strict identity. Whitman (1989) points out a certain co-occurrence restriction in Japanese and Korean, whereby a topic phrase cannot appear inside an embedded clause that disallows a modal, and argues that a topic phrase occurs in the specifier position of Mood Phrase. The following examples illustrate the co-occurrence restriction (taken from Lee & Im (1983)):

    Autumn-NOM/*TOP come-Pres sound-NOM hear-Pass-Pres-Ind
    'The sound of Autumn coming can be heard.'

b. [Ku-ka/*nun o-myen] kunye-to o-n-ta.
    he-NOM/*TOP come-Cond she-also come-Pres-Ind
    'If he comes here, she also comes here.'

With this co-occurrence restriction at hand, the V-raising account predicts the null object that occurs inside a conditional clause would disallow strict identity, since a topic phrase, null or overt, is independently disallowed in such a conditional clause as (25b). But again, the prediction of the V-raising account is empirically disconfirmed, which suggests strict identity should be able to
obtain independently of the presence of a null topic. Consider (26).


Mary-TOP self-GEN mother-DAT call-will-Ind-Comp say-Past-Ind
'Mary said that she would call her (own) mother.'


in-case Peter-NOM/*TOP first call-Pres-Cond

i) if Peter calls her (=Mary's) mother first

ii) if Peter calls his (=Peter's) mother first

(26bi) is the strict reading, and (26bii) the sloppy reading. As indicated above, the subject of the conditional clause, Peter, cannot bear a topic marker, which thus shows the strict reading here cannot arise from a null topic posited inside the conditional clause.

This then leaves only one coherent account for strict identity in all of the examples: an optional interpretation of the long-distance reflexive as a pronoun (O&W, p. 355). As is clear by now, this possibility raises a fundamental question about the V-raising account. Why should V-raising (and VP reconstruction, for that matter) be assumed in the first place if a null object can be interpreted either strictly (by interpreting zibun or caki as a pronoun) or sloppily (by interpreting zibun or caki as a reflexive)? In the next section I will suggest an alternative analysis that makes no reference to overt V-raising, thereby arguing that it is wrong to take sloppy/strict identity of null objects to be evidence for overt verb raising in Japanese and Korean.

4. A Vehicle Change Account

The discussion so far has made it clear that sloppy/strict identity interpretation must be able to obtain without the help of VP reconstruction or null topics, since as we have seen, there are cases where LF reconstruction is inapplicable. An alternative account for sloppy/strict identity in Korean that I suggest here assumes the dependency theory of Fiengo & May (1994; hereafter F&M) and its extended application to null objects in Korean. My claim is that a null object in Korean receives its interpretation through what F&M call 'vehicle change', which applies directly to a null object
without VP reconstruction.

F&M offer a novel theory of indexical dependency, according to which an index, being a complex object consisting of 'indexical type' (indicated by a superscripted α or β) and 'indexical value' (represented by a subscripted numeral), may be dependent on another or independent of other occurrences. It will be assumed, following their convention, that a superscripted β-occurrence denotes an expression whose reference depends on its linguistic context, while an expression with an α-occurrence does not depend on its linguistic context. Details aside, their dependency theory can apply to the elliptical construction in (27) in the following manner:

(27)  John saw his mother, and Sally did, too

b. John, saw [his₈, mother]₈, and Sally, saw [NP₈, mother]ₐ  (sloppy identity)

A pronoun with sloppy identity bears a β-occurrence, and a pronoun with strict identity bears an α-occurrence. Reconstruction, on this view, is a process to reproduce indexical structure, not the lexical content of the antecedent VP.

Applying it to Korean, all we need to do is assign a possible indexical structure to a null object for interpretation, which can be done by reconstructing the indexical structure of its antecedent NP, and nothing more. Thus, the same process of vehicle change can be shown to apply to null objects in Korean without further qualification. That this is correct can be shown by the fact that there is a crucial difference in interpretation between null objects in Japanese and Korean and VP ellipsis constructions in English: in the former languages, the null object in the reconstruction site can also be construed with the subject of the antecedent clause:

    Mike-NOM self-GEN child-ACC hit-Past-Ind
    'Mike hit his/her son.'

    then JeAnne-also hit-Past-Ind

i) And then, Jeanne hit Jeanne's child, too
ii) And then, Jeanne hit Mike's child, too

iii) And then, Jeanne hit Mike, too

(28b) allows sloppy/strict identity of the familiar kind. But it also allows the reading in (28biii): the null object in (28b) can refer to the subject of (28a). This reading is all natural in a discourse in which Jeanne hit Mike because she saw him hit her son. Note that this third reading does not exist in VP ellipsis constructions in English:

(29) Mike hit his/her son, and Jeanne did, too.

Under no circumstances can (29) mean Jeanne hit Mike. But this is predicted since VP reconstruction cannot include the subject Mike that occurs outside the VP. On my account, on the other hand, the three readings of (28b) should all be possible in Korean, which they are, if the null object receives its interpretation via reconstruction of the indexical structure of any available antecedent NP, not by means of VP copying per se. Thus, this fact provides another compelling argument against the V-raising account for sloppy/strict identity: that is, the range of empirical facts regarding the interpretation of a null object is far too broader than what the V-raising account predicts them to be.

Consider now the contrast between (30b) (which has an overt object) and (30c) (which has a null object), which provides crucial evidence in support of the present analysis.

(30) a. Peter-nun [caki-uy emma]-lul salangha-n-ta.
   Peter-TOP self-GEN mother-ACC love-Pres-Ind
   'Peter loves his (own) mother.'

b. Na-ttohan [caki-uy emma]-lul salangha-n-ta.
   I-also self-GEN mother-ACC love-Pres-Ind

---

3That null object constructions and VP-ellipsis constructions do not have parallel properties can be shown more clearly by the sentence such as (i).

   Mike-NOM hit-when John-also hit-Past-Ind
   'When Mike hit John, John also hit Mike in return.'

In this sentence, the two null objects can each refer to the subject of the other clause, a case of crossing coreference, which however cannot be handled by VP-reconstruction. I thank Tai-Soo Kim for having brought this example to my attention.
i) I also love his (=Peter's) mother

ii) *I also love my mother

c. Na-ttohan [\text{m} e] salangha-n-ta.
   I-also love-Pres-Ind

i) I also love Peter's mother

ii) I also love my mother

Sentence (30b) cannot mean (30bii) since caki requires a 3rd person antecedent. But its null object counterpart in (30c) allows the sloppy reading that (30b) lacks; hence (30c) is ambiguous. This clearly shows that the null object in (30c) cannot be derived from (30b) by means of PF deletion, that is, deletion under PF identity. How, then, is the null object construed? On this point, I agree with O&W that the interpretation of a null object in a language like Japanese or Korean involves reconstruction. But unlike O&W, I take VP reconstruction to be neither necessary nor sufficient for it.

Now, the interpretive possibilities just noted above in (30a-c) can be accounted for straightforwardly, given that on the present 'vehicle change' analysis, reconstruction deals with an indexical structure devoid of lexical content. Under F&M's dependency theory, the null object in (30c) can be reconstructed with either the indexical structure in (31a) or the one in (31b). (In order to make the point clear, I deliberately chose to use empty phrase markers that contain only indices devoid of lexical or phonetic content.)

(31) a. na-\text{-ttohan} [\text{NP}^\alpha_1 \text{emma}^\alpha_2]-\text{lul salangha-n-ta}

b. na-\text{-ttohan} [\text{NP}^\beta_3 \text{emma}^\alpha_2]-\text{lul salangha-n-ta}

After reconstruction, the representation in (31a) yields the strict reading of (30c), and the one in (31b) the sloppy reading.

The present account in fact comports with the view that so-called long-distance reflexives such as caki in Korean (or zibun in Japanese) are essentially pronouns, not inherent anaphors (for relevant discussion, see Cole, Hermon, & Sung (1990)). All we need to say, then, is that they are 'underspecified' pronouns of some kind; their $\phi$-features are defective in the sense that they have a person feature but lack number and gender features. Thus, they tend to take antecedents for
Comments on Verb Raising in Japanese and Korean

appropriate interpretations, whether the antecedents occur intrasententially or inter sententially. That is, they (tend to) have the property of ‘β-pronouns’, i.e., pronouns that bear β-occurrences in F&M’s terms. But by no means is this picture complete. For instance, caki can also have an arbitrary interpretation in the following sentence, a fact that has rarely received attention in the generative literature:

(32) Caki-ka caki-uy il-ul an tolpo-myen, nwu-ka tolpo-keyss-nunka?
    one-NOM one-GEN work-ACC not care-Cond who-NOM care-will-Q
    'If one does not take care of one's business, who would?'

A sentence like (32) (which is found in Korean proverbs) can stand alone without any previous discourse, in which case the first caki receives an arbitrary reading (just like one in English or arbitrary pro in Romance languages) but the second caki must be bound by the first. 4

Related to that is the curious question of why unlike null pronominals, null anaphors do not seem to exist in pro-drop languages. This problem was once noted by Huang (1987) for Chinese, but it has so far escaped an explanation. That is, why can't the null object in sentence (33) have the intended anaphoric reading?

(33) Peter-nun/ka [sp e] cungoha-yess-ta.
    Peter-TOP/NOM hate-Past-Ind
    i) *Peter hated himself
    ii) Peter hated someone

In the spirit of F&M's dependency theory, I would like to suggest the following account. Since anaphoric dependency must arise from a β-pronoun requiring a linguistic context, the null object in (33) cannot possibly be an anaphor. This view, of course, must assume that a null argument can receive its interpretation only in one of two ways: it receives an arbitrary interpretation or an

---

4 What needs to be explained, then, is the likelihood of anaphoric dependency that so-called long-distance reflexives in Korean exhibit. It seems that in unmarked cases, caki tends to take a linguistic antecedent. Thus, in the sentence Harry-ka caki-uy sacin-ul po-ass-ta 'Harry saw his picture', caki must be understood to be bound to Harry if the sentence is uttered alone without a previous discourse. But if a discourse context is provided, as in Peter-ka tulew-ass-ta; kuleca Harry-ka caki-uy sacin-ul po-ass-ta 'Peter came in; and then Harry saw his picture', caki can also pick its antecedent from the discourse depending on the relevance of discourse factors (such as focus, topic, etc.). If there is no possible antecedent available, as in (32), caki is however forced to make use of its own featural content, i.e., a pronoun only with the feature [3rd person]; hence an arbitrary reading follows. For relevant discussion, see Moon (1995), who offers an optimality-theoretic account for the behaviors of caki.
anaphoric interpretation, of which the latter can only obtain through reconstruction. Since there is no possible antecedent to reconstruct from, an anaphoric construal is blocked in (33). But why is it not possible to have the subject NP as the needed linguistic antecedent, then? Notice that ‘vehicle change’ cannot get (33) the intended anaphoric reading, either because being an R-expression, the subject Peter may not bear a β-occurrence, or because the ‘pronominal correlate’ of Peter, \(^{\alpha}\)Peter\(^{\alpha}\), after ‘vehicle change’ that gets copied into the null object position leads to a violation of Condition B of the binding theory, as shown in (34).

(34)  a. \(^{\alpha}\)Peter\(^{\alpha}\)-NOM \(^{\beta}\)Peter\(^{\alpha}\)-ACC Verb (after vehicle change, i.e. reconstruction)

b. \(^{\alpha}\)Peter, likes him,

Since the ‘pronominal correlate’ and its antecedent bear the same indexical value (i.e. the subscripted numeral), (34a) has essentially the same binding-theoretic status as (34b) which involves an overt pronominal object. This will explain why in (33) the null object must be disjoint in reference from the subject: the correct result. If correct, this account provides a principled explanation for the otherwise puzzling fact about a certain binding-theoretic gap noted originally by Huang (1987).

5. Conclusion

My intention in this paper is not to argue for a particular theory of sloppy/strict identity against another, but to show that null objects in Korean (and also Japanese) receive their interpretations through reconstruction of the referential properties of their antecedent NPs (modulo ‘vehicle change’). Incidentally, Fiengo & May’s theory of indexical dependency provides just the right kind of tools for doing the job since all that a null object has to do is copy the indexical structure of the antecedent NP. I have argued against Otani & Whitman’s analysis because VP reconstruction (and V-raising, for that matter) is neither necessary nor sufficient as a means to account for null objects and their interpretation. In particular, I have made the following two major points against the V-raising account, based on data drawn from Korean. First, the range of
predictions made by the V-raising account is empirically incorrect since it requires an illegitimate type of VP reconstruction. Second, the range of empirical facts about interpretation of null objects is much broader than what is allowed by the V-raising account. In short, then, null object constructions do not have properties parallel to those of VP-ellipsis constructions. The unavoidable conclusion is thus that sloppy/strict identity interpretation of null objects provides no evidence for overt verb movement in such languages as Chinese, Japanese, and Korean, because it is genuine null objects and not elided VPs masked under V-raising that we are really dealing with here.

References
Maling, Joan and Soowon Kim. 1992. Case assignment in the inalienable possession construction


Proposal for an Experiment on SU, DO and IO
Relative Clause Acquisition in French

Jennifer A. Loveless
jennh@u.washington.edu

1. Introduction

In 1977 when Keenan and Comrie published the often-cited “Noun Phrase Accessibility,” their only concern was to find a pattern, across a large sampling of languages, for the relativization of NPs. This researcher does not profess any doubt that the Accessibility Hierarchy with respect to NP relativization, SU > DO > IO > OBL > GEN > OCOMP, is generally valid.

However, this Accessibility Hierarchy has led some to suggest that typological markedness should be used as a predictor for a pattern of relative clause acquisition. Eckman proposed in Eckman (1977) that “the notion of typological markedness...can be correlated with the notion of degree of difficulty in second language acquisition. This idea is contained in the Markedness Differential Hypothesis (MDH)...”¹

In Eckman (1988) the researchers sought to determine whether the teaching of a more marked form allows the learner to acquire the less marked forms as well, thereby reducing the amount of instruction which must be given. Based on their research on ESL students only, Eckman, Bell and Nelson conclude that indeed, students who are taught the IO relative clause structure can easily generalize both the SU and the DO structures. This suggests that students need not be taught all of the forms in the usual less-marked-to-more-marked fashion. It is, however, the opinion of this researcher that a study based solely on the acquisition of a structure system in one single language should not be used to claim a universal Acquisition Hierarchy.

Eckman et al. made one very important exception for errors in their study that invalidates its cross-linguistic application. In the scoring of both the pre- and post-tests, errors were considered to be cases in which the learner did not produced the correct target sentence, and they counted as incorrect only those errors relevant to the formation of the target relative clause. The students were instructed, in terms of marker usage, that ‘that’ may be used for people and things, ‘which’

for things and 'who/whom' for people. They assumed that this broad acceptance of 'that' was permissible, given the frequency of 'that' as a relative clause marker in spoken English. However, by the acceptance of either 'who/whom' or 'that' for people and either 'which' or 'that' for things, learners were able to construct SU, DO and IO relative clauses with only one marker, 'that.'

That is the man that read the book.

That is the man that I saw.

That is the man that I gave the book to.

This important analysis allowance, which negates the application of Eckman et al.'s findings to all languages, is given in the article: "...to add a marker, that (for people and things), which (for things), and who/whom (for people)."\(^2\)

This automatically prohibits a generalization of their results to those languages which require that a specific marker be used in each of the SU, DO and IO relative clause structures. For example in standard French, 'qui,' is the marker for SU and IO relative clauses, while DO relatives are introduced by the word 'que'. It is the belief of this researcher that due to the opposition between the French SU and IO marker 'qui' and the DO 'que,' students who are given instruction only on the IO relative clause formation will be able to acquire the SU and IO relative clause structures without corresponding acquisition of the DO.

Another factor that appears not to have been considered in the Eckman study is the concept of input. If learners do indeed use only 'who/whom' when referencing a person and 'which/that' only when referencing a thing, and they have been given instruction only in the IO form (using 'who/whom'), they must have been given sufficient input for the acquisition of the DO usage of 'that/which' separate from the shared 'who/whom' of the SU and IO forms. In a situation like that of the Eckman study, where learners are living in an environment where their L2 is the dominant language, this may not be a problem. However, when the L2 is being taught as a foreign language and the only input in that language occurs in the classroom, sufficient exposure may not be achieved before the concept of relative clauses is taught. This is what my experiment will attempt to discover.

2. Method

The subjects will be first year French students at the University of Washington in Seattle. Two experimental groups will be used, one a control which will receive instruction in the “standard” way cited in Eckman, and used in Gass (1982), introducing first the SU, then DO followed by IO. The experimental group will receive instruction only on the IO form.

This researcher has chosen, as her research focuses on that of Eckman, et al., to use the same base sentences that were tested in the previous experiment in this one as well. All sentences were translated into French, and only names have been changed to reflect the target language.

All students will be given a written pre-test on relative clauses to control for any previous acquisition of French. The pre-test will follow the format of the actual test, wherein students must combine twenty-one pairs of sentences. The only directions given will be those listed in 1; these instructions will also appear on the test sheet and will be read by the instructor monitoring the test.

1 Combinez les phrases suivantes, en reliant la phrase B à la phrase A. (Combine the following sentences, attaching sentence B to sentence A.)

Examples of the test sentences to be combined, as well as the target sentence, are shown in 2. The entire pre-test and post-test to be used are given in Appendix A, with the original sentences (Eckman et al.’s question set) in Appendix B.

2 (a) A. Jeanne aime le professeur.
B. Le professeur donne des examens faciles à la classe.
Jeanne aime le professeur qui donne des examens faciles à la classe.

(b) A. Joséphine a utilisé le vélo.
B. Ton père a donné le vélo à Georges.
   Jeanne a utilisé le vélo que ton père a donné à Georges.

(c) A. Le président a écouté l’étudiante.
B. Le professeur a donné une mauvaise note à l’étudiante.
   Le président a écouté l’étudiante à qui le professeur a donné une mauvaise note.

As these examples are taken directly from Eckman et al., we can state as well that “as can be seen from the above examples, sentence A is always in the form NP V NP and sentence B is always of the form NP V NP Prep NP, where the indexed NP in sentence A is identical to one of the NPs in sentence B.”\(^3\) This is shown schematically in 3. This is to control for the importance of head position as a factor of difficulty that has been shown in both L1 (Sheldon 1974) and L2 acquisition (Gass and Ard 1980).

3 A. NP V NP\(^i\)
   B. NP V NP Prep. NP\(^4\)

The different pairs of sentences will be randomly ordered on all tests and, to lessen the possibility of some students doing poorly on the first few sentences on the pre-test, a warm-up exercise will be administered. However, the warm-up exercise will use different sentence-types and will therefore not be task-related, in order to guard against a learning effect.

3. Instruction

After the pre-test, students will be given instruction on relative clause formation. The control group will receive three normal class periods (fifty minutes each) of instruction on relativization, first on SU relative clauses, then DO followed by IO. The next class period they

---

\(^3\) Eckman, Bell and Nelson. 1988. p. 6.
will be given the post-test. The experimental group will receive one class period of instruction on IO relative clause formation only. The following class period they will be given the post-test.

Instruction for both groups will be structured in much the same way as in Eckman et al. to control for the impact of different teaching tactics on acquisition. The students will be given a short explanation of modifiers and told that they are going to be learning a technique to combine sentences where one idea modifies the other. They will be using the test format, with sentence B modifying sentence A, throughout the lesson(s). The pairs of sentences will be controlled for both groups so that each is appropriate for the level of relativization currently being learned. The sentences in each group will also be interrelated, telling a short story. Students will be taught, through examples written on the board, how to locate the phrases in each sentence pair that refer to the same person or thing, then to substitute a marker and rearrange the sentence.

The second activity for each step of relative clause instruction (all three days for the control group) will be an oral exercise. Students will listen to several pairs of sentences (again telling a short story) and will be asked to repeat each pair after mentally combining them as they have previously done on the board.

The third exercise for each group will be a written activity. The students will again receive sentence pairs that tell a story and will be instructed to combine the sentences using a modifier as before. This task will be done individually.

As in Eckman et al., the sentences for both groups will be centered around the same stories to control for the effects of lexical content on the students’ success.

4. Scoring

All tests will be scored based on successful production of the target sentence, with respect to relative clause markers. Only errors involving the formation of the target relative clause will be counted. Thus, for example, errors in spelling, subject-verb agreement and subject-adjective agreement will be ignored. However, if sentence combination occurs in the wrong order (linking sentence A to sentence B instead of the reverse), this will be counted as an error regardless of the marker used.
5. Conclusion

Although no direct claim is made in Eckman, et al. to have found a Universal Acquisition Hierarchy, the results are continuously referred to in the context of the Markedness Differential Hypothesis. The MDH, proposed in Eckman (1977) is generally understood to be a universal principle. Thus, the perceived claim is that the Acquisition Hierarchy shown in Eckman et al. is universal in nature.

The aim of this research is not to attempt to disprove the findings of Eckman et al. The importance of their findings, and their implications on the teaching of English as a Second Language are important indeed. Rather, the goal of this research is to caution against the urge to quickly generalize exciting and/or important findings in one, or a few languages, to all. It is also important to avoid assuming the importance of one concept over the effects of other variables. Although markedness is an extremely important concept, which has wide application, the assumption by Eckman et al. that it is paramount may have led to faulty conclusions.

In fact, not only is there a possibility that such an Acquisition Hierarchy may not be valid in languages with much more rigidly defined rules for relative clause formation than English, but there are also other findings which may invalidate this concept as universal. Tarallo and Myhill (1983) discovered that branching appears to have an effect on relativization as well. According to their findings, English L1 learners of right-branching languages (such as English) were most accurate in judging the grammaticality of sentences in the target language in cases involving SU relative clauses, while English L1 learners of left-branching languages were most accurate in judgments involving DO relative clauses. This suggests that before an attempt be made to teach a marked form before an unmarked one, assuming that the unmarked forms will naturally follow, it may important to analyze the language to be taught as well.
References


Appendix A

For ease of comparison, Eckman et al.’s sentences have been included in Appendix B and all sentences are grouped according to SU, DO or IO.

Pre-test

Directions: Combinez les phrases suivantes, en reliant la phrase B à la phrase A.

SU
1. A. Jeanne aime le professeur.
   B. Le professeur donne des examens faciles à la classe.

2. A. André admire l’étudiant.
   B. L’étudiant a écrit une lettre à Jean.

3. A. Marc aime le professeur.
   B. Le professeur a expliqué les réponses à la classe.

   B. L’homme a envoyé une lettre à Thomas.

5. A. Ton frère a vu la fille.
   B. La fille m’a donné le crayon.

6. A. Le père a punit la petite fille.
   B. La petite fille a jeté l’assiette au petit garçon.

7. A. Ma mère a rencontré l’étudiant.
B. L'étudiant m'a prêté le livre de grammaire.

**DO**
1. A. Annette a arraché la lettre.
   B. Matthieu m'a donné la lettre.

2. A. Béatrice a laissé tomber la lettre.
   B. Denis a écrit la lettre au professeur.

3. A. Nous avons mangé les bonbons.
   B. Mon père a apporté les bonbons à ma mère.

4. A. J'ai lu les revues.
   B. Elisabeth a envoyé les revues à Marie.

5. A. Ta soeur a vu le cadeau.
   B. Ma mère m'a donné le cadeau.

6. A. Joséphine a utilisé le vélo.
   B. Ton père a donné le vélo à Georges.

7. A. Ma camarade de chambre a étudié le chapitre.
   B. Le professeur a assigné le chapitre à la classe.

**IO**
1. A. Le professeur a regardé la fille.
   B. J'ai expliqué la phrase à la fille.

2. A. Le professeur a parlé à l'étudiant.
   B. Tu as prêté ton livre à l'étudiant.

3. A. Le président a écouté l'étudiante.
B. Le professeur a donné une mauvaise note à l’étudiante.

   B. Mon père a vendu une voiture à l’homme.

5. A. La femme connaît le garçon.
   B. Marie a donné l’examen au garçon.

6. A. Jean a téléphoné à la fille.
   B. Daniel a passé un mot à la fille.

7. A. Léon a parlé au conducteur d’autobus.
   B. L’agent de police a donné un PV au conducteur d’autobus.
**Post-test**

**SU**

1. A. Geoffrey a obéi à l’agent de police.
   B. L’agent de police a donné un PV à Marie.

2. A. J’ai vu le joueur.
   B. Le joueur a envoyé le ballon aux gens.

3. A. Philip a parlé à l’étudiant.
   B. L’étudiant a prêté le stylo à Jacques.

4. A. Jeanne connaît le professeur.
   B. Le professeur a donné une conférence à la classe d’anglais.

5. A. Brigitte a rencontré l’homme.
   B. L’homme a raconté l’histoire aux enfants.

6. A. Louise a aidé le professeur.
   B. Le professeur a montré un film à la classe.

7. A. Nous avons écouté la secrétaire.
   B. La secrétaire a lu une déclaration à la foule.

**DO**

1. A. L’éditeur a publié l’article.
   B. Bernard a envoyé l’article à la revue.

2. A. Philip a lu le livre.
   B. Janelle a donné le livre à ma mère.
3. A. L’enfant a cassé le vase.
   B. Robert a donné le vase à ma mère.

4. A. Le fermier a cultivé les haricots.
   B. Jean-Luc a vendu les haricots à la femme.

5. A. Angélique a mangé la pomme.
   B. J’ai donné la pomme à Julie.

6. A. Hélène a écrit l’histoire.
   B. Vous avez envoyé l’histoire à l’éditeur.

7. A. Guy a lu la lettre.
   B. Tu as envoyé la lettre à ton amie.

IQ
1. A. Tu as parlé au professeur.
   B. La classe a envoyé les fleurs au professeur.

2. A. Nous avons vu l’acteur.
   B. La réalisatrice a donné un prix à l’acteur.

3. A. Christine connaît l’écrivain.
   B. J’ai envoyé des questions à l’écrivain.

4. A. Christophe a écouté la chanteuse.
   B. Nous avons envoyé une lettre à la chanteuse.

5. A. Nathalie a rencontré l’artiste.
B. Jacques a montré des tableaux à l’artiste.

6. A. Cécile a rencontré le soldat.
   B. Le Président a remis une médaille au soldat.

7. A. Denis connaît le prêtre.
   B. Le Pape a envoyé une lettre au prêtre.
Appendix B

Pre-test

Directions: Combine the following sentences, attaching sentence B to sentence A, using the words who, whom, which or that.

SU

1. A. Joan likes the professor.
   B. The professor gives easy exams to the class.

2. A. Bob admires the student.
   B. The student wrote a letter to John.

3. A. Jerry likes the teacher.
   B. The teacher explained the answers to the class.

4. A. Judy knows the man.
   B. The man sent a letter to Tom.

5. A. Your brother saw the girl.
   B. The girl handed the pencil to me.

6. A. The father spanked the little girl.
   B. The little girl threw the dish to the little boy.

7. A. My mother met the student.
   B. The student lent the grammar book to me.
DO
1. A. Amy grabbed the letter.
   B. Jason handed the letter to Julie

2. A. Betty dropped the note.
   B. Bill wrote the note to the teacher.

3. A. We ate the candy.
   B. My father brought the candy to my mother.

4. A. I read the magazines.
   B. Jill sent the magazines to Mary.

5. A. Your sister saw the present.
   B. My mother gave the present to me.

6. A. Janet rode the bicycle.
   B. Your father gave the bicycle to Jim.

7. A. My roommate studied the chapter.
   B. The teacher assigned the chapter to the class.

IO
1. A. The teacher looked at the girl.
   B. I explained the sentence to the girl.

2. A. The professor talked to the student.
   B. You lent your book to the student.
3. A. The chairman listened to the student.
   B. The professor gave a low grade to the student.
4. A. John works for the man.
   B. My father sold a car to the man.
5. A. The woman knows the boy.
   B. Mary handed the exam to the boy.
6. A. John telephoned the girl.
   B. Bill passed a note to the girl.
7. A. Lenny spoke to the bus driver.
   B. The policeman gave a ticket to the bus driver.
Post-test

Directions: Combine the following sentences, attaching sentence B to sentence A, using the words who, whom, which or that.

SU
1. A. Lester obeyed the policeman.
   B. The policeman gave a ticket to Mary.

2. A. I saw the player.
   B. The player kicked the ball to the people.

3. A. Frank talked to the student.
   B. The student lent the pen to Bill.

4. A. Judy knows the professor.
   B. The professor gave a lecture to the English class.

5. A. Alice met the man.
   B. The man told the story to the children.

6. A. Betty helped the teacher.
   B. The teacher showed a film to the class.

7. A. We listened to the secretary.
   B. The secretary read a statement to the crowd.
DO
1. A. The editor published the story.
   B. Bill sent the story to the magazine.

2. A. Philip read the book.
   B. Jane gave the book to my mother.

3. A. The child broke the vase.
   B. Jerry gave the vase to my mother.

4. A. The farmer grew the beans.
   B. John sold the beans to the woman.

5. A. Lisa ate the apple.
   B. I gave the apple to Julie.

6. A. Elaine wrote the story.
   B. You sent the story to the publisher.

7. A. Barry read the letter.
   B. You sent the letter to your friend.

IO
1. A. You talked to the teacher.
   B. The class sent the flowers to the teacher.

2. A. We saw the actor.
   B. The director gave an award to the actor.

3. A. Joan knows the writer.
   B. I sent some questions to the writer.
4. A. Sam listened to the singer.
   B. We sent a letter to the singer.

5. A. Susan met the artist.
   B. Jack showed some pictures to the artist.

6. A. Carol met the soldier.
   B. The President presented a medal to the soldier.

7. A. Dan knows the priest.
   B. The Pope sent a letter to the priest.
Constraints on wordfinal schwa loss in Middle High German

Renata Raffelsiepen
rrenate@zedat.fu-berlin.de

1. Introduction

When described as a deletion rule wordfinal schwa loss in Middle High German (MHG) is highly idiosyncratic. Systematic restrictions on the preceding segments indicate the phonological conditioning of the rule yet its phonological motivation is elusive. The impression of arbitrariness is reinforced by the observation that specific phonological restrictions correlate with morphological and even semantic properties of words. Why did schwa disappear only after liquids in feminine count nouns but also after nasals and voiceless obstruents in most unpluralizable nouns? Why are the phonological conditions for schwa loss in unpluralizable nouns identical to those in uninflected adjectives? Why do the conditions for schwa loss in titles or swearwords differ from those in other nouns?

The answers to these questions proposed in this paper are based on constraints rather than on rules (cf. Prince and Smolensky 1993) and rely on two controversial assumptions. Assuming a constraint *SCHWA all schwas will disappear unless they are needed to satisfy higher-ranking constraints. In this approach the true generalizations determining the development of the schwas concern the conditions for their stability rather than for their loss. The second assumption is that there exists a constraint LEVEL which requires all members of an inflectional paradigm to be identical in certain respects. This constraint presupposes that the forms to be evaluated consist of entire paradigms rather than individual words.

Together these two assumptions allow for a description of wordfinal schwa loss in MHG which refers neither to segment classes, nor to morphological or semantic word properties. The analysis also sheds light on the notion of possible language change.

The paper is structured as follows. In section 1 I describe the stability conditions for final schwa in words for which paradigmatic effects play no role such as uninflected words. In section 2 I provide evidence that in words which belong to inflectional paradigms the stability of final schwa is...
schwa is determined by the phonological structure of the other members of the paradigm. In section 3 I discuss additional factors which influence the development of wordfinal schwas.

2. The VOICE stability effect

In some word classes schwas disappeared after sonorants and voiceless obstruents, but remained after voiced obstruents. As an illustration of this particular phonological restriction on schwa deletion consider the development of the MHG collective neuter nouns in (1). The circumflex indicates vowel length. The glosses refer to the MHG meanings.2 The abbreviation NHG stands for 'New High German' and refers to the current state of the language.:  

(1)a. MHG   NHG
  geschirr[\] > Geschirr 'dishes'
  geblüet[,] > Geblüt 'blood'
  gebüsch[,] > Gebüsch 'bushes'
  gewölk[,] > Gewölk 'clouds'
  gestein[,] > Gestein 'rocks'
  gestirn[,] > Gestirn 'stars'
  gemütt[,] > Gemüt 'mind'

  getreid[,] > Getreid[\] 'food'
  gemüses[,] > Gemüse[\] 'mush'
  gesind[,] > Gesind[\] 'servants'
  gewerb[,] > Gewerb[\] 'business'
  gelend[,] > Geland[\] 'terrain'
  gebirg[,] > Gebirg[\] 'mountains'
  gesmïd[,] > Geschmied[\] 'wrought iron'

The development of the final schwa in the 88 MHG collective neuter nouns derived by circumfixation which still exist in modern German is shown in table (2):3

---

2The data are based on Lexer's Mittelhochdeutsches Handwörterbuch (1878) and Duden Deutsches Universalwörterbuch (1989).

3This number excludes neuter nouns which did not have a schwa in MHG such as Getier 'animals, collective'. In addition some MHG neuter nouns with final schwa are excluded because they are synchronically indistinguishable from a class of highly productive nomina actionis. The class in question includes nouns of the type GeXe, where X is a verb with initial stress, such as Gequatsche 'chattering', Gekichtere 'giggling', Gestechenere 'telephoning', based on the verbs quatschen 'to chat', kichern 'to giggle', telefonieren 'to telephone' (for discussion see Olsen 1991 and references therein). The fact that nouns of the type GeXe are always acceptable in German makes it difficult to assess the development of final schwa in certain MHG collective neuter nouns. Does the existence of NHG Gehetze 'rushing' indicate that the schwa exceptionally failed to delete in the MHG noun gehetze? Or, more likely, did MHG gehetze become obsolete (as did most MHG collective neuter nouns) and NHG Gehetze is an instance of the productive rule mentioned above? In general the types (i.e. inherited collective nouns versus new nomina actionis) can be clearly distinguished on the basis of semantic, syntactic, and phonological criteria as is illustrated in (1):

(i)a. Gepäck 'baggage'  b. Gepacke 'packing'
<table>
<thead>
<tr>
<th>(2)</th>
<th>total in MHG</th>
<th>schwa retained in NHG</th>
<th>schwa lost in NHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>final schwa after voiceless obstruents or sonorants:</td>
<td>64</td>
<td>2 (Gerippe, Gefülle)</td>
<td>62</td>
</tr>
<tr>
<td>final schwa after voiced obstruents:</td>
<td>24</td>
<td>24</td>
<td>-</td>
</tr>
</tbody>
</table>

The same phonological restriction on schwa deletion is found in adjectives as is illustrated in (3):\(^4\)

<table>
<thead>
<tr>
<th>(3)a.</th>
<th>MHG &gt; NHG</th>
<th>b.</th>
<th>MHG &gt; NHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>dick[] &gt; dick(^5)</td>
<td>'thick'</td>
<td>trëg[] &gt; träg[]</td>
<td>'lazy'</td>
</tr>
<tr>
<td>rëf[] &gt; reif</td>
<td>'ripe'</td>
<td>eël[] &gt; öd[]</td>
<td>'barren'</td>
</tr>
<tr>
<td>stil[] &gt; still</td>
<td>'still'</td>
<td>bø[z][] &gt; bô[z][]</td>
<td>'mad'</td>
</tr>
<tr>
<td>rein[] &gt; rein</td>
<td>'clean'</td>
<td>vejg[] &gt; feig[]</td>
<td>'destined to die'</td>
</tr>
<tr>
<td>swæt[] &gt; schwer</td>
<td>'heavy'</td>
<td>trüeb[] &gt; trüb[]</td>
<td>'dull'</td>
</tr>
<tr>
<td>zäh[] &gt; zäh</td>
<td>'tough'</td>
<td>müed[] &gt; müd[]</td>
<td>'tired'</td>
</tr>
<tr>
<td>rïch[] &gt; reich</td>
<td>'rich'</td>
<td>mürw[] &gt; mürb[]</td>
<td>'crumbly'</td>
</tr>
<tr>
<td>spæt[] &gt; spæt</td>
<td>'late'</td>
<td>lë[z][] &gt; lei[z][]</td>
<td>'quiet'</td>
</tr>
<tr>
<td>kiusch[] &gt; keusch</td>
<td>'chaste'</td>
<td>snëd[] &gt; schnöd[]</td>
<td>'contemptuous'</td>
</tr>
<tr>
<td>lær[] &gt; lær</td>
<td>'empty'</td>
<td>blæd[] &gt; blöd[](^6)</td>
<td>'weak, tender'</td>
</tr>
</tbody>
</table>

Both the inherited collective noun in (ia) and the productively coined action nominal in (ib) are (etymologically) related to the verb tacken 'to pack'. Nouns belonging to the first type are historically based on verbs or nouns, where many of those bases are obsolete now (e.g. Getreide 'grain', Geschirr 'dishes', etc.). The stems of the inherited nouns always consist of a single foot and often show unumlaut. The relation to their etymological base is typically marked by semantic idiosyncrasies. By contrast, nouns which are due to the current productive rule are always based on actual verbs, never have unumlaut, and the semantic relation to their base is strictly compositional (cf (ib)). The few MHG nouns which do not allow for a clear classification according to these criteria (i.e. gehetze, gerinne, etc.) have been omitted from consideration in table (43).\(^\)\(^4\)

\(^4\)In NHG the type of collective neuter nouns illustrated in (1) and adjectives differ in that substandard variants without the final schwa are far more acceptable for adjectives.

\(^5\)The schwa does not delete in adverbs (e.g. dick[\] satt sein 'to be very full', lang[\] her sein 'to be a long time ago', etc.), where it apparently functions as a suffix. I will not address the question of how to formally account for the persistence of the schwa in such cases.
Constraints on wordfinal schwa loss in Middle High German

Of the (incomplete) list of 87 MHG adjectives ending in schwa (i.e. the former ja/jö-stems) listed in Paul 58 still exist (cf. Paul 1989:212). The table in (4) shows the distribution of word-final schwa for those adjectives in Modern German:

<table>
<thead>
<tr>
<th>(4)</th>
<th>total in MHG</th>
<th>schwa retained in NHG</th>
<th>schwa lost in NHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>final schwa after voiceless obstruents or sonorants:</td>
<td>43</td>
<td>1 (irre)</td>
<td>42</td>
</tr>
<tr>
<td>final schwa after voiced obstruents:</td>
<td>15</td>
<td>12</td>
<td>3 (wild, elend, fremd)</td>
</tr>
</tbody>
</table>

The status of the exceptions listed in table (4) will be discussed shortly. The nearly complete loss of word-final schwas after voiceless obstruents or sonorants is a rather recent development. Wilmanns (1911) notes that the adjectives nütze⁶useful', irre 'mad', kirre 'tame', dürre 'dry', stille 'still', dünn 'thin', and zähe 'tough' 'can or must retain the final schwa'. Of these words, the last four are no longer pronounced with final schwa.

Within a rule-based approach the pattern of schwa loss illustrated above can be stated as shown in (5). The additional morphological restrictions stated in that rule are discussed in section 2:

(5)  
[+son] Domain: collective neuter nouns  
\[
\text{\[\text{\textbackslash}\]} \rightarrow \emptyset \mid [-\text{son}] \mid \_\#\] uninflected adjectives  
\[[-\text{voice}]]\] most non-count nouns, titles, swear words

The deletion rule in (5) is phonologically odd because voiceless obstruents and sonorants do not constitute a natural class. This problem disappears if the conditions for schwa stability are

⁶In addition to blöde 'feeble-minded' there is also a variant blöd 'annoying' in NHG, which presumably originates in German dialects in which the schwa disappeared in all adjectives. The observation that the two adjectives also differ in meaning shows that they are separate lexical items.

⁷This number excludes the word nütze (from MHG nütze). In NHG, this word occurs only in the idiomatic phrase "zu etwas/nichts nütze sein" 'to be good for something/nothing'. The irregular persistence of the final schwa in nütze is typical for the phonological behavior of words in fossilized phrases. The negated cognate of nütze, the adjective unnütz 'useless' (from MHG unnütze), occurs freely and shows the regular loss of final schwa.

⁸See footnote 7.
described instead: schwas are stable after voiced obstruents and delete elsewhere. This suggests that there is a general constraint against schwas which is violated after voiced obstruents.\cite{9} A preliminary version of that constraint is stated in (6) (cf. Mester and Ito 1994):

\begin{align*}
\text{(6) } \quad & \text{*SCHWA} \\
& \text{Schwas are prohibited.}
\end{align*}

Evaluation of candidate forms with respect to *SCHWA is straightforward as can be demonstrated with the example MHG er[\text{"z"}]], NHG Erz 'ore' shown in (7):\cite{10}

\begin{tabular}{|c|c|}
\hline
\text{(7)} & \text{*SCHWA} \\
\hline
er[\text{"z"}]] & ** \\
er[\text{"z"}] & * \\
erz[] & * \\
\hline
\end{tabular}

Given the constraint *SCHWA the question arises of why schwas failed to delete after voiced obstruents. According to Wilmanns (1911:364) the deletion patterns stated in (5) have traditionally been related to the absence of voiced obstruents in syllable-final position in German (cf. Adelung 1781). The constraint in question can be stated as follows (cf. Shibatani 1973):

\begin{align*}
\text{(8) } \quad & \text{CODA VOICE (first version)} \\
& \text{Voiced obstruents in coda position are prohibited.}
\end{align*}

\footnote{The observation that schwas tend to disappear unless specific conditions obtain is also supported by the development of schwa in Proto-Slavic. According to Leed schwa disappears in "weak position" but is stable in "strong position". He notes that "\text{"z"} is said to be in strong position when it occurs: 1) before \text{"t"} or \text{"n"} when the resulting sequence occurs between consonants; 2) as the second, or even-numbered \text{"z"} in a sequence of syllables containing \text{"z"}, counting from the end of the word. \text{"z"} is said to be in weak position when it occurs elsewhere..." (Leed 1958:15). Crucially, the description focuses on the conditions for schwa stability, rather than the conditions for schwa loss.}

\footnote{Clearly, schwa loss in MHG er[\text{"z"}]] cannot be considered an overall phonological improvement since it resulted in a complex coda (i.e. erz) (cf. the view of language change as "local improvement" in Vennemann 1988). This shows that the constraint *SCHWA dominates the constraint NOCODA (cf. Prince and Smolensky 1993).}
Reference to a specific class of speech sounds can be avoided by invoking the notion of markedness as in (9). That restatement presupposes that the unmarked value for the feature [±voice] is plus for sonorants and minus for obstruents (cf. Chomsky and Halle 1968:406):

(9) CODA VOICE (final version)

Speech sounds in coda position must be unmarked for the feature [±voice].

Unlike *SCHWA the constraint CODA VOICE is never violated and hence is undominated in German. The tableau in (10), which compares forms with schwa with the corresponding schwaless forms, shows that the ranking CODA VOICE >> *SCHWA accounts for the data considered so far. The examples in (10a,b,c) represent words where the final schwa is preceded by a voiceless obstruent, a sonorant, and a voiced obstruent, respectively.11 (The exclamation mark indicates a "fatal" violation, which entails the elimination of the candidate.)

<table>
<thead>
<tr>
<th>(10)</th>
<th>candidates</th>
<th>CODA VOICE</th>
<th>*SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>dick[]</td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>rein[]</td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>rein</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>træg[]</td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>træg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The fact that CODA VOICE is never violated in German has led proponents of rule-based approaches to conclude that there is an automatic rule of "Final Devoicing" in German. The observation that the final schwa in words like træg[\] has been stabilized by the illformedness of the form træ[\g] argues against the existence of such a rule. Yet the question arises of what rules out the "devoiced" candidate træk. This candidate cannot be eliminated on phonological grounds.

---

11 A question of theoretical interest which is raised by this description is whether or not the VOICE stability effect exhibited by the adjective træg[\] is contingent on the fact that [±voice] is a contrastive feature in German. Could there for example be a stability effect in American English which is based on the fact that stops have aspirated allophones in syllable-initial position but glottalized allophones in coda position? I suspect that such an effect could not exist but that contrastiveness is a crucial prerequisite for stability effects.
but rather calls for a different type of constraint which relates candidates to input forms. Ranking the constraint PRESERVE VOICE stated in (11) higher than *SCHWA yields the desired effect:

(11) PRESERVE VOICE

The feature voice must be preserved

The tableau in (12) shows how the ranking of the three constraints considered so far accounts for the preference of schwaless forms unless the schwa is preceded by a voiced obstruent.

<table>
<thead>
<tr>
<th>(12)</th>
<th>Input</th>
<th>candidates</th>
<th>CODA VOICE</th>
<th>PRESERVE VOICE</th>
<th>*SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>dick[\ ]</td>
<td>dick[\ ]</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>rein[\ ]</td>
<td>rein[\ ]</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>traeg[\ ]</td>
<td>traeg[\ ]</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All input forms end in schwa to match the historical starting point of schwa deletion. That is, the inputs do not consist of abstract underlying forms but rather represent the surface forms encountered by the learner in language acquisition. The constraint ranking accounts for the form selected by the learner on the basis of this input. "Schwa deletion" thus refers to a historical phase where learners were more likely to encounter words ending in schwa than to render that schwa in their own speech. As a result the schwas in forms like dick[\ ] and rein[\ ] ended up disappearing from the input forms which completed the deletion process.

Consider now the words in which schwa deleted despite being preceded by a voiced obstruent. The adjectives elend and fremd differ from the other adjectives under consideration in that they consisted of a ternary foot in MHG (i.e. MHG éllènde, vrèmede) provided that a foot consists of a stressed syllable and the following less stressed syllables. The tendency in German
not to exceed binary feet was already observed by Heyse (1838). His observation can be stated in terms of the following constraint:

\[(\sigma^2)_F\]

Feet must be maximally binary.

The fact that schwa systematically deleted after voiced obstruents in words consisting of ternary feet indicates that the constraint \[(\sigma^2)_F\] dominates PRESERVE VOICE. Recall that *CODA VOICE is never violated in German:

<table>
<thead>
<tr>
<th>Input</th>
<th>candidates</th>
<th>CODA VOICE</th>
<th>[(\sigma^2)_F]</th>
<th>PRESERVE VOICE</th>
<th>*SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ëllènd[_]</td>
<td>*!</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>ëllènd[_]</td>
<td>*!</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ëllênt</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The constraint ranking in tableau (14) also accounts for the different development of the final schwa in the words in (15a,b), which differ w.r.t. foot structure:

(15)a. MHG > NHG

gègènde > Gègèn[t] 'area'
lébénde > lébèn[t] 'alive'

b. MHG > NHG

légènde > Légènd[\_] 'legend'
behènde > behènd[\_] 'swift'

---

\[12\] The constraint in (13) differs from the constraint PTBIN in Prince and Smolensky in that it imposes an upper limit on the size of feet rather than require binary feet. This modification is necessary to describe the data correctly.

\[13\] According to the prosodic hierarchy feet are limited by phonological word boundaries. The words in (i) differ from those in (15a) in that they consist of two phonological words. The schwa in (i) is therefore stable according to the ranking in tableau (14), although the stress contour of those words is similar to that of historically fused compounds like ëllènde, in which the schwa disappeared:

(i) MHG > NHG

(snft)w(käese)_w > (Schnitt)_w(käs[i])w 'sliced cheese'
(gläs)w(öuge)_w > (Glás)_w(aug[i])w 'glass eye'
(vür)w(sörge)_w > (Für)_w(sörg[i])w 'welfare'
(ür)w(künde)_w > (Ur)_w(künd[i])w 'document'
Most cases where schwa deleted after voiced obstruents can be explained with reference to foot binarity. The question of why schwa disappeared in MHG wilde (NHG wild) is less clear. The loss, however, appears to be phonologically motivated as the VOICE stability effect generally fails after the cluster lđ.\textsuperscript{14}

The constraint ranking in (14) applies to all phonological words in MHG regardless of their category.\textsuperscript{15} However the effect is visible only in words which do not belong to inflectional paradigms. This is because in inflected words certain schwas are stabilized by independent constraints on paradigmatic leveling which obscure the VOICE stability effect. In section 2 it will be shown that the restriction of schwa deletion to specific morphological categories as in rule (5) becomes unnecessary if candidates consist of entire inflectional paradigms rather than individual words.

Consider next the issue of possible deletion rules, or rather, of possible stability effects. Consider the three hypothetical stability effects listed as A, B, and C in (16):

<table>
<thead>
<tr>
<th>type:</th>
<th>schwa is stable:</th>
<th>schwa deletes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>after voiced obstruents</td>
<td>elsewhere</td>
</tr>
<tr>
<td>*B</td>
<td>after voiceless obstruents</td>
<td>elsewhere</td>
</tr>
<tr>
<td>*C</td>
<td>after sonorants</td>
<td>elsewhere</td>
</tr>
</tbody>
</table>

Type A corresponds to the VOICE stability effect discussed above. This stability effect implies that *SCHWA is dominated by a constraint against voiced obstruents in syllable codas. Since there is strong evidence both from language acquisition (cf. Stampe 1979) and cross-

\textsuperscript{14}The fact that in words like streng 'strict', enge 'narrow', and bange 'anxious' word-final schwa deleted after postnasal g-deletion occurred (e.g. streng'g'], streng'g', streng'g)] supports the analysis proposed here. Crucially, unlike the obstruent [g], the nasal [ŋ] is not subject to final devoicing and therefore does not stabilize the following schwa. The deletion of final schwa in those words argues against the analysis proposed by Hall (1992), and Wiese (1994) who derive the velar nasal \textit{synchonically} from an underlying cluster /ng/.

\textsuperscript{15}The restriction to phonological words is motivated by the observation that there is no VOICE stability effect in function words (cf. g[ð] > g[p] 'from', g[m] > g[p] 'if'). The claim that function words are not phonological words is based on various phonological properties including the fact that they can disobey minimality conditions (cf. Selkirk 1995, Hall 1998). The absence of the VOICE stability effect in function words shows that for function words the constraint PRESERVE VOICE does not dominate *SCHWA. Instead schwa deletion appears to be determined by sentence intonation. The fact that schwa deleted in mit[l] > mit (NHG mit) 'with' but not in am[l] (NHG ohne) 'without' may well be determined by the fact that mit frequently combines with an unstressed determiner (mit dem Geld 'with the money') whereas ohne tends to combine with bare nouns (ohne Geld 'without money'). That is, the stability of the schwa in ohne serves to avoid stress clashes.
linguistically that such a constraint exists the pattern described in A qualifies as a possible stability effect.

Consider by contrast types B and C. Type B presupposes a constraint against voiceless obstruents in coda position and type C presupposes a constraint against sonorants in coda position. Provided that there is no independent evidence for either constraint, the corresponding stability effects could not be described and are thereby ruled out.

Given the range of (presumably universal) constraints it is accordingly possible to predict the range of possible stability effects. The theory thus allows one to assess the plausibility of linguistic descriptions. Consider for example Koziol's description of schwa loss in Middle English:

"The loss within each individual category - weakly stressed, polysyllabic, disyllabic, native and borrowed words, begins earlier after voiceless stops and fricatives, as well as after liquids or nasals than after voiced stops or fricatives" (Koziol 1937:308).

Minkova (1991) dismisses Koziol's observation on phonological grounds:

"It would be even more than difficult to find the common denominator in the environment defined by Koziol, so the whole proposal seems at best indefensible" (Minkova 1991:111)

Minkova errs in assessing Koziol's observations in terms of a deletion rule. Once looked upon from the 'stability perspective' the pattern of Middle English schwa loss observed by Koziol is simply another instance of the VOICE stability effect.

3. LEVEL stability effects

3.1 Schwa loss in verbs

Consider the type of quantity sensitivity exhibited by the schwa loss in the MHG first person singular present tense forms in (17). While this schwa is generally considered an

---

16 All syllable structure constraints used in my description are based on Vennemann's independently motivated preference laws for syllable structure (cf. Vennemann 1988).

17 Note that the Voice stability effect only requires that both CODA VOICE and PRESERVE VOICE dominate "SCHWA. The irrelevance of the order between CODA VOICE and PRESERVE VOICE implies that "Final Devoicing" is not a prerequisite for the VOICE stability effect.
inflectional morpheme in NHG the data in (17) show that its stability is phonologically governed in MHG. Recall that the circumflex indicates length in vowels. Consonantal length is represented by geminates.
Apocope tends to be restricted by minimality conditions on output forms. In Estonian, for example, final vowels delete in nominative forms unless the remaining stem consists merely of a single syllable containing a short vowel followed by a short consonant (cf. McCarthy and Prince 1986). Apocope is restricted in a similar fashion in Germanic (Prokosch 1939), Lardil (Wilkinson 1986), and Proto-Nordic (Riad 1992).

In view of this general tendency to avoid monosyllabic words with a VC-rhyme the pattern of MHG schwa deletion calls for an explanation. Specifically, final schwa deleted precisely in words with a short stem vowel followed by a single consonant as shown in (17a), but was stable elsewhere. The deletion pattern in (17) hardly reflects a phonological preference for VC-rhymes since all short vowels in the MHG words in (17a) lengthened subsequently. Yet another phonological oddity is the segmental restriction on schwa deletion shown in (17a): the rule applies only after liquids as is shown by the fact that the schwa failed to delete in the examples in (18). Verbs in which the final schwa is preceded by a voiced obstruent are omitted from consideration to rule out potential VOICE stability effects.

---

18Perhaps the segmental restriction is not quite as odd as the moraic one in view of the observation that codas are the more preferred the more sonorous they are whereas syllable heads are the more preferred the less sonorous they are (cf. Vennemann 1988).
(18) \hspace{1em} \begin{tabular}{lll}
MHG & NHG & \\
wat[\ ] & wate & 'I go' \\
nick[\ ] & nicke & 'I bend' \\
bet[\ ] & bete & 'I beg' \\
nèm[\ ] & nehme & 'I take' \\
den[\ ] & dehne & 'I stretch' \\
wasch[\ ] & wasche & 'I wash' \\
lach[\ ] & lache & 'I laugh' \\
knet[\ ] & knete & 'I knead' \\
köm[\ ] & komme & 'I come' \\
sprech[\ ] & spreche & 'I speak'
\end{tabular}

The patterns of schwa loss illustrated in (17), (18) can be described in terms of the deletion rule in (19) (cf. Paul 1989:81). The morphosyntactic domain is in parentheses because it includes the categories of words in which schwa deletes only under the phonological conditions specified to the left. There is of course no need to exclude the categories associated with the schwa deletion rule in (5), which is phonologically less restrictive than rule (19).

(19) \[ \text{[\ ]} \rightarrow \emptyset / \text{XVL} \_\_ \text{Y} \] (Domain: verbs, feminine and masculine count nouns)

To explain the deletion pattern in (19) within the constraint-based analysis proposed here, which presupposes a constraint against schwa, one must focus on the question of what stabilized the schwa in the examples in (17b) and (18). The observation which I will argue to be the key to understanding the development of the final schwas in those words is that they belong to inflectional paradigms and that the schwa deleted either in all members of a paradigm or in none. Consider the complete paradigms of MHG \textit{male} 'I grind', \textit{mále} 'I mark', and \textit{mache} 'I make' listed in (20).
Vowel alternations are typical for so-called strong verbs and do not affect the development of the final schwa in MHG. The grapheme <ch> represents the velar fricative [x].

(20)  SG 1.  a.  mal[\>] > mal  
  b.  mål[\]  
  c.  mach[\]

  2.  mel[\]st > melst  
      mål[\]st  
      mach[\]st

  3.  mel[\]t > melt  
      mål[\]t  
      mach[\]t

PL 1.  a.  mal[\]n > maln  
      mål[\]n  
      mach[\]n

  2.  mal[\]t > malt  
      mål[\]t  
      mach[\]t

  3.  mal[\]nt > malnt  
      mål[\]nt  
      mach[\]nt

Following Anderson (1992) a paradigm is defined as the set of the inflected forms of a word whose distribution is determined solely by agreement with another element within some grammatical configuration. On this account the different verb forms in for instance (20a) are members of the same paradigm because they agree with the subject within the clause. By contrast, the verb forms in (21a) do not belong to the same paradigm because the choice of tense is not determined by agreement. The verb forms in (21b) are not members of the same paradigm either because their distribution is determined not solely by agreement.

(21)a.  mal  '(I) grind'  
        muol  'I) ground'

b.  melst  '(you) grind'  
    muol[\]n  '(we) ground'

Determining the members of a paradigm is important because all and only the members of a paradigm are subject to a constraint on leveling which requires certain aspects of their phonological structure to be identical. For the purposes of this paper LEVEL will be defined as follows:

(22)  LEVEL

All shared consonants must occupy the same syllable position in each member of a paradigm
"Shared" consonants are consonants which occur in each member of the paradigm. For an illustration of LEVEL consider the evaluation of the three hypothetical paradigms in (23):

<table>
<thead>
<tr>
<th>(23)</th>
<th>LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>perl</td>
</tr>
<tr>
<td></td>
<td>perlk</td>
</tr>
<tr>
<td>b.</td>
<td>per.1e</td>
</tr>
<tr>
<td></td>
<td>per.len</td>
</tr>
<tr>
<td>c.</td>
<td>perl</td>
</tr>
</tbody>
</table>
|      | per.len| *

The paradigm in (23a) satisfies LEVEL because the three shared consonants p, r, and l occupy the same syllable position in each member. That is, the p is always in head position and the two liquids are always in coda position. Paradigm (23b) satisfies LEVEL as well. Only paradigm (23c) violates LEVEL because the l is in coda position in one member but in head position in another member.

The evaluation of the paradigms in (23) may suggest that LEVEL could also be defined as a constraint requiring the number of syllables in each member to be the same. While such a definition would suffice to account for MHG verbal paradigms it would not always yield the desired result. Specifically, the definition of LEVEL in (22) expresses a preference for paradigms in which the shared consonants exhibit the same adjacency relations in all members (cf. (24a)) over a paradigm in which all members have the same number of syllables (cf. (24b)) as is shown below:

<table>
<thead>
<tr>
<th>(24)</th>
<th>LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>perl</td>
</tr>
</tbody>
</table>
|      | per.len| *
| b.   | pe.rel|
|      | per.len| **

The notion "shared" consonants requires some clarification. Recall that obstruents in coda position are always voiceless in German. As a result there are alternations like MHG tal[g]le 'days' - tal[k] 'day', where an obstruent is in head position in one member but in coda position and hence voiceless in the other. As far as evaluation with respect to LEVEL is concerned the velar stops in tal[g]le - tal[k] are considered shared consonants in spite of their phonemic distinctness.
The fact that schwa deleted either in all members of a paradigm or in none indicates that the constraint LEVEL dominates *SCHWA. Assuming that not schwa deletion but rather the stability of schwas requires an explanation the question arises of why the schwas failed to delete in certain paradigms. Arguably those paradigms include at least one member which requires a schwa for strictly phonological reasons. Consider first the question of why schwas failed to delete in verbal paradigms after consonants other than liquids. Because verbal paradigms include a member with the suffix n schwa loss would entail a sonority violation whenever the schwa follows a segment which is less sonorous than liquids. The relevant constraint is based on the Head Law and the Coda Law proposed in Vennemann 1988 (cf. also Sievers 1901):\textsuperscript{20}

(25) \begin{equation}
\text{SON}
\end{equation}

A segment in the syllable head may only be followed by segments of higher sonority; a segment in the syllable coda may only be preceded by segments of higher sonority.

That is, for every segment in the syllable shell (i.e. head and coda) the sonority level must increase toward the nucleus. The sonority hierarchy with reference to which the constraint in (25) is evaluated is given in (26):

(26) \begin{tabular}{c|c|c|c|c|c|c} 
increasing sonority & decreasing sonority & Syllable \\
\hline
Vowel & r & l & Nasal & Fricative & Stop & s,t \\
\hline
\end{tabular}

The ranking among r, l and the nasals in (25), is consistent with the 'discontinuous gradings' of sonority proposed by Sievers on auditory grounds (1901:198f).\textsuperscript{21} According to the table in (26) sonorants must precede obstruents in coda position and the only permissible sonorant clusters are rl, rN, lN, and rIN ('N' = nasal). Any other combinations result in 'sonority

\textsuperscript{20} Those laws say that syllable heads and codas are the more preferred the more sharply the sonority increases towards the nucleus (cf. Vennemann 1988:13ff).

\textsuperscript{21} There seems to be general agreement among phonologists that German r is more sonorous than l which in turn is more sonorous than the nasals. The overall structures of the sonority hierarchies proposed, however, differ considerably (cf. Vennemann (1982:284), Strauss (1982:97), Hall (1992:64)).
violations' which would inhibit schwa deletion as is shown in (27).\textsuperscript{22} The MHG words in each row differ only with respect to the order of the consonants which flank the schwa.

\begin{tabular}{llllll}
\hline
27(a) & MHG & NHG & b. & MHG & NHG \\
--- & --- & --- & --- & --- & --- \\
\text{at}[\backslash]m & At[\backslash]m & 'breath' & zim[\backslash]t & Zimt & 'cinnamon' \\
\text{ov}[\backslash]n & Of[\backslash]n & 'oven' & sen[\backslash]f & Senf & 'mustard' \\
\text{kell}[\backslash]r & Kell[\backslash]r & 'cellar' & quurr[\backslash]l & Quirl & 'whisk' \\
\text{ham}[\backslash]l & Hamm[\backslash]l & 'wether' & hal[\backslash]m & Halm & 'stalk' \\
\text{ham}[\backslash]r & Hamm[\backslash]r & 'hammer' & har[\backslash]m & Harm & 'harm' \\
\hline
\end{tabular}

The development of the schwa in the words in (27) is determined by the fact that the coda clusters in (28a), but not those in (28b), violate SON:

\begin{tabular}{llllll}
\hline
28(a) & *tm & b. & lmt & *
--- & --- & --- & --- & --- \\
\text{*fn} & & l'f & \\
\text{*lr} & & l & \\
\text{*ml} & & l'm & \\
\text{*mr} & & l'm & \\
\hline
\end{tabular}

The observation that schwa never deletes if its loss would entail a SON violation indicates that SON dominates *SCHWA as is shown in (29):\textsuperscript{23} In fact, the constraint SON is never violated in German which indicates that it is undominated. The tableau in (29) merely compares forms with schwa with the corresponding schwaless candidates. To eliminate candidates like \textit{am}, \textit{at}, \textit{alim}, etc. it is furthermore necessary to rank PRESERVE constraints higher than *SCHWA.\textsuperscript{24}

\begin{tabular}{|c|c|c|c|}
\hline
\text{(29)} & Input & candidates & SON & *SCHWA \\
--- & --- & --- & --- & --- \\
a. & at[\backslash]m & l & at[\backslash]m & * \\
\hline
\end{tabular}

\textsuperscript{22}The constraint SON in (25) also rules out the occurrence of adjacent consonants with equal sonority, in which schwa is indeed stable (cf. \textit{Am}[\backslash]n 'amen', etc.).

\textsuperscript{23}The description in (29) is not entirely satisfactory in that it fails to account for the chronology of schwa loss. For example, schwa in \textit{har}[\backslash]m disappeared earlier than schwa in \textit{hal}[\backslash]m, perhaps because of a preference for coda clusters with maximally sharp sonority drops (cf. Vennemann 1988:21). I will leave open for now the question of how to formulate constraints which account for such non-categorical preferences.

\textsuperscript{24}Constraints which preserve consonants are violable as is shown by historical developments like MHG \textit{weg}[\text{l}t] > NHG \textit{We}[\text{lt}] 'world', MHG \textit{la}[\text{mp}] > NHG \textit{La}[\text{m}] 'lamb', etc.
According to the constraint ranking in (29) wordfinal schwas are predicted to be stable if two consonants with nondecreasing sonority precede (e.g. Xlr[\], Xn[\], Xkn[\], etc). Due to a phonotactic constraint on phonological words there are no (uninflected) words with such clusters.\(^{25}\) Therefore there are no cases where final schwas are due to the SON stability effect.

Consider next the syllable appendices listed in (26). Only coronal obstruents can be extrasyllabic in German, which has also been claimed for English (Cf. Kiparsky 1981). Schwa loss in the words in (30) accordingly does not violate SON, since the final coronals are not part of the syllable proper.

(30) mark[\]t > markt 'market'; ar[ts][\]t > ar[ts]t 'medical doctor', ang[\]st > angst 'fear'

Because n is the most sonorous suffix occurring in verbal paradigms schwas are never needed to prevent SON violations in paradigms with stemfinal liquids as is illustrated with the paradigm of the verb mal((\)\)n 'to grind' in (20). If the stemfinal consonant is a nonliquid schwas are needed to avoid SON violations in the first and third person plural (e.g. mach[\]n > *machn, mach[\]nt > *machnt). The observation that the schwa is stable in all members of such paradigms (including mach[\]) indicates that both SON and LEVEL dominate *SCHWA. To illustrate this analysis it suffices to represent the paradigms by listing distinct members only as shown in (31).\(^{26}\) The constraint LEVEL is violated once in the second candidate listed in (31) because there is one shared consonant which appears in coda position in some members of the

---

\(^{25}\)There are some words like donre 'thunder' kërlre 'cellar' minre 'smaller' which are however always listed as variants of words where the schwa is non-final (i.e. doner, kël, miner). These variants occur only in words which are members of inflectional paradigms which include dactylics, which were reduced to trochees due to the constraint (s\(^2\)P (donre)[DAT] > donre)[DAT], etc.). Variants like donre[NOM] came most likely into being as a result of leveling with such reduced members of the paradigm.

\(^{26}\)The question of whether to represent the input as a complete paradigm or as a stem plus the complete set of suffixes will be left open here since nothing hinges upon this question.
paradigm and in head position in others, i.e. the velar fricative represented by the grapheme <ch>. 
Consider now the second phonological restriction on schwa deletion expressed in (19), that is, the restriction concerning length. That restriction arguably reflects the constraint WEIGHT stated in (32), which is based on the Weight Law proposed in Vennemann 1988:

(32) WEIGHT  
The maximal weight of a stressed syllable is three moras.

Assuming that short vowels or single consonants consist of one mora and that long vowels, diphthongs, or geminate consonants consist of two moras the development of the schwa in the infinitives in (33) can be described by ranking WEIGHT higher than \*SCHWA.

<table>
<thead>
<tr>
<th>(31)</th>
<th>SON</th>
<th>LEVEL</th>
<th>*SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>mach</td>
<td>machst</td>
<td>macht</td>
<td>machn</td>
</tr>
<tr>
<td>mach</td>
<td>machst</td>
<td>macht</td>
<td>mach[\n]nt</td>
</tr>
<tr>
<td>mach</td>
<td>machst</td>
<td>macht</td>
<td>mach[\n]nt</td>
</tr>
</tbody>
</table>

(33)a. mäl[\n]n *māln 'to mark'  b. mal[\n]n > māln 'to grind'
    tei[l\n]n *tei[ln] 'to share'  hol[\n]n > holn 'to call'
    vall[\n]n *valln 'to fall'    spil[\n]n > spiln 'to play'
    hær[\n]n *hærn 'to hear'     ner[\n]n > nern 'to cure'
    harr[\n]n *harrn 'to await'   var[\n]n > varn 'to go'
The tableau in (34) illustrates the analysis of the historical schwa loss in (33b). Like SON, the constraint WEIGHT is never violated in MHG which supports the ranking in (34).

<table>
<thead>
<tr>
<th>(34)</th>
<th>Input</th>
<th>candidates</th>
<th>WEIGHT</th>
<th>*SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>mål[]n</td>
<td>mål[]n</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>måln</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>mal[]n</td>
<td>mal[]n</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>maln</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Schwa loss in nouns like MHG ern[\]st > ernst 'earnestness' does not violate WEIGHT because the wordfinal coronal consonants are extrasyllabic and hence do not contribute to syllable weight. The fact that that there are no cases where wordfinal schwas show the WEIGHT stability effect is also due to the absence of words where schwas are preceded by three consonants or a long vowel followed by two consonants.27

Given the constraint ranking in (34) the MHG inflected verbs mål[\] 'I grind' and mål[\] 'I mark' differ in that the paradigm of mål[\] includes two members in which the schwa is necessary to avoid a WEIGHT violation (i.e. the forms mål[\]n, mål[\]nt) whereas the paradigm of mal[\] includes no such members. The members which require the schwa for phonological reasons are accordingly again the first and the third person plural, but in this case because the consonant n (unlike s or t) contributes to syllable weight. The observation that the schwa has been stable not only in the members which violate WEIGHT but in all members in the respective paradigms supports the claim that LEVEL dominates *SCHWA. The supplemented tableau in (35) accounts for the development of schwa in all inflected present tense verbs in MHG. Both the constraints SON and WEIGHT are inviolable in MHG which means that they cannot be ranked w.r.t. each other.

---

27The noun ernte 'harvest' is not an exception because the last of the three consonants is coronal and would therefore be extrasyllabic in the form ern. The stability of the final schwa in ernte is hence not a WEIGHT stability effect but rather a LEVEL stability effect w.r.t. to the plural form ernten (cf. section 2.2.).
Tableau (35) shows that the paradigms of verbs with a short stem vowel followed by a short liquid like *mál 'to grind' differ from the other MHG verbs in that they include no members in which schwas are needed to avoid SON or WEIGHT violations. Consequently, such paradigms satisfy LEVEL even if all schwas delete (including the wordfinal schwa as shown in (17)).

To summarize the description in (35) establishes a direct connection between the restriction to liquids in Paul's schwa deletion rule in (19) and the sonority of the most sonorous suffix in verbal paradigms (i.e. a nasal): since the sonority in codas must decrease the nasal suffix can be preceded by no consonants other than liquids. Reference to the constraints SON and LEVEL

---

I assume that the final ð in *malnt is extrasyllabic and hence does not contribute to syllable weight.
hence obviates the need to refer to liquids for the description of schwa loss in (17a). Similarly the restriction to short stems stated in Paul's schwa deletion rule in (19) follows from the fact that the heaviest suffix contributes one mora to syllable weight and is explained by ordering WEIGHT and LEVEL higher than *SCHWA.

The claim is then that the phonological restrictions on schwa loss in inflected words can be predicted on the basis of the most sonorous and the heaviest suffix within the inflectional paradigm. To test that claim it would be desirable to investigate paradigms in which the most sonorous suffix is not a nasal or does not weigh one mora. For example, given a paradigm in which \( l \) is the most sonorous suffix the constraint ranking in (35) would predict that schwa deletes only after the consonant \( r \). Unfortunately, there are no relevant cases which would allow one to test such predictions. The neuter paradigms with the plural suffix \( -r \) are never based on nouns ending in schwa (e.g. lamp 'lamb' - lember 'lams', ei 'egg' - eier 'eggs', etc.). Adjectival paradigms are not suited for testing the analysis illustrated in tableau (35) either. This is because of the large number of variants within the so-called strong declension which resulted from the merger of two distinct inflectional systems (i.e. nominal and pronominal) in MHG.\(^{29}\) However, as will be shown in sections 2.2 and 2.3, the constraint ranking in (35) together with the condition that candidates consist of entire paradigms does account for the existing cases. The description thus makes it unnecessary to refer to the morphological categories associated with the rule in (19).

3.2 Schwa loss in feminine nouns

Consider next the loss of final schwa in feminine count nouns mentioned in rule (19). In NHG the final schwa in such nouns is often analysed as a morpheme encoding feminine gender. As is shown by the data in (36) that schwa also deleted after short liquids preceded by short vowels in MHG.\(^{30}\)

---

\(^{29}\)In NHG adjectival paradigms no longer include variants. The difference in the site of the schwa in NHG pairs like dunkë[l]|[n]|A - Dunkë[l][n][N] follow from the condition that NHG adjectival paradigms are leveled and the fact that the most sonorous suffix is \( r \) in adjectival paradigms but \( n \) in nominal paradigms (cf. Raffelsiefen 1995).

\(^{30}\)The nouns in (36) are typically represented with both variants in Lexers' MHG dictionary (e.g. zal - zål[\( l \); wäl - wål[\( l \); etc.), but with the exception of tür[\( N \] - tür the form with schwa has become obsolete. The nouns listed below are counterexamples in that the variant with schwa has been retained in NHG:

<table>
<thead>
<tr>
<th>MHG</th>
<th>NHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>schal[( l ]</td>
<td>Schale</td>
</tr>
</tbody>
</table>
(36)  | MHG      | NHG  |  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>zal[\ ] &gt; zal</td>
<td>Zahl</td>
<td>'number'</td>
</tr>
<tr>
<td>wal[\ ] &gt; wal</td>
<td>Wahl</td>
<td>'choice'</td>
</tr>
<tr>
<td>tür[\ ] &gt; tür</td>
<td>Tür</td>
<td>'door'</td>
</tr>
<tr>
<td>schar[\ ] &gt; schar</td>
<td>Schar</td>
<td>'flock'</td>
</tr>
<tr>
<td>wer[\ ] &gt; wer</td>
<td>Wehr</td>
<td>'defence'</td>
</tr>
<tr>
<td>kür[\ ] &gt; kür</td>
<td>Kür</td>
<td>'examination'</td>
</tr>
<tr>
<td>gir[\ ] &gt; gir</td>
<td>Gier</td>
<td>'desire'</td>
</tr>
<tr>
<td>bir[\ ] &gt; bir</td>
<td>Birne</td>
<td>'pear'</td>
</tr>
</tbody>
</table>

After long liquids or long stem vowels and after consonants other than liquids schwas have been stable as is illustrated by the feminine nouns in (37a,b).32

(37)a.  | MHG      | NHG  |  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>huor[\ ]</td>
<td>Hur[\ ]</td>
<td>'whore'</td>
</tr>
<tr>
<td>hell[\ ]</td>
<td>Höll[\ ]</td>
<td>'hell'</td>
</tr>
<tr>
<td>vël[\ ]</td>
<td>Feil[\ ]</td>
<td>'file'</td>
</tr>
<tr>
<td>kapêll[\ ]</td>
<td>Kapêll[\ ]</td>
<td>'chapel'</td>
</tr>
<tr>
<td>biul[\ ]</td>
<td>Beul[\ ]</td>
<td>'bump'</td>
</tr>
<tr>
<td>sêl[\ ]</td>
<td>Seel[\ ]</td>
<td>'soul'</td>
</tr>
<tr>
<td>grill[\ ]</td>
<td>Grill[\ ]</td>
<td>'cricket'</td>
</tr>
</tbody>
</table>

b.  | MHG      | NHG  |  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>bêt[\ ]</td>
<td>Bitt[\ ]</td>
<td>'plea'</td>
</tr>
<tr>
<td>woch[\ ]</td>
<td>Woch[\ ]</td>
<td>'week'</td>
</tr>
<tr>
<td>hev[\ ]</td>
<td>Hef[\ ]</td>
<td>'yeast'</td>
</tr>
<tr>
<td>tasch[\ ]</td>
<td>Tasch[\ ]</td>
<td>'bag'</td>
</tr>
<tr>
<td>deck[\ ]</td>
<td>Deck[\ ]</td>
<td>'blanket'</td>
</tr>
<tr>
<td>van[\ ]</td>
<td>Fahn[\ ]</td>
<td>'flag'</td>
</tr>
<tr>
<td>sit[\ ]</td>
<td>Sitt[\ ]</td>
<td>'custom'</td>
</tr>
</tbody>
</table>

The observation that the nouns in (36), (37) exhibit the same schwa deletion pattern as the inflected verbs in (17), (18) leads one to suspect that the most sonorous suffix occurring in the nominal paradigms is also a nasal. In fact, all nouns in (36), (37) are members of paradigms which include no suffix other than n. The so-called "strong declension" is represented by the

| kêl[\ ] - kêl | Kehle | 'throat' |
| sol[\ ] - sol | Sohle | 'sole' |
| müll[\ ] - müll | Mühle | 'mill' |
| war[\ ] - war | Ware | 'awareness' |

---

31 For the development of MHG bir into NHG Birne is explained see see footnote 44.

32 A counterexample is the feminine noun fîr[\ ] 'hour, clock' (NHG Uhr), where the final schwa deleted in a word with a long stem vowel.
paradigm of *bête* 'plea' in (38) and the "weak declension" is represented by the paradigm of the noun *huore* 'whore'.

\[(38)\text{a.} \]

<table>
<thead>
<tr>
<th></th>
<th>strong</th>
<th></th>
<th>weak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sg. Nom</td>
<td>bète</td>
<td></td>
<td>huore</td>
</tr>
<tr>
<td>Gen</td>
<td>bète</td>
<td></td>
<td>huoren</td>
</tr>
<tr>
<td>Dat</td>
<td>bète</td>
<td></td>
<td>huoren</td>
</tr>
<tr>
<td>Acc</td>
<td>bète</td>
<td></td>
<td>huoren</td>
</tr>
<tr>
<td>Pl. Nom</td>
<td>bète(n)</td>
<td></td>
<td>huoren</td>
</tr>
<tr>
<td>Gen</td>
<td>bèten</td>
<td></td>
<td>huoren</td>
</tr>
<tr>
<td>Dat</td>
<td>bèten</td>
<td></td>
<td>huoren</td>
</tr>
<tr>
<td>Acc</td>
<td>bète(n)</td>
<td></td>
<td>huoren</td>
</tr>
</tbody>
</table>

In paradigms which belong to the strong declension the suffixed plural nominative and accusative forms replaced the earlier forms ending in schwa already in MHG. To illustrate the evaluation of the nouns in (36), (37) it suffices to represent the paradigms by listing the phonologically distinct members only as is shown in tableau (39):

---

33 The assumption that all of these forms are members of the inflectional paradigms is certainly problematic in view of Anderson's definition. However, my explanation for the development of the wordfinal schwas would still hold if inflectional paradigms included only the so-called structural cases (i.e. singular and plural nominative and singular and plural accusative).
Again, the only nouns which require no final schwa to satisfy SON, WEIGHT, and LEVEL are those with a short stem vowel followed by a short liquid as is shown in (39c).

The fact that many noun paradigms are defective yields an additional argument for the analysis shown in tableau (39). If the final schwa in for example bët[\] is indeed stabilized by the schwa in bët[\]n, which is needed independently to avoid a SON violation, then final schwas should disappear in phonologically similar nouns whose paradigms lack suffixed forms. For an illustration of this point consider the evaluation of the minimal pair MHG ruote 'rod' (NHG Rute) and MHG huote 'care' (NHG Hut), which differ w.r.t. pluralizability. This difference determines the stability of the final schwa as is shown in (40):
<table>
<thead>
<tr>
<th>(40)</th>
<th>SON</th>
<th>WEIGHT</th>
<th>LEVEL</th>
<th>#SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>ruot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ruotn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ruot</td>
<td>!</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ruot[]n</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ruot[]</td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>ruot[]n</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>huot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>huot[]</td>
<td></td>
<td></td>
<td>*!</td>
</tr>
</tbody>
</table>

This point is further illustrated by evaluating the minimal pair MHG huore 'whore' (NHG Hure) and the non-count noun MHG ruore 'dysentery' (NHG Ruhr). In this case the crucial difference is that the paradigm of huore, but not that of ruore, includes a member in which the schwa is needed to satisfy WEIGHT:
<table>
<thead>
<tr>
<th>(41)</th>
<th></th>
<th>SON</th>
<th>WEIGHT</th>
<th>LEVEL</th>
<th>*SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td>huor</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>huorn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>huor</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>huor[n]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l</td>
<td></td>
<td>huor[n]</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>huor[n]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>l</td>
<td>ruor</td>
<td></td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ruor[n]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A comparison of the paradigms of the feminine nouns in (38) shows that the paradigms of non-count nouns do not necessarily lack suffixed members. Only the paradigms of nouns which are not pluralizable and belong to the strong declension include only unsuffixed members. These two conditions hold for both MHG *huor[n]* 'care' and *ruor[n]* 'dysentery', as well as the other feminine nouns listed in (42). As the constraint ranking in (41) leads us to expect the final schwa disappeared regardless of the sonority or length of the preceding segments:³⁴

³⁴The final schwa failed to delete in abstract nouns which have a recognizable base (e.g. *Frisch[n]* 'freshness' - frisch 'fresh', *Tief[n]* 'depth' - tief 'deep', etc.). Apparently these final schwas were protected from deletion by virtue of being a derivational (rather than inflectional) suffix.
(42) MHG NHG
scham[\>] > scham Scham 'shame'
vorht[\>] > vorht Furcht 'fear'
zier[\>] > zier Zier 'ornament'
pín[\>] > pín Pein 'pain'
smâh[\>] > smâh Schmach 'disgrace'
kost[\>] > kost Kost 'food'
aht[\>] > aht Acht 'attention'
âht[\>] > âht Acht 'outlawry'
natür[\>] > natür Natur 'nature'
mær[\>] > mær Mär 'fame'
schiuh[\>] > schiuh Scheu 'repugnance'
schouw[\>] > schouw Schau 'spectacle'
witz[\>] > witz Witz35 'wisdom'

The claim that the schwa loss in the feminine non-count nouns (e.g. huôt[\]), nuor[\]) vis-à-vis the stability of the final schwa in the phonologically similar count nouns (e.g. ruōt[\], huôr[\]) is conditioned not by their semantic difference but rather by the absence of suffixed members in the respective paradigms is supported by the phonological development of the non-count nouns which belong to the weak declension. The paradigms of those nouns include no plural forms but suffixed oblique forms as is illustrated with the MHG asche 'ashes' in (43b):

(43)a. strong b. weak
   Sg. Nom huôte (>huôt) asche
   Gen   huôte (>huôt) aschen
   Dat   huôte (>huôt) aschen
   Acc   huôte (>huôt) aschen

The stability of the final schwa in asche is predicted by the constraint ranking established above as is shown in tableau (44):

35This noun is masculine in NHG.
Membership in the weak declension also accounts for the stability of the final schwa in the MHG nouns sunne 'sun' (NHG Sonne) and galle 'gall' (NHG Galle), which occur only as singular nouns. It is thus not the semantic property of pluralizability per se but rather the form of the other paradigm members which determines the stability of the final schwa. Note that reference to the notion "paradigm" is crucial to capture the generalization that the final schwa disappeared only in the subset of the unpluralizable nouns which have no suffix in the oblique cases.\textsuperscript{36}

There is only one phonological restriction on schwa loss in words whose paradigms include only suffixless members: schwas fail to delete after voiced obstruents. This restriction has been referred to as "VOICE stability effect" in the preceding section and accounts for the stability of the final schwa in the feminine non-count nouns in (45):\textsuperscript{37}

\begin{table}
\begin{tabular}{|c|c|c|c|c|}
\hline
(44) & SON & WEIGHT & LEVEL & *SCHWA \\
\hline
a. & asch & *! & & \\
 & aschn & & & \\
\hline
 & asch & & *! & \\
 & asch\[\n & & & \\
\hline
l & asch\[ & & & ** \\
 & asch\[\n & & & \\
\hline
\end{tabular}
\end{table}

\textsuperscript{36}The claim is then that schwa deletion in the nouns in (42) is conditioned not by their abstractness but rather by the fact that their paradigms lack members which violate SON or WEIGHT. This includes all nouns which lack plural forms and belong to the strong declension. It is difficult to determine which nouns are counterexamples to this generalisation because some abstract nouns like erg 'honour', minne 'love', etc. were often personified in MHG in which case they were inflected weakly. Under this condition the schwa is predicted to be stable. Also the the plural of abstract nouns was far more common in MHG than in NHG (cf. Paul 1989:199).

\textsuperscript{37}Recall that there is no VOICE stability effect after the cluster ld. The schwa loss in the non-count nouns Huld 'grace' from MHG hulde and Schuld from MHG schulde is therefore systematic.
lieb[\] Lieb[\] 'love'
genad[\] Gnad[\] 'mercy'
hans[\] Hans[\] 'Hanseatic League'

The VOICE stability effect is obscured in words which belong to paradigms which include a nasal suffix because in such words schwas are stable after any obstruent. Similarly the VOICE stability effect is obscured in historical dactyls like lêbende 'alive' because in such words schwas deleted to satisfy the constraint (σ^2)_F (e.g. lêbende > lêben[t]). The constraint ranking in (46) thus accounts for all data considered so far:

(46)  SON, WEIGHT, CODA VOICE, (σ^2)_F, LEVEL >> PRESERVE VOICE >> *SCHWA

In the following sections additional data will be presented which allow one to establish further rankings between the constraints in (46).

### 3.3 Schwa loss in masculine nouns

Consider next the loss of final schwa in masculine count nouns. Those nouns generally belong to the weak declension, which means that all other forms in their paradigms end in n (cf. (38b)). Schwa loss in nouns with a short stem vowel followed by a short liquid like MHG star([\]) 'starling' is therefore expected. In all other nouns final schwas are predicted to be stable. The nouns in (47b) illustrate the stabilizing effect of either vocalic or consonantal length. The data in (47c) show that schwa is stable after nasals and obstruents. The diacritic † means that the word is archaic.

---

38 In NHG the final schwa in such nouns is often analysed as a morpheme encoding animacy.

39 There are far more counter-examples to the LEVEL stability effect among masculine nouns than among feminine nouns which indicates that at some point gender started to play a role as well:

a) han[\] 'rooster' (NHG Hahn), swan[\] 'swan' (NHG Schwan), kütz[\] 'screech owl' (NHG Kauz), spatz[\] 'sparrow' (NHG Spatz), riff[\] 'white frost' (NHG Reif), smcrz[\] 'pain' (NHG Schmerz), mensch[\] 'human being' (NHG Mensch)

b) griff[\] 'griffin' (NHG Greif), gris[\] 'old man' (NHG Greis), blizt[\] 'lightning' (NHG Blitz), kim[\] 'sprout' (NHG Keim), kern[\] 'seed' (NHG Kern), stern[\] 'star' (NHG Stern).

For the examples in (b) the current plural forms are homophonous to the earlier forms with schwa, which indicates that "schwa loss" could be the result of reanalysis (see footnote 44).
(47a. MHG        NHG
   star[\] > star  Star   'starling'
   ber[\] > ber   Bär    'bear'
   ar[\] > ar     Aar    'eagle'
   stör[\] > stör  Stör   'sturgeon'
   ster[\] > ster  (†)Stär 'ram'

b. MHG        NHG       c. MHG        NHG
   farr[\] (†)Farre 'bull'          valk[\] Falke  'falcon'
   bull[\]⁴⁰ Bulle  'bull'          aff[\] Affe   'monkey'
   gesél[l]\] Gesélle 'house mate'    an[\] Ahne  'grandfather'
   buol[\] Buhle  'lover'          ohs[\] Ochse 'ox'

The familiar constraint ranking in tableau in (48) illustrates the analysis of final schwa loss in (47):

---

⁴⁰This noun stems from Middle Low German.
<table>
<thead>
<tr>
<th>(48)</th>
<th>SON</th>
<th>WEIGHT</th>
<th>LEVEL</th>
<th>*SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>star \nstar</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>star \nstar</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>star \nstar</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>star \nstar</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>farr \nfarr</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>farr \nfarr</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>farr \nfarr</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>farr \nfarr</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>valk \nvalkn</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>valk \nvalkn</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>valk \nvalkn</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>valk \nvalkn</td>
<td></td>
<td>!</td>
<td></td>
</tr>
</tbody>
</table>

The claim that the final schwa in (47b,c) is stabilized by leveling is supported by the systematic schwa loss in nouns whose paradigms include no members which violate SON or WEIGHT like the MHG masculine noun mēt(\ ) 'mead' (NHG Met) or kūt(\ ) 'resin' (NHG Kitt). Compare the evaluation of mēt(\ ) and of the phonologically similar count noun paf(\ ) 'godfather':
<table>
<thead>
<tr>
<th>(49)</th>
<th>SON</th>
<th>WEIGHT</th>
<th>LEVEL</th>
<th>*SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>pat</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>patn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pat[]n</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pat[]</td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>pat[]n</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mët[]</td>
<td></td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td></td>
<td>mët[]s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mëts</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In masculine nouns whose paradigms include no suffixed forms the final schwa is stable only if a voiced obstruent precedes (cf. MHG kæs[\] (NHG Käse) 'cheese').\(^{41}\)

Recall that the paradigms of weak nouns always include members with a nasal suffix. Therefore wordfinal schwas in weak nouns are predicted to be stable due to LEVEL effects unless the stem consists of a short vowel followed by a short liquid. However, there are two types of weak nouns where the final schwa disappeared even if long segments, nasals, or obstruents precede: nouns which are used as titles (cf. (50a)) and nouns which are used as swear words in MHG (cf. (50b)).\(^{42}\)

---

\(^{41}\)The loss of final schwa in MHG sïg 'victory' (NHG Sieg) is a counterexample to both LEVEL stability and the VOICE stability effect.

\(^{42}\)Löhken (1997:211) claims that schwa loss in (50a) is explained by their status as function words. There is no independent evidence that these nouns are function words. They clearly conform to the phonological wellformedness conditions which characterize phonological words (e.g. they allow for complex syllable heads and/or codas, they resist reduction, etc.).
(50) MHG | NHG
---|---
a. vrouw[\ ] > vrouw | Frau | 'female ruler'
herr[\ ] > herr | Herr | 'lord'
vüirst[\ ] > vürst | Fürst | 'ruler'
gräv[\ ] > gräv | Graf | 'count'
prinz[\ ] > prinz | Prinz | 'prince'
schenk[\ ] > schenk | Schenk | 'cupbearer'
b. geck[\ ] > geck | Geck | 'silly person'
lump[\ ] > lump | Lump | 'person dressed in rags'
narr[\ ] > narr | Narr | 'fool'
schelm[\ ] > schelm | Schelm | 'dead person; carcass'
tropf[\ ] > tropf | Tropf | 'pathetic or stupid person'
türf[\ ] > tür | Tor | 'confused person'

The nouns in (50a) and (50b) have in common that they are used in the function of address and hence occur as (suffixless) vocatives. Vocatives differ from other cases in that they are arguably not part of inflectional paradigms. Recall that paradigms consist of the inflected forms of a word whose distribution is determined solely by agreement with another element within some grammatical configuration. Confining that grammatical configuration to the clause excludes vocatives which explains why the nouns in (50) do not necessarily show LEVEL effects. Compare the evaluation of the near-minimal pair MHG farr[\ ] 'bull' and narr[\ ] 'fool' in (51):
(51)  | SON | WEIGHT | LEVEL | *SCHWA
---|---|---|---|---
a.  | farr
    | farn | *! |  |  
    | farr
    | farr\[\]n | *! |  |  
    |  |  |  |  
    | farr\[\]n |  |  |  
    | farr[\]n |  |  |  
b.  | narr[\] |  | *! |  
    |  |  |  |  
    | narr |  |  |  

It is not clear, however, why the nouns in (50) also lost the final schwa when used in cases other than the vocative.\(^{43}\) Unclear is also if the types of nouns illustrated in (50) show the VOICE stability effect. The only relevant example is the masculine swearword MHG buob[\] (NHG Bube) 'undisciplined person', which has kept the schwa. The phonological development of weak nouns which denote titles and invectives is hence consistent with the constraint ranking in (46).

### 3.4 The ranking of LEVEL w.r.t. other constraints

Recall that schwa loss in adjectives like MHG élènd[\] (NHG élèn[t]) indicates that the constraint \((\sigma^2)_F\) dominates the constraint PRESERVE VOICE. The development of the paradigm of the MHG noun gégend[\] 'area' (NHG Gégen[t]) indicates that the constraint LEVEL is dominated by \((\sigma^2)_F\) as well.

\(^{43}\)The general loss of final schwa in the words in (50) is possibly due to an identity condition which requires all nominative forms to be identical to the vocative. A similar condition is needed to account for the fact that the first person plural present tense form of verbs is always identical to the infinitive, which is not part of inflectional paradigms.
The data in (52) show not only that $(\sigma^2)_F$ dominates both LEVEL and PRESERVE VOICE but also that $(\sigma^2)_F$ is violable. Specifically, the stability of both schwas in words like *gégenden* shows that SON ranks higher than $(\sigma^2)_F$ as is shown in tableau (53).

<table>
<thead>
<tr>
<th>(53)</th>
<th>SON</th>
<th>$(\sigma^2)_F$</th>
<th>LEVEL</th>
<th>PRESERVE VOICE</th>
<th>*SCHWA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>geg[\nd[\ ]n</td>
<td>geg[\n[t</td>
<td>geg[\ndn</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>geg[\nd[\ ]n</td>
<td>geg[\n[t</td>
<td>geg[\ndn</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>geg[\nd[\ ]n</td>
<td>geg[\n[t</td>
<td>geg[\ndn</td>
<td>**!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>geg[\n[t</td>
<td>geg[\nd[\ ]n</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>***</td>
</tr>
</tbody>
</table>

The interaction between the five constraints in (53) can be determined further on the basis of the historical schwa loss in (54):

<table>
<thead>
<tr>
<th>(54)</th>
<th>MHG</th>
<th>NHG</th>
<th>MHG</th>
<th>NHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>herb[\ ]st &gt; her[p]st</td>
<td>Herbst</td>
<td>'autumn'</td>
<td>bâb[\ ]s &gt; bâ[p]s</td>
<td>Papst</td>
</tr>
<tr>
<td>houb[\ ]t &gt; hou[p]t</td>
<td>Haupt</td>
<td>'head'</td>
<td>jag[\ ]t &gt; ja[k]t</td>
<td>Jagd</td>
</tr>
</tbody>
</table>
Schwa loss in ( ) may appear to contradict the claim that PRESERVE VOICE dominates *SCHWA, which was established in section 1. However, the paradox disappears once the developments of the complete paradigms are considered. Consider the three stages in the development of the paradigm of the MHG noun herBST 'harvest, autumn' in (100):

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>her.B[]st</td>
<td>her.B[]st</td>
<td>her(p)st</td>
</tr>
<tr>
<td>her.B[].st[]s</td>
<td>her(p).st[]s</td>
<td>her(p).st[]s</td>
</tr>
<tr>
<td>her.B[].st[]</td>
<td>her(p).st[]</td>
<td>her(p).st[]</td>
</tr>
<tr>
<td>her.B[].st[]n</td>
<td>her(p).st[]n</td>
<td>her(p).st[]n</td>
</tr>
</tbody>
</table>

Schwa deletion in herB[\]st is arguably a consequence of the schwa loss in the corresponding site in the dactylic members of the paradigm. On that view the schwa in herB[\]st disappeared not because of a *SCHWA violation but because of a LEVEL violation. The initial schwa loss in the dactyls (cf. Stage 1 > Stage 2) supports the ranking $(\sigma^2)_F >> LEVEL$, PRESERVE VOICE established above. The subsequent schwa loss in the unsuffixed member of the paradigm (cf. Stage 2 > Stage 3) indicates that LEVEL dominates the constraint PRESERVE VOICE. The tableau in (56) illustrates this point:
The third paradigm in (56) is more leveled than the second one because there are only two consonants which appear in the syllable head position in some members but in coda position in others. This raises the question of what rules out the candidate shown in (57), which incurs no LEVEL violations:

(57)  
her[p].st[ ]
her[p].st[ ]s
her[p].st[ ]
her[p].st[ ]n

To eliminate the candidate in (57), which satisfies all phonological and morphological wellformedness constraints, it is necessary to refer to the input form. The obvious flaw of that candidate is that the final schwa in one of its members does not appear in the input form. The fact that there are countless words in which the final schwa is stabilized by the constraint LEVEL but
there is not a single word in which a schwa was added to satisfy LEVEL indicates that LEVEL is dominated by a constraint which prohibits schwa intrusion.44

3.5 Schwa loss in neuter nouns

Unlike the count nouns considered so far neuter count nouns lose their final schwa even after consonants other than liquids (cf. 58a) and after long segments (cf. 58b):

(58)a.  MHG  |  NHG  |  MHG  |  NHG

(i): 
loc > lock[\i]  Locke 'curl'
grät > grê[\i]  Gräte 'fish bone'

vurch > vurch[\i]  Furch'e 'furrow'
trän > trê[\i]  Trâne 'tear'

wâc > wâg[\i]  Woge 'wave'
sûl > siul[\i]  Säule 'column'

However, there is evidence that the innovative schwa in the nouns in (i) is due not to schwa intrusion but to a reanalysis of the original plural form as is shown in (ii) (cf. Paul 1989).

(ii) original paradigm: Reanalysis  new paradigm:
(der) loc\|SG (die) lock[\i]\|SG  (die) lock[\i]\|SG  FEM
(die) lock[\i]\|PL  (die) lock[\i]\|PL  (die) lock[\i]\|PL

The phonological evidence for reanalysis is that the forms which show "schwa intrusion" are always homophonous to the nominative/accusative plural forms of the original paradigm. Specifically, if the plural in the original paradigm showed umlaut (cf. grê 'fish bones', trêne tears', and siule 'columns'), the form with "schwa intrusion" also has umlaut.

Plural-singular reanalysis implies a confusion on the part of the learner which presupposes both phonological and semantic factors. Phonologically the conditions for reanalysis were met because plural forms ending in schwa conform to the canonical shape of feminine singular nouns and the definite plural article was homophonous to the feminine definite singular accusative article. As a result reanalysis always correlates with a change to feminine gender. The semantic conditions for reanalysis were met because the content of the expressions in (i) does not generally allow learners to decide whether a single object or a group of objects are referred to. This is because objects like curls, furrows, waves, fish bones, tears, etc. typically occur in a group rather than as individuals. Plural nouns which have been reanalysed as singular nouns accordingly often refer to objects like trees (cf. (iiia)), insects (cf. (iiib)), small fruits or vegetables (cf. (iiic)), or non-unique body parts (cf. (iiid)).
The fact that the patterns of schwa deletion in neuter count nouns differ from those in other count nouns is perhaps conditioned by the structure of the strong neuter paradigm illustrated in (59a), to which almost all neuter nouns which ended in schwa in MHG belong. That neuter paradigm differs from the paradigms considered so far in that it lacks a uniform plural marker. Compare the paradigm of the neuter noun stücke 'piece' with the paradigms of the non-neuter nouns brücke 'bridge' and mücke 'midge'. The paradigm of the weak noun mücke also represents almost all masculine nouns which end in schwa.

(59a. strong (neuter) b. strong (feminine) weak (feminine, masculine)

Sg. Nom stücke (>stück) brücke mücke
Gen stückes (>stücks) brücke mücken
Dat stücke (>stück) brücke mücken
Acc stücke (>stück) brücke mücken
Pl. Nom stücke brücken mücken
Gen stücke brücken mücken
Dat stücken brücken mücken
Acc stücke brücken mücken

The fact that schwa disappeared only in neuter singular nouns could be explained by ordering the morphological constraint "PL_SG" defined in (60) higher than LEVEL:

45The four neuter nouns which are inflected weakly contradict the analysis here in that they show the VOICE stability effect:

(i.a. MHG NHG (b. MHG NHG
hérz[|] > hérz Herz 'heart' ough[|] Auge 'eye'
or[|] > or Ohr 'ear'  wang[|] Wange 'cheek'

The fact that the neuter nouns in (ia) fail to show the LEVEL stability effect is perhaps related to the fact that the paradigms of neuter weak nouns differ from other weak paradigms in that the accusative singular form has no suffix.
(60) PL\_SG

Plural forms must be uniformly marked w.r.t. to the corresponding singular forms.

As a result of schwa loss in the singular forms in (59a) schwa emerges as a plural marker in the plural forms thereby satisfying "PL\_SG". By contrast, the constraint PL\_SG is satisfied by the suffix -n in the paradigms of brücke and mücke with the result that schwa loss is inhibited by the constraint LEVEL. The violations of the constraint PL\_SG which result from the homophony of some singular forms to the corresponding plural forms in the paradigm of mücke are unavoidable since all schwas are stabilized by the higher-ranking constraint SON. The deletion patterns in the paradigms represented in (59) can thus be described without referring to gender.

The fact that wordfinal schwas disappeared in all dactylic forms including the plural forms indicates that the constraint (σ²)ₚ dominates PL\_SG. For illustration consider the schwa loss in the paradigms of the masculine noun MHG jegere 'hunter' and the neuter noun me__ere 'knife' in (61):\(^{46}\)

\[
\begin{array}{ccc}
\text{Sg. Nom} & \text{jéger[\text{\_}]} & \text{me__er[\text{\_}]} \\
\text{Gen} & \text{jéger[\text{\_}]}s & \text{me__er[\text{\_}]}s \\
\text{Dat} & \text{jéger[\text{\_}]} & \text{me__er[\text{\_}]} \\
\text{Acc} & \text{jéger[\text{\_}]} & \text{me__er[\text{\_}]} \\
\hline
\text{Pl. Nom} & \text{jéger[\text{\_}]} & \text{me__er[\text{\_}]} \\
\text{Gen} & \text{jéger[\text{\_}]} & \text{me__er[\text{\_}]} \\
\text{Dat} & \text{jéger[\text{\_}]}n & \text{me__er[\text{\_}]}n \\
\text{Acc} & \text{jéger[\text{\_}]} & \text{me__er[\text{\_}]} \\
\end{array}
\]

\(^{46}\)The phonological development of the paradigm of the neuter nouns zügchnitt (NHG Zeugnis) 'testimonial' appears to contradict the claim that the constraint PL\_SG is dominated by (σ²)ₚ:

\[
\begin{array}{ccc}
\text{Sg. Nom} & \text{zügchnitt[\text{\_}]} & \text{zügchnitt[\text{\_}]} \\
\text{Gen} & \text{zügchnitt[\text{\_}]}s & \text{zügchnitt[\text{\_}]}s \\
\text{Dat} & \text{zügchnitt[\text{\_}]} & \text{zügchnitt[\text{\_}]} \\
\text{Acc} & \text{zügchnitt[\text{\_}]} & \text{zügchnitt[\text{\_}]} \\
\hline
\text{Pl. Nom} & \text{zügchnitt[\text{\_}]} & \text{zügchnitt[\text{\_}]} \\
\text{Gen} & \text{zügchnitt[\text{\_}]} & \text{zügchnitt[\text{\_}]} \\
\text{Dat} & \text{zügchnitt[\text{\_}]}n & \text{zügchnitt[\text{\_}]}n \\
\text{Acc} & \text{zügchnitt[\text{\_}]} & \text{zügchnitt[\text{\_}]} \\
\end{array}
\]

However, the noun zügchnitt includes a consonantinitial suffix and thus has the prosodic structure (züg)nchnitt. Assuming the validity of the prosodic hierarchy the noun is consequently not a dactyl and the constraint (σ²)ₚ plays no role in the loss of the schwa. Instead the schwa in the singular forms disappeared to satisfy the constraint PL\_SG, which is inherently insensitive to foot structure. The same argument applies to the parallel development of the paradigms of the neuter nouns ântlitz (NHG Antlitz) 'face' and kléine (NHG Kleine) 'jewel', which are compounds and hence are not dactylic either.
The claim that PL\_SG dominates LEVEL implies that it dominates the constraint PRESERVE VOICE as well (cf. the ranking in tableau (56)). As a result it is predicted that schwa deletes in neuter count nouns after voiced obstruents. Unfortunately there are almost no data which allow one to decide whether or not this prediction is correct. The schwa loss in the neuter count nouns *hemde > hemt* (NHG Hemd) 'shirt' and *bilde > bilt* (NHG Bild) 'picture' is consistent with the ranking PL\_SG >> PRESERVE VOICE but does not necessarily support it.48

4. Conclusion

Within rule-based approaches the historical development of schwa is generally described in terms of a context-sensitive deletion rule as is shown in (62) (cf. Wurzel 1970, Strauss 1982):

\[(62) \ \ \ \mathcal{O} \ \mathcal{O} / X-Y\]

In this paper I have proposed an alternative description which is based on a general constraint against schwas shown in (63a). Contextual restrictions on schwa deletion are described by constraints which dominate *SCHWA as is shown in (63b). The claim is then that schwa disappears unless it is needed to satisfy higher-ranking constraints.

\[(63)a. \ *SCHWA \]
\[b. \ \ \ \text{CONSTRAINT}_i >> \text{CONSTRAINT}_j >> *SCHWA\]

The two approaches are compared by applying them to wordfinal schwa deletion in MHG. I argue that instead of positing two highly idiosyncratic deletion rules the data can be described by the constraint ranking in (64):

\[\]

47I assume that the collective neuter nouns discussed in section 1 and the the neuter nouns *erbe* 'inheritance' and *ende* 'end' lacked plural forms.

48Recall that the VOICE stability effect always fails after the cluster \(\text{kl}\). The noun *hemde* used to be dactylic which means that the loss of final schwa could also have served to satisfy the constraint \((s^2)f\).
(64) SON

WEIGHT >> (σ²)ₚ >> PL_SG >> LEVEL >> PRESERVE VOICE >> *SCHWA CODA VOICE

The basic generalisation expressed in (64) is that schwa deletes unless one of the three high-ranking constraints on syllabic wellformedness is violated. In inflected words this generalisation can be obscured by LEVEL effects. That is, in inflected words the stability of schwas depends on the question of which is the most sonorous and heaviest suffix within the paradigm. For example, since the most sonorous suffix in verbal paradigms is a nasal and the heaviest suffix weighs one mora one can predict that schwa is stable unless it is preceded by a short liquid which follows a short vowel. Both the LEVEL stability effect and the VOICE stability effect fail in dactyls because of a higher ranking constraint which limits the size of feet.

In contrast to rule-based approaches the description in (64) makes no reference to specific segment classes such as liquids, obstruents, etc. This is desirable because it seems intuitively implausible that the loss of word-final vowels is determined directly by the class membership of the preceding consonant. The description in (64) also dispenses with reference to morphological or semantic word categories. Finally, the ranking in (64) reveals the type of conditions which determine the development of wordfinal schwas as is shown in (65). ⁴⁹

(65) Constraints on the wellformedness of syllable structure >> Constraints on the wellformedness of metrical structure >> Constraints on the wellformedness of paradigm structure

Unlike the deletion rules mentioned above the constraint-based description in (64) offers explanations for the development of schwa in MHG. These explanations rely crucially on the assumption that inflected words are represented as members of complete paradigms rather than as individual words (cf. Vennemann 1974). The constraint *SCHWA should perhaps be replaced by a more general constraint "*VOWEL", where the stability of vowels other than schwa follow from higher-ranking constraints like PRESERVE PLACE.

⁴⁹ The rankings of PRESERVE constraints are feature-specific and are therefore not mentioned in table (65).
References


Da, Desu, Desho: Some Asymmetries in Japanese Copula Constructions

Tatsuya Suzuki
tacchan@ic.nanzan-u.ac.jp

1. Introduction

This paper discusses some hitherto hardly discussed syntactic asymmetries with respect to Japanese copula constructions. The copulas I am going to discuss in this paper are da, desu, and desho, which seem to be morphologically interrelated with each other. They are exemplified in (1):\(^1\)

\(1\) a. Taro-wa gakusei-da.
   Taro-TOP student-DA
   'Taro is a student.'

b. Taro-wa gakusei-des-u.
   Taro-TOP student-DESU-Pres.
   'Taro is a student.'

c. Taro-wa gakusei desho-u.
   Taro-TOP student DESHO-Pres
   '(I guess) Taro is a student.'

As can be seen from the translations, these three verbs roughly correspond to be in English, and thus I will call the constructions that contain them copula constructions.

The following discussion will be limited to a purely syntactic one, but presumably it would be necessary to briefly mention some differences in semantic interpretation among the

---

\(^1\) I am grateful to Yasuaki Abe, Takako Aikawa, Joe Emonds, Fritz Newmeyer, Hiroto Hoshi, Toru Maruyama, Yuki Matsuda, Masahiro Morikawa, Kunio Nishiyama, Toshiyuki Oghara, Kaoru Ota, and Karen Zagona for their comments and criticism on earlier versions of this paper. This is based on a paper I presented at the University of Washington on October 31, 1997. I received a lot of useful comments on that occasion. I thank the audience for their helpful comments and criticism. However, I regret that I could not incorporate all the insights to the present version of the paper. All errors are of course my own.

This work is partly supported by a Nanzan University 1998 Paché Research Subsidy I-A.

\(^\dagger\) I will use the following abbreviations throughout this paper:
TOP=topic, COMP=complementizer, Pres=present tense, NOM=nominative, ACC=accusative, GEN=genitive, DAT=dative, Q=question, NEG=negative, HON=honorific.
three copulas here. I think it is necessary because those semantic differences are so salient that the researchers have often failed to notice their significant syntactic differences, and thus they have missed interesting generalizations on these copula verbs. The thesis of autonomous syntax in generative grammar should dispel such presumptions, and will lead to the revelation of significant formal properties with respect to these copulas.

The meaning of desho is somewhat different from that of da and desu. While da and desu both simply affirm the proposition that precedes them, as in English copula constructions, desho adds some epistemic meaning. Thus it might be appropriate, from a semantic point of view, to consider that desho consists of two elements, one a copula des- and the other a suffix that carries the epistemic meaning. This would make desho an epistemic auxiliary verb. I will return to this point at the end of this paper.

The difference between da and desu is much more subtle. If they are translated into English, they may simply correspond to be, as can be seen in (1a) and (1b) above. But they can be differentiated in terms of the degree of politeness of the expressions. Desu has been considered to be a polite form of da, which simply affirms the statement.

I am not going to discuss any such semantic aspect as the above in what follows. This paper is only concerned with syntactic properties of the copula constructions in Japanese. The proposal that I will make is that such syntactic features as [+N] and [+tensed] play crucial roles in the desu and da constructions with respect to certain co-occurrence restrictions. But it would be impossible to make such a claim if the theory were based on what has been traditionally assumed—as the next section will show. In what follows, therefore, I will first provide interesting evidence that has been left unnoticed in explanations of Japanese grammar, on the basis of which I am able to make the above-mentioned generalization.

Another claim made in this paper is that the Principle of Full Interpretation (Chomsky 1986) provides a principled explanation for the asymmetry that differentiates desho from the other two copulas.

2.1. Syntactic Asymmetries

First, consider the examples in (2), (3), and (4):
(2) Da
a. Taro-wa gagusei-da. <Noun>
Taro-TOP student-DA
'Taro is a student.'
b. *Taro-wa omoshiro-i-da. <Adjective>
Taro-TOP funny-Pres-DA
'Taro is funny.'
c. Taro-wa binboo-da. <Predicate Nominal>
Taro-TOP poor-DA
'Taro is poor.'
d. *Taro-wa sake-o nom-u-da. <Verb>
Taro-TOP sake-ACC drink-Pres-DA
'Taro drinks sake.'
e. Kononimotsu-wa Tokyo-kara-da. <Postposition>
this package-TOP Tokyo-from-DA
'This package is from Tokyo.'

(3) Desu
a. Taro-wa gagusei-des-u. <Noun>
Taro-TOP student-DESU-Pres
'Taro is a student.'
b. Taro-wa omoshiro-i-des-u. <Adjective>
Taro-TOP funny-Pres-DESU-Pres
'Taro is funny.'
c. Taro-wa binboo-des-u. <Predicate Nominal>
Taro-TOP poor-DESU-Pres
'Taro is poor.'
d. *Taro-wa sake-o nom-u-des-u. <Verb>
Taro-TOP sake-ACC drink-Pres-DESU-Pres
'Taro drinks sake.'
e. Kononimotsu-wa Tokyo-kara-des-u. <Postposition>
this package-TOP Tokyo-from-DESU-Pres
'This package is from Tokyo.'

(4) Desho

a. Taro-wa gakusei-desho-u. <Noun>
   Taro-TOP student-DESHO-Pres
   '(I guess) Taro is a student.'

b. Taro-wa omoshiro-i-desho-u. <Adjective>
   Taro-TOP funny-Pres-DESHO-Pres
   '(I guess) Taro is funny.'

c. Taro-wa binboo-desho-u. <Predicate Nominal>
   Taro-TOP poor-DESHO-Pres
   '(I guess) Taro is poor.'

d. Taro-wa sake-o nom-u-desho-u. <Verb>
   Taro-TOP sake-ACC drink-Pres-DESHO-Pres
   '(I guess) Taro drinks/will drink sake.'

e. Kononimotsu-wa Tokyo-kara-desho-u. <Postposition>
   this package-TOP Tokyo-from-DESHO-Pres
   '(I guess) This package is from Tokyo.'

As is evident from these examples, there seem to be some co-occurrence restrictions between the copulas and the elements that precede them: *da* is acceptable only when it occurs with a noun, a predicate nominal, and a postposition, while *desu*, on the other hand, is unacceptable only when it occurs with a verb. In the case of *desho*, nouns, adjectives, predicate nominals, verbs, and postpositions may all go with it. This paradigm seems enough to show that the assumption that *desu* is merely a polite form of *da* is wrong.

There is another contrastive difference among these copulas. Only *da* is allowed to occur with the question morpheme *-ka* in embedded clauses. Observe the contrasts in (5):

   what-NOM what-DA-Q understand-Pres-NEG
   'I don’t know what’s going on.'

   what-NOM what-DESU-Pres-Q understand-Pres-NEG
'I don't know what's going on.'

    what-NOM what-DESHO-Pres-Q understand-Pres-NEG
    'I don't know what's going on.'

It is not the case that desu and desho can occur only in root clauses, as shown in (6). The correct generalization is that they are simply incompatible with indirect questions.

    this-NOM important-point-DESU-Pres-because carefully listen please
    'Because this is the important point, please listen carefully.'

    b.  Koko-made aruite-kur-u-no-wa taihen-desho-u-kara,
        here-to walk-come-Pres-COMP-TOP hard-DESHO-Pres-because
        kuruma-de o-mukae-ni ikimasu.
        car-by HON-meet-to will go
        'Because (I guess) it's hard for you to come here on foot, I'll go to meet you by car.'

It is interesting to notice that the compatibility of the copulas and the question morpheme -ka will be reversed in root clauses, as exemplified in (7):

(7)  a.  *Kore-wa nan-da-ka?
    this-TOP what-DA-Q
    'What is this?'

    b.  Kore-wa nan-des-u-ka?
        this-TOP what-DESU-Pres-Q
        'What is this?'

    c.  Kore-wa nan-desho-u-ka?
        this-TOP what-DESHO-Pres-Q
        'What is this?'

Here, both desu and desho can go with the question morpheme -ka, whereas da can not. Such differences of syntactic distributions strongly suggest that these three copula verbs are not
stylistic variants of a single lexical item. The following table summarizes what we have observed so far.

(8) Co-occurrence

<table>
<thead>
<tr>
<th></th>
<th>Noun</th>
<th>Adjective</th>
<th>Predicate Nominal</th>
<th>Verb</th>
<th>Postposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>da</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
</tr>
<tr>
<td>desu</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
</tr>
<tr>
<td>desho</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
</tbody>
</table>

(9)

<table>
<thead>
<tr>
<th></th>
<th>embedded Q</th>
<th>Root Q</th>
<th>Embedded Declarative</th>
</tr>
</thead>
<tbody>
<tr>
<td>da</td>
<td>OK</td>
<td>NO</td>
<td>OK(^2)</td>
</tr>
<tr>
<td>desu</td>
<td>NO</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>desho</td>
<td>NO</td>
<td>OK</td>
<td>OK</td>
</tr>
</tbody>
</table>

It is beyond the scope of this paper to provide explanations for all of these contrasts. What I would like to focus on in the rest of this paper is some syntactic properties of *desu*, *da*, and *desho* with respect to their co-occurrence restrictions in regard to the elements that they follow. I will argue for two claims. First, I propose to show that syntactic features play crucial roles in determining the paradigm in (8), and then I suggest that the Principle of Full Interpretation will derive the contrasts between *desho* and the other two copulas.

2.2. *Desu*: Further Complication

\(^2\) *Da* may be used in embedded declaratives as in (i):

(i) Taro-wa Yuka-ga Mika-no imooto-da-to omot-ta.

Taro-TOP Yuka-NOM Mika-GEN sister-DA-COMP think-Past

'Taro thought that Yuka was Mika's sister.'
The previous section has shown that _desu_ cannot follow verbs. However, this is far from a satisfactory generalization, for if the verb that precedes the copula is non-tensed, the sentence becomes readily acceptable. Take an honorific construction for example:

(10) Tanaka-kyooju-wa ima hon-o o-kaki-des-u.

Tanaka-professor-TOP now book-ACC HON-write-DESU-Pres

‘Prof. Tanaka is writing a book now.’

Note that the copula _desu_ may also follow a verb if the complementizer _no_ intervenes between the verb and the copula, as in (11b):


I-TOP every-morning 1 hour jogging-ACC do-Pres-DESU-Pres

‘I jog for one hour every morning.’

b. Boku-wa mai-asa ichijikan jogging-o

I-TOP every-morning 1 hour jogging-ACC

sur-u-no-des-u.

do-Pres-COMP-DESU-Pres

‘I jog for one hour every morning.’

The sentence is also acceptable when _dake_ 'only' intervenes between a verb and _desu_, as in (12b):


I-TOP yesterday cereal-ACC eat-Past DESU-Pres

‘I ate cereal yesterday.’


I-TOP yesterday cereal-ACC eat-Past-only DESU-Pres

‘I only ate cereal yesterday.’

The acceptability of the honorific sentence (10) may suggest that tensedness/finiteness is the key to the mystery. But examples (11) and (12) rather suggest that direct contact of the verb and the copula may have some destructive force. In the next section, I show that both these
possible explanations are wide of the mark, and that having a syntactic feature [+N] makes it possible for a verb to co-occur with *desu*.

3. Solution

3.1. *Dake

I noted in the previous section that putting a certain element between a verb and *desu* somehow saves the V+*desu* sentences. *Dake* is one of them, and it in fact becomes a good hint to solve the mystery of the peculiar co-occurrence restrictions. Consider (13):

(13)  suki-na-dake totte-kudasai.
    like-NA-only take-please
    'Please take as much as you want.'

*Suki*, which is translated here as 'like', is a predicate nominal in Japanese, and it can co-occur with *dake* 'only' as in (13). But as the translation indicates, it appears that the syntactic structure is not one in which *dake* 'only' modifies *suki-na*, but, rather, one in which *suki-na* modifies *dake*. And what is important here is the fact that *suki* takes the -*na* ending, which is indicated as NA in (13), in modifying *dake*. This -*na* ending appears when predicate nominals modify nouns. Consider the paradigm (14) to (16):

(14)  Predicate Nominal + Noun
    a. odayaka-na umi   b. *odayaka-no umi
       calm-NA sea       calm-GEN sea
       'calm sea'
c.  *odayaka-î umi
    calm-Pres sea

(15)  Adjective + N
    a. utsukushi-î hito   b. *utsukushi-na hito
    pretty-Pres woman    pretty-NA woman

I thank Yasuaki Abe for bringing my attention to this.
'pretty woman'

(c. *utsukushi-no hito
pretty-GEN woman

(16) Noun + N

a. kimi-no hon       b. *kimi-na hon
you-GEN book        you-NA book
          'your book'

c. *kimi-i hon
you-Pres book

The results in (14) to (16) are summarized in (17):

(17) X + Noun

<table>
<thead>
<tr>
<th>X</th>
<th>ending</th>
<th>na</th>
<th>no</th>
<th>i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicate Nominal</td>
<td></td>
<td>OK</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Adjective</td>
<td></td>
<td>*</td>
<td>*</td>
<td>OK</td>
</tr>
<tr>
<td>Noun</td>
<td></td>
<td>*</td>
<td>OK</td>
<td>*</td>
</tr>
</tbody>
</table>

This result leads us to the conclusion that *dake* is a noun despite the fact that it is usually considered to be an adverb in a standard Japanese grammar. In that case, the minimal pair (12), repeated here as (18), suggests that a nominal element somehow serves as a shock absorber of the destructive force of the sequence of a verb + *desu*.

I-TOP    yesterday    cereal-ACC    eat-Past    DESU-Pres
          'I ate cereal yesterday.'

b. Boku-wa kinoo cereal-o tabe-ta-*dake* des-u.
I-TOP    yesterday    cereal-ACC    eat-Past-only DESU-Pres
          'I only ate cereal yesterday.'
Given this, let us hypothesize that there is a restriction like (19) on the elements that directly precede the copula desu.

(19) Desu may attach to a [+N] element only.

In the following sections, let us examine if hypothesis (19) is well-founded and plausible.

3.2. Honorific Construction

In section 2.2, I noted that desu may directly follow a verb if the verb takes the honorific form. I repeat the example here as (20):

(20) Tanaka-kyooju-wa ima hon-o o-kaki-des-u.
Tanaka-professor-TOP now book-ACC HON-write-DESU-Pres
‘Prof. Tanaka is writing a book now.’

Notice here that the honorific form of a verb takes an i-ending. In Suzuki (1989) I argued that this i-ending (sometimes e-ending, depending on the type of verb) marks the gerundive characteristics of the verb. For example, if a verb takes the i-ending, it may no longer be followed by so 'be likely' or 'look' (ibid. 377), which otherwise follows any [+V] category.

(21) a. Verb + so
tabe-so 'be likely to eat' kaki-so 'be likely to write'
b. Adjective + so
oishi-so 'look tasty' waka-so 'look young'
c. Predicate Nominal + so
shinsetsu-so 'look kind' ijiwaru-so 'look wicked'
d. *Noun + so
*kodomo-so 'look childish' *sensei-so 'look like a teacher'
e. Verb in honorific + so
*o-tabe-so 'be likely to eat' (Honorific)
*o-kaki-so 'be likely to write' (Honorific)
The nominal or [+N] characteristics of the verb in the honorific form are evidenced by the fact that the honorific prefix o- may only be attached to [+N] categories (ibid. 381ff).

(22) a. Noun

<table>
<thead>
<tr>
<th>Basic Form</th>
<th>Honorific Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>tegami 'letter'</td>
<td>o-tegami</td>
</tr>
</tbody>
</table>

Kono o-tegami-wa Tanaka-kyooju-kara des-u.
this HON-letter-TOP Tanaka-professor-from DESU-Pres
'This letter is from Prof. Tanaka.'

b. Adjective

<table>
<thead>
<tr>
<th>Basic Form</th>
<th>Honorific Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>utsukushii 'pretty'</td>
<td>o-utsukushii</td>
</tr>
</tbody>
</table>

Anata-no-ojoosama-wa totemo o-utsukushi-i-desu.
you-GEN-daughter-TOP very HON-pretty-Pres-DESU-Pres
'Your daughter is very pretty.'

c. Predicate Nominal

<table>
<thead>
<tr>
<th>Basic Form</th>
<th>Honorific Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>shizuka 'quiet'</td>
<td>o-shizuka</td>
</tr>
</tbody>
</table>

Minasan, o-shizuka-ni negaimas-u.
everyone HON-quiet wish-Pres
'Everyone, please be quiet.'

d. Verb without honorific ending

<table>
<thead>
<tr>
<th>Basic Form</th>
<th>Honorific Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>kak-u 'write'</td>
<td>*o-kak-u</td>
</tr>
<tr>
<td>hanas-u 'speak'</td>
<td>*o-hanas-u</td>
</tr>
</tbody>
</table>

*Kyoo-wa nani-o o-hanas-u-des-u-ka?
today-TOP what-ACC HON-speak-Pres-DESU-Pres-Q
'What will you talk about today?'
e. Verb in honorific ending

<table>
<thead>
<tr>
<th>Basic Form</th>
<th>Honorific Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>kak-u 'write'</td>
<td>o-kak-i</td>
</tr>
<tr>
<td>hanas-u 'speak'</td>
<td>o-hanash-i</td>
</tr>
</tbody>
</table>

Kyoo-wanani-o o-hanash-i-des-u-ka?
today-TOP what-ACC HON-speak-i-DESU-Pres-Q

'What are you talking about today?'

This independently motivated [+N] property of the honorific construction further supports hypothesis (19).

3.3. Nominalizer No

Let us recall that the desu sentence is also acceptable when no intervenes between a verb and desu. I repeat (11) as (23) here:

I-TOP every-morning 1-hour jogging-ACC do-Pres-DESU-Pres

'I jog for one hour every morning.'

b. Boku-wa mai-asu ichijikan jogging-o  
I-TOP every-morning 1-hour jogging-ACC  
sur-u no-desu.  
do-Pres-COMP-DESU-Pres

'I jog for one hour every morning.'

I have identified the no as a complementizer so far. But it is time to examine the assumption carefully, because if we are on the right track, the no should also carry a [+N] feature.

As a matter of fact, there seem to be several kinds of no in Japanese, as Murasugi (1991) argued (cf. Hoshi 1995). One of them is what has been called a nominalizer no. It nominalizes sentences into NP, as exemplified in (24):
(24) a. Taro-ga shuppatsu-sur-u.
    Taro-NOM leave-do-Pres
    'Taro leaves.'

    Hanako-TOP Taro-NOM leave-do-Pres-no-ACC see-Past
    'Hanako saw Taro leave.'

    Hanako-TOP Taro-NOM leave-do-Pres-no-∅ see-Past
    'Hanako saw Taro leave.'

The contrast between (24b) and (24c) shows that the constituent shuppatsu-sur-u-no needs Case. Thus sentence (24a) has been "nominalized" in (24b) and (24c). Then it would be logical to assume that no somehow adds the nominal character to the sentence. Assuming that the no is the head of the constituent, with Japanese being a head-final language, we may conclude that the no carries a [+N] feature.

This conclusion is further supported by the fact that predicate nominals take the -na ending when they modify no, as shown in (25):

(25) Hontoo-ni Yumi-ga suki-na-no-(des-u-ka)?
    really Yumi-NOM like-NA-NO-(DESU-Pres-Q)
    'Do you really like Yumi?'

As I mentioned in section 3.1, the -na ending appears only when predicate nominals modify nouns.

Given such behavior, then, there is no mystery if desu attaches to the no in (23). Desu attaches to [+N] categories. This is another supporting evidence for hypothesis (19).

3.4. Postposition
One may notice that (19) faces a serious challenge when we examine the table (8) from the point of view of (19). In (8) we saw that *desu may attach to a postposition, and postpositions are known to be a [-N, -V] category in X-bar theoretic terms (cf. Jackendoff 1977).

However, it is not obvious that PPs in Japanese are maximal projections of a [-N, -V] category. Consider (26) and (27):

Tokyo-from-GEN package
' a package from Tokyo'

(27) a. a package from Tokyo b. *a package of from Tokyo
c. *from Tokyo's package

What is intriguing is the fact that a genitive morpheme *mo must be used in Japanese when the PP modifies a noun as in (26). English contrasts with Japanese in this respect, as shown in (27). Using a genitive Case, whether in the form of of or 's, is not permissible in English.

Furthermore, as we saw in section 3.1 (cf. (17)), *mo appears only when a noun (presumably DP to be more precise) modifies a noun. This means that the alleged PP Tokyo-kara in (26) is in fact a DP, or at least carries some kind of nominal feature. Therefore, it is not contradictory at all for *desu to attach to a PP (superficially) in Japanese.

3.5. Hoshii, Tai, Rashii

Let us discuss other cases in which *desu attaches to verbal elements. Consider examples in (28), (29), and (30):

(28) a. Taro-ni-wa zettai kete-hoshi-i.
Taro-DAT-TOP by all means come-want-Pres
'I want Taro to come by all means.'
b. Taro-ni-wa zettai kite-hoshi-i des-u.

Taro-DAT-TOP by all means come-want-Pres DESU-Pres

'I want Taro to come by all means.'

(29) a. Mika-ni-wa zettai ai-ta-i.

Mika-DAT-TOP by all means meet-want-Pres

'I want to meet Mika by all means.'

b. Mika-ni-wa zettai ai-ta-i des-u.

Mika-DAT-TOP by all means meet-want-Pres DESU-Pres

'I want to meet Mika by all means.'

(30) a. Yuka-wa ashita kuru-rashi-i.

Yuka-TOP tomorrow come-seem-Pres

'Yuka seems to be coming tomorrow.'

b. Yuka-wa ashita kuru-rashi-i des-u.

Yuka-TOP tomorrow come-seem-Pres DESU-Pres

'Yuka seems to be coming tomorrow.'

Although *hoshii*, *tai*, and *rashii* are all translated into English as verbs, they are adjectives in Japanese. Their tense inflections are those of adjectives, as shown in (31), (32), and (33):

(31) a. kite-hoshi-i

come-want-Pres

'want someone to come'

b. kite-hoshi-katta

come-want-Past

'wanted someone to come'

(32) a. tabe-ta-i

eat-want-Pres

'want to eat'

b. tabe-ta-katta

eat-want-Past

'wanted to eat'

(33) a. kur-u-rashi-i

come-Pres-seem-Pres

'seem to be coming'

b. kur-u-rashi-katta

come-Pres-seem-Past

'seemed would come'

*According to Nishiyama (1997), Sells (1996) discusses the “elsewhere” property of no generation. I do not follow him here, however. I assume Japanese PPs carry some nominal feature, as I pointed out in the text.*
On the basis of these observations, it seems fair to conclude that these three verbs are in fact adjectives. And since the adjective is a [+N] category, it may be directly followed by *desu*.

Incidentally, a negative *nai* also shows the adjective inflection. It would then seem reasonable to predict that *desu* may directly attach to the negative, too. This prediction is borne out. Observe (34) and (35):

(34) a. shira-na-i
   know-NEG-Pres
   'don't know'

   b. shira-na-katta
   know-NEG-Past
   'didn't know'

   I-TOP that-case-about-TOP nothing know-NEG-Pres-DESU-Pres
   'I know nothing about that case.'

   I-TOP that-case-about-TOP nothing know-NEG-Past-DESU-Pres
   'I knew nothing about that case.'

4. Complex Predicate Formation and the Principle of Full Interpretation

4.1. *Da*

Let us turn our attention to another copula, *da*. First consider the following paradigm:

(36) a. Yuka-wa i-i pianist-da. <Noun>
   Yuka-TOP good-Pres pianist-DA
   'Yuka is a good pianist.'

   b. *Yuka-wa omoshiro-i-da. <Adjective>
   Yuka-TOP funny-Pres-DA
   'Yuka is funny.'

   c. Yuka-wa totemo kirei-da. <Predicate Nominal>
   Yuka-TOP very pretty-DA
   'Yuka is very pretty.'
d. *Yuka-wa ashita kur-u-da. <Verb>
   Yuka-TOP tomorrow come-Pres-DA
   'Yuka will come tomorrow.'

e. Konotegami-wa Yuka-kara-da. <Postposition>
   this letter-TOP Yuka-from-DA
   'This letter is from Yuka.'

The above paradigm is almost the same as that of desu. However, it is important to notice that da, unlike desu, is incompatible with adjectives. Apparently, hypothesis (19) is not sufficient to describe this paradigm.

I assume that predicate nominals and adjectives are both [+N, +V] categories in Japanese. But they differ from each other in that only adjectives show tense inflections. Therefore it seems plausible to assume that adjectives and predicate nominals have the following feature specifications:

(37) a. Adjective: [+N, +V, +tensed]
   b. Predicate Nominal: [+N, +V]

Since verbs also show tense inflections, the plausible descriptive hypothesis would thus be (38):

(38) Da may not attach to [+tensed] categories.

In the next section, let us discuss (38) and (19) in more detail.

4.2. Complex Predicates

I have given two hypotheses, (19) and (38), as co-occurrence restrictions with respect to desu and da. However, they were not so precise as they should be, because the copulas in question in fact have hierarchical structures, as schematically shown below, when they form complex predicates with appropriate elements:
(39)  

\( a. \quad \text{V} \quad \text{N} \quad \text{V} \quad \text{[+N, -V]} \quad \{ \text{desu, da} \} \)

\( b. \quad \text{V} \quad \text{T} \quad \text{V} \quad \text{Adj} \quad \text{[+N, +V]} \quad \{ \text{desu, *da} \} \)

\( <\text{Noun}> \quad <\text{Adjective}> \)

c.  

\( \text{V} \quad \text{PN} \quad \text{V} \quad \text{[+N, +V]} \quad \{ \text{desu, da} \} \)

\( d. \quad \text{V} \quad \text{T} \quad \text{V} \quad \text{T} \quad \text{[+N, +V]} \quad \{ \text{desu, *da} \} \)

\( <\text{Predicate Nominal}> \quad <\text{Verb}> \)

e.  

\( \text{V} \quad \text{P} \quad \text{V} \quad \text{[+N(?), -V]} \quad \{ \text{desu, da} \} \)

\( <\text{Postposition}> \)

Assuming that the [+N] feature percolates up to the higher node T from its original location in (39b) and (39d), we can now formalize the relevant co-occurrence restrictions as (40):

\[(40) \ a. \quad \left[ \begin{array}{c} X \ V \\ \{ \text{da, desu} \} \end{array} \right], \quad \text{where} \ X \ast [+N] \]
b. * [\_ T - da ]

Implicitly assumed in (40) is that \textit{da} and \textit{desu} are basically the same with respect to the co-occurrence restriction, but \textit{da} has got an additional restriction (40b). It is a logical option to propose that the [+N] requirement is relevant only to \textit{desu}, and that (40b) is the only requirement for \textit{da}. However, I prefer the formulation as specified in (40), because it captures the intuition that \textit{da} and \textit{desu} are closely related to each other.

4.3. The Theoretical Implication

As a final remark on these three copulas, let us discuss the theoretical implication of what I proposed above. In other words, let us ask why there are such asymmetries in the syntax of these seemingly related verbs.

I have shown that \textit{da}, \textit{desu}, and \textit{desho} display interesting distributional differences. Put simply, \textit{da} and \textit{desu} are in a way special, in the sense that there are certain restrictions on the process of their forming complex predicates, whereas \textit{desho} has no such restriction. The immediate question to ask here is why they show such asymmetry. My answer to the question is that the Principle of Full Interpretation (Chomsky 1986) causes the asymmetry.

\begin{equation}
\text{(41) Principle of Full Interpretation (cf. Chomsky 1986: 98)}
\end{equation}

Every element of PF and LF must receive an appropriate interpretation.

Given this Principle of Full Interpretation, every element in a representation must participate in interpretation in some way. However, copulas are basically dummy elements, serving merely as place holders. In order to participate in semantic computation, they must incorporate some elements to form complex predicates. Otherwise, they are left in a representation without interpretation. But there are certain restrictions on the categories that are incorporated into the copulas, namely (40a) and (40b). There is no such restriction in the case of \textit{desho}, however. Why is that so?
Again, the Principle of Full Interpretation is the key. In the case of desho, we find that it has some epistemic meaning, as I pointed out in the introduction. In other words, it DOES participate in interpretative computation without any help from other elements. Therefore there is no need for predicate formation, as there is in the cases of da and desu. Since there is no process of predicate formation or incorporation, no problem of co-occurrence restrictions arises. This is why desho is not selective with respect to the categories that it follows. Thus the Principle of Full Interpretation plays a crucial role in my account of syntactic asymmetries in copula constructions involving da, desu, and desho.

5. Summary

In this paper I have argued that desu and da may attach to only [+N] categories, such as nouns, adjectives, predicate nominals, and verbs in the honorific form. In order to support my argument, I showed that certain lexical items that have been classified as non-nominal categories should in fact be analyzed as categories that carry the [+N] feature. I have also shown that da has an additional co-occurrence restriction that refers to the [+tensed] feature. Although da, desu, and desho are often compared with one another in terms of their semantics, a careful examination of how they behave reveals interesting distinctions in their syntax as well. A principled explanation for the syntactic asymmetries can be found in Chomsky's Principle of Full Interpretation.

References

Hoshi, Koji (1995) Structural and Interpretive Aspects of Head-Internal and Head-External Relative Clauses, University of Rochester Ph. D. dissertation.


Relative \textit{that} is a \textit{wh}-operator* \\
Gabriel Webster \\

gabeweb@u.washington.edu

1. Introduction

The status of restrictive relative \textit{that} in English is somewhat controversial. Traditionally, it has been considered to be a relative pronoun (Quirk et. al. 1985), along with \textit{who} and \textit{which}. In certain formal syntactic frameworks, the classification of \textit{that} with \textit{who} and \textit{which} has been maintained, such as in HPSG (Sag 1997) and Word Grammar (Hudson 1990), as well as within functionalist approaches such as that of Van der Auwera (1985). However, within the Government-Binding (GB) framework (Chomsky 1981) and its predecessors, relative \textit{that} has been reanalyzed as a complementizer (Bresnan 1970, Gregg 1972, Downing 1973). In this paper I argue that this reanalysis is largely unmotivated, and that relative \textit{that} is a \textit{wh}-operator like \textit{who} and \textit{which}.

In section 1, I argue that analyzing relative \textit{that} as a \textit{wh}-operator (henceforth referred to as the \textit{wh}-\textit{that} analysis) is generally simpler and more straightforward than analyzing relative \textit{that} as a complementizer (the \textit{c}-\textit{that} analysis). Section 2 demonstrates that all but one of the principal arguments that relative \textit{that} should be reanalyzed as a complementizer are fatally flawed. Section 3 points out that the problem of the suspension of \textit{that}-trace effects in relative clauses is eliminated under the \textit{wh}-\textit{that} analysis. Finally, section 4 develops the \textit{wh}-\textit{that} analysis, showing how it uses lexical specification to explain the distribution of relative \textit{wh}-operators, and diachronic relationship to explain the present-day resemblance of relative \textit{that} to complementizer \textit{that}.

2. Establishing the "default" analysis

In this section, I argue that the \textit{wh}-\textit{that} analysis should be considered the "default" analysis, because it makes stronger generalizations about the basic data. Of course, this does not

* I would like to thank Soowon Kim and Heles Contreras for providing comments on an earlier version of this paper.
rule out the *c*-that analysis, but it requires that the *c*-that analysis of the more complete data discussed in section 2 be better than, not merely as satisfactory as, the *wh*-that analysis to be considered superior overall.

To begin, consider the following examples of restrictive object relative clauses in English:

(1) a. The man who I saw yesterday was ill.
b. The man that I saw yesterday was ill.
c. The man I saw yesterday was ill.

The sentences in (1) all have the same meaning, and phonetically, they differ only in their choice of "relative pronoun": *who*, *that*, or Ø. Perhaps the most obvious analysis would be that this optionality simply reflects a three-way choice of relative *wh*-operator in English (this is the *wh*-that analysis). Thus the sentences in (1) would have exactly the same syntactic structure, differing only in the choice of a single lexical item, which corresponds to the fact that these sentences are so surface-similar and synonymous.

However, English complement and relative clauses, and interrogative and relative clauses, also display similarities:

(2) a. I knew (that) the man wrote the book.
b. The book (that) the man wrote was excellent.

(3) a. I wonder who I saw yesterday.
b. The man who I saw yesterday was ill.

*That* appears optionally as the first word of the embedded clause in both the complement clause in (1a) and the relative clause in (1b). Similarly, the same string of words used as an embedded interrogative clause in (3a) is used as a relative clause in (3b). These similarities would be captured if we analyze *that* as a complementizer in both (1a) and (1b), and *who* as a *wh*-operator in both (2a) and (2b). Under this analysis (the *c*-that analysis), we additionally no longer need to
posit a separate set of relative operators in the lexicon, since all words used as relative operators are simply either interrogative *wh*-operators (*who* and *which*) or complementizers (optional *that*).

However, the data in (1-3) present a paradox. The examples in (1) suggest that relative *that* is a *wh*-operator, while the examples in (2-3) suggest that *that* is a complementizer. Both of these analyses cannot be right, and so a choice must be made. Now, the data in (1-3) are the basic data to be explained. Other things being equal (including the ability to explain a more robust set of examples), the analysis which explains the basic data in the simplest and most straightforward manner is the analysis to be preferred.

Recall that not only are the examples in (1) similar on the surface, but their meanings are identical. In contrast, the examples in (2) and (3) are not nearly so similar to each other. (2a), for example, contains no trace, whereas (2b) does (*the man wrote* t). Thus, (2b) must contain a moved element, while (2a) contains no such element. In (3), note that the embedded clause in (3a) expresses a question, while in (3b) the same string of words acts to modify the subject NP *the man*, which is a very different operation. Given the choice, it would be preferable to capture the close similarity between the examples in (1), rather than the lesser similarity between the examples in (2-3). Thus, the *wh*-*that* analysis is preferable on these grounds.

With respect to this core data, the *wh*-*that* analysis is more straightforward. The *c*-*that* analysis is more complicated with respect to relative clauses (since the CP heading a relative clause may have an overt specifier or an overt head, but not both and not neither), but has the ability to capture the apparent similarities seen in the examples in (2) and (3). In the next section, however, I demonstrate that considering more data makes it apparent that the patterns expressed in (2) and (3) are not robust, and that the *c*-*that* analysis is therefore both more complex and not more insightful than the *wh*-*that* analysis.

---

1 However, I argue in section 4.1 that fortunately, we need not make such a choice.
3. Reconsidering the arguments for $c$-$that$

This section discusses the main arguments that have been made in favor of $c$-$that$. Section 2.1 shows that a number of these arguments are fatally flawed. Section 2.2 discusses an argument for $c$-$that$ that is truly sound and requires explanation, an issue I return to in section 4.

3.1 Flawed arguments for $c$-$that$

Arguments for the $c$-$that$ analysis point out that if relative $that$ is a complementizer, then we should expect its distribution to be different from that of $wh$-operators such as $who$ and $which$. These analyses proceed to demonstrate, and indeed crucially rely on, the fact that $that$ does indeed have a different distribution from $who$ and $which$. However, implicit in this argument is the prediction that the different $wh$-operators should have the same (or very similar) distribution; if it turned out that different $wh$-operators had significantly different distributions, then the fact that $that$ also had a significantly different distribution would no longer imply that it was not a $wh$-operator.

Indeed, this is what we see if we consider a range of data beyond that considered by $c$-$that$ analyses. Even words that are uncontroversially $wh$-operators have distributions which are quite different from each other; if relative $that$ is a $wh$-operator, then it is not surprising that it also has a distinct distribution. Section 2.1.1 discusses pied-piping; section 2.1.2 discusses possessive relative clauses; section 2.1.3 discusses interrogative and relative clauses, and section 2.1.4 discusses infinitival relatives.

3.1.1 Pied-piping in relative clauses

The most common argument for the $c$-$that$ analysis involves pied-piping:

(4)  

a. The box [on which I put my hat $t$] was made of wood.

b. *The man [to that I spoke $t$ yesterday] was ill.
That may not appear as the object of a preposition. If this is because that is not an NP, then that cannot be a wh-operator (since under the wh-that analysis, who, which, and that are all NPs). But consider further examples:

(5)  
a.  *The man [to who I spoke t yesterday] was ill.
b.  The man [to whom I spoke t yesterday] was ill.

(5a) shows that neither can who appear as the object of a preposition, even though it is clearly an NP. Rather, in registers of English that make use of pied-piping, the object of a preposition must have oblique Case: whom has oblique Case, but who does not. With this in mind, the ungrammaticality of (4b) is explained by the fact that that simply does not have oblique Case².

3.1.2 Possessive relative clauses

That may not appear in the possessive form of a relative clause in standard English:

(6)  
a.  The man [whose cat I saw t yesterday] was ill.
b.  *The man [that’s cat I saw t yesterday] was ill.³

However, nor can which:

(7)  
a.  The box [whose lid t was opened] was empty.

---

² It is important to keep at least two registers of English distinct in order to avoid confusion:

(i) The man who I spoke to was ill. (less formal)
(ii) The man to whom I spoke was ill. (more formal)

In the register of (i), there is no oblique Case (it has been replaced by the accusative) and there is no pied-piping, so a sentence such as (5a) is ungrammatical because it is not licensed by the syntax; morphologically, it is fine, since in the register of (i) the object of a preposition must have accusative Case. In the register of (ii), the register being considered in (5), (5a) is ungrammatical morphologically, not syntactically.

³ Romaine (1980) reports that in Scots English, (6b) is grammatical, demonstrating that relative that in Scots is an NP, not a complementizer. In Scots, since that has a genitive form, it is an NP. Although it is conceivable that that’s is a possessive NP in Scots while that is a C in standard English, it is more likely that there simply isn’t a that with genitive Case in standard English, just as there is no that with oblique Case, while there is in Scots.
b. *The box [which’s lid t was opened] was empty.

Just as the distribution of that and who are similar with respect to pied-piping, the distribution of that and which are similar with respect to possessive relatives. Who has a possessive form whose (which, incidentally, is [+animate], like relative that), but which and that do not. These distribution facts clearly contradict the predictions made by the c-that analysis discussed above.

### 3.1.3 Embedded interrogative clauses

Who may appear in embedded interrogative clauses as well as relative clauses, but that may not:

(8) a. I wonder [who I saw t yesterday].

b. *I wonder [that I saw t yesterday].

However, NP which (not to be confused with determiner which) may appear in relative clauses but not in embedded interrogative clauses, while what may only appear in interrogatives:

(9) a. The box [which I saw t yesterday] fell.

b. *I wonder [which I saw t yesterday].

c. I wonder [what I saw t yesterday].


There must be two lexical entries for which: one as a determiner for use in interrogative clauses, and one as an NP for use with relative clauses. Furthermore, we must be able to prevent determiner which, as well as what, from appearing in relative clauses. There must, therefore, be some feature, such as [±rel] (Rizzi (1990) suggests [±pred]), where what and determiner which are [-rel] and NP which and that are [+rel]. Since who can appear in both types of clauses, we can assume that it is unspecified for [±rel].
This fact is detrimental to the $c$-$that$ analysis, since one of its advantages is to minimize lexical specification, explaining relative clauses through the properties they share with interrogative and complement clauses. The examples in (9) demonstrate that even under the $c$-$that$ analysis, relative operators must be specified as such, resulting in no “savings” in lexical specification over the $wh$-$that$ analysis (which must posit $that$ as a $[+rel]$ $wh$-operator in order to avoid it being used in interrogative clauses).

### 3.1.4 $That$ and infinitival relative clauses

Radford (1988) claims that relative $wh$-operators may be used in infinitival relative clauses, based on the following type of example:

(10) I know a man [with whom to play chess $t$].

Since $that$ may not appear in infinitival relative clauses (see section 2.2), Radford argues that this is an example of a distributional difference between $that$ and the uncontroversial $wh$-operators. However, section 2.1.1 explains why $that$ does not occur in pied-piping constructions; furthermore, in infinitival examples that do not involve pied-piping, no $wh$-operator may occur:

(11) a. *I know a man [who(m) to play chess with $t$].
    b. *I have a board [which to play chess with $t$].

The examples in (11) make it clear that it is the pied-piping (perhaps with $with$ governing $whom$ in (10)) that licenses the PP $with$ $whom$ as a $[-finite]$ $wh$-operator, rather than any property of $whom$ itself. In fact, the distribution in (11) extends to other relative $wh$-operators:
(12) a. *The man [who you to see t] is my brother.
b. *The time [when you to go t] is in the afternoon.
c. *The place [where you to be t] is Paris on New Year’s Eve.
d. The man [who you should see t] is my brother.
e. The time [when you should go t] is in the afternoon.
f. The place [where you should be t] is Paris on New Year’s Eve.

The observation that *wh-operators are not licensed in infinite relative clauses is quite robust. Thus, the fact that relative that also may not appear in infinite relative clauses actually supports, rather than argues against, the *wh-that analysis.

While the irregular distributions of that and the uncontroversial relative *wh-operators argue strongly against c-that, they do not in themselves explicitly argue for *wh-that. What the examples in this section primarily demonstrate is that distributional properties often must be lexically specified (via Case properties, for example), and cannot be captured simply through general classes such as “*wh-operators” and “complementizers”. In particular, the need for a feature [arel] demonstrates that relative clauses are not merely a hybrid of interrogative clauses and complement properties, but have unique properties of their own. Thus, the idea of a relative *wh-operator that, where there is no interrogative *wh-operator that, and where there is a complementizer that, cannot be ruled out purely on principled or aesthetic grounds.

3.2 A true argument for c-that

There is another generalization that the c-that analysis offers, as the following examples show (again referring to non-NP relativization):

(13) a. The man [for/*that you to see t] is my brother.
b. The time [for/*that you to go t] is in the afternoon.
c. The place [for/*that you to be t] is Paris on New Year’s eve.
d. The man [that/*for you should see t] is my brother.
e. The time [that/*for you should go t] is in the afternoon.
f. The place [that/ for you should be it] is Paris on New Year’s eve.

These infinitival relative clauses must be introduced by for, and the corresponding finite relative clauses must be introduced by that. Thus, with respect to finiteness, the distribution of that and for in relative clauses is the same as in complement clauses. The c-that analysis predicts this distribution, while the wh-that analysis has to maintain that there are simply two thats and two fors, with one a wh-operator and the other a complementizer. Thus, these examples, unlike the data considered in section 2.1, actually argue for the c-that analysis (in fact, they are the only true evidence in favor of c-that that I am aware of). In section 4.1, I propose that the similarities between relative wh-operator and complementizers that and for can be explained diachronically, by looking at their status in an earlier stage of English.

4. That-trace effects in relative clauses

In English extraction out of embedded clauses exhibits what are known as that-trace effects:

(14) a. Who did you say [that John saw it]?
b. Who did you say [John saw it]?
c. Who did you say [it saw John]?
d. *Who did you say [that it saw John]?

Generally, in a CP, if the C contains that, then Spec-IP may not contain a trace. This is analyzed as an ECP violation: traces must be lexically governed, and in (14d) that blocks government by the matrix verb of the trace in Spec-IP.

If we assume the c-that analysis, then a significant problem is that that-trace combinations are not ruled out in subject relative clauses, but rather are required, as the ungrammaticality of (15b) shows:
(15)  
a. The man [∅₁ that t₁ saw me] was ill.

b. #The man [∅₁ e t₁ saw me] was ill.

Rizzi (1990) suggests that in (15a), *that* is licensed as a lexical governor of the trace because it is the “subject of predication” of the “predicative” relative clause, and that thus it must agree with the “head of predication”, in this case *saw*. This proposal is suspiciously complex. That it requires complementizers to be allowed to agree is highly ironic, since the fact that *that* does not show overt agreement has been used by Gregg (1972) and others as an argument for the *c*-that analysis. As for (15a), it is unclear how such a construction could be ruled out in a principled way.

Under the *wh*-that analysis, the problem disappears immediately, since in (15a) *that* is the operator binding the trace, not a complementizer, and therefore it is fully licensed. The ungrammaticality of (15b) is explained if an accusative null relative *wh*-operator appears in the lexicon, but not a nominative one.

5. Completing the *wh*-that analysis

Given that the *wh*-that analysis is superior to the *c*-that analysis, how does it account for the range of data encountered in this paper? Section 4.1 proposes that those similarities which truly exist between relative and complement *that* can be captured diachronically, while section 4.2 provides an inventory of the relative *wh*-operators discussed in this paper that captures their distributions.

5.1 Diachronically explaining relative *that*

In Middle English (as well as in modern languages such as Canadian French (Lefebvre 1979) and Dutch (den Besten 1978)), we see examples of *wh*-words co-occurring with (the equivalent of) *that* in relative clauses:
(16) a doghter which that called was Sophie

‘a daughter who/that/*who that was called Sophie’ (Traugott 1972)

In Middle English, if that is a wh-operator, then what is which? Here, the most obvious analysis is that which is a wh-operator, and that a complementizer. These historical facts suggest a simple explanation, following Van der Auwera (1985), among others: that (and for) was a complementizer in Middle English relative clauses, but at some point was reanalyzed as a relative wh-operator (this also explains why there are no interrogative wh-operators that and for). Thus, the similarities we see in Modern English between the two thats are explained as evidence from the status of that in Middle English. This being the case, we no longer need a synchronic analysis capturing these similarities, since they can be explained in a plausible, diachronic manner.4

5.2 The distribution of relative wh-operators

Under the wh-that analysis, we can rely on lexical specification to properly account for the restrictive relative clauses in English. The following is a complete table of restrictive, finite relative wh-operators in standard English:

(17) Table of restrictive wh-operators [+wh, +rel, +finite]

<table>
<thead>
<tr>
<th></th>
<th>Nominative</th>
<th>Accusative</th>
<th>Possessive</th>
<th>Oblique</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+animate]</td>
<td>who</td>
<td>who</td>
<td>–</td>
<td>whom</td>
</tr>
<tr>
<td>[-animate]</td>
<td>which</td>
<td>which</td>
<td>–</td>
<td>which</td>
</tr>
<tr>
<td>(unspecified)</td>
<td>that</td>
<td>that</td>
<td>whose</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Ø</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 The validity of diachronic explanation in generative syntax has not been fully established (Fritz Newmeyer, personal communication). While diachronic explanation is useful in principle, the problem is that there no well developed formal theory of diachronic syntactic change that tell us what kinds of change are possible. That is, which aspects of syntax are stable and which are unstable, and why? I assume that such a theory would allow the type of change I am proposing here.
Note that the homophony and the "gaps" in with respect to specification of animacy in this chart are quite common. In English third-person pronouns, for example, the accusative and genitive share the phonetic form *her. And in French, gender is specified in the singular possessive determiners *ma and *mon 'my', but not in the plural possessive determiner *mes.

Complementizer *that is [-wh, -rel], which explains, along with Spec-Head agreement, why we never see sentences with both a relative operator and a complementizer in Modern English (Rizzi (1990) also makes use of this mechanism):

(18)  
   a. *The man who[+wh] that[-wh,-rel] I saw was ill.  
   b. *The man which[+wh,+rel] that[-wh,-rel] I opened was empty.  
   c. *The box that[+wh,+rel] that[-wh,-rel] I opened was empty.

With these lexical specifications, the *wh-*that analysis explains the data in a straightforward way.

In summary, we have seen that although some evidence exists to suggest that relative *that and complementizer *that are the same, this analysis must be rejected when the full weight of the evidence is brought to bear on the issue. The generalizations that the *c-*that analysis attempts to make are not confirmed beyond a basic subset of relative clause constructions, and are thus false generalizations. Furthermore, when attempting to explain *that-trace effects, even the descriptive adequacy of the *c-*that analysis is questionable.

The *wh-*that analysis presented above is simple and empirically sound, and captures the generalization that the sentences in (1) are essentially identical. The *wh-*that analysis automatically explains *that-trace effects and "doubly-filled Comp" effects. Finally, the sentences in (2) and (3) are not essentially identical, and thus do not call as strongly for synchronic generalization. However, those similarities between *wh-operator *that and complementizer *that can nonetheless be captured by referring to diachronic explanation.
References


What to Do With Asian Anaphors?

Tom Wylie
aahz@u.washington.edu
aahz@wizards.com

1. Introduction

The standard Binding Conditions face a number of challenges from virtually every language. Chief among these are long-distance anaphors (or LDAs), which can take antecedents far outside the domain granted them by the Binding Conditions. Various proposals to repair the situation have been offered, ranging from redefining the domains in which anaphors can be bound, to changing having the conditions apply at LF (thereby reducing surface “violations” to covert acceptability), to replacing the conditions with an entirely new mechanism.

The Chinese LDA *ziji* presents an extremely unusual case in that it exhibits what’s called the blocking effect: while it can in principle take an antecedent several clauses up in the tree, if a potential antecedent doesn’t agree with *ziji*’s closest antecedent, the disagreeing one blocks itself and any higher potential antecedents from being the actual one. Facts surrounding the blocking effect have led to analyses of *ziji* (presumed to extend to other LDAs) in which it raises successive-cyclically at LF, until it enters the clause containing its antecedent. If the phi-features of a clause’s subject disagree with the phi-features *ziji* inherits from the subject of its original (S-structure) clause, *ziji* can’t move into that clause, and therefore not into any higher clause, hence the blocking effect.

Unfortunately, these analyses of the blocking effect make exactly the wrong predictions for Japanese and Korean, similar languages with similar LDAs. When these false predictions are discussed at all, they’re stipulated to result from a language-specific rule, present in Chinese but not Japanese or Korean; no attempt is made to derive a general treatment of these three languages which would lead directly to the differences between *ziji* and its peers. Whether or not one thinks this is an acceptable treatment of the blocking effect itself, facts concerning LDAs which appear in adjunct clauses in these
languages would appear to require additional language-specific rules, and possibly
distributing these rules across the languages, rather than concentrating them all in, say,
Chinese.

Clearly it would be preferable to account for the variations in the behavior of
these LDAs by means other than scattering a series of language-specific rules across a
series of languages. Ideally, one would like a system which encompasses all LDAs,
including the ones in these languages, from which the blocking effect falls out. This paper
outlines a line of investigation aimed at producing just such a system, based on the idea
that the blocking effect doesn’t result from a rule specific to Chinese, but from an
environment specific to it. We will then look at an existing system which could be used as
the basis for such an analysis: reflexivity, introduced in Reinhart and Reuland (1991,
1993).

2. The Blocking Effect

Of the differences in behavior between the Asian languages’ LDAs, the blocking
effect has received the most attention in the literature. As mentioned above, if a potential
antecedent for \textit{ziji} disagrees with the subject of \textit{ziji}’s surface clause, the disagreeing
antecedent blocks itself, and any higher potential antecedent, from being the actual one.
The blocking effect in Chinese, and the lack of it in Japanese and Korean, are shown in
(1) and (2): \footnote{2b demonstrates that the blocking effect is actually visible when there is only one embedded clause. If \textit{casin} exhibited the blocking effect, then \textit{Cheli} couldn’t be a valid antecedent in (2b), since it doesn’t agree with \textit{nay}.}

(1) a. Zhangsan; shuo [Wangwu zhida0 [Lisi k chang piping ziji_{ij}k]]
‘Zhangsan said (that) Wangwu knew (that) Lisi often criticized self’
b. Zhangsan; shuo [woj zhida0 [Lisi k chang piping ziji_{i},{ij}k]]
‘Zhangsan said (that) I knew (that) Lisi often criticized self’

(2) a. Johni-ga [watisi minna-ni [Billk-ga zibuni_{ij}k-o hihansita koto-o]
hanasita to] omotte-iru

‘John thinks that I told everyone the fact that Bill criticized
himself/myself/himself.’


‘Cheli said that I had betrayed self’

In (1a), all the subjects agree, so ziji can take any of them as its antecedent. But in
(1b), the middle subject disagrees with the lowest one, so ziji’s only possible antecedent
is the lowest subject. In (2), zibun and casin can take any of the subjects as their
antecedent, despite the fact that, in each sentence, the middle subject disagrees with the
other two.

It’s standardly accepted that LDAs such as ziji lack inherent phi-features, but
acquire them from some other element in the sentence, typically the LDA’s intended
antecedent. So it wouldn’t be that surprising if, in (1b), the middle subject were the only
one which ziji couldn’t take as its antecedent. In that scenario, ziji would acquire its phi-
features from its local subject, but be able to take any agreeing subject as its antecedent.
But the fact is that the highest subject of (1b) is also ruled out, which was a bit of a puzzle
until analyses were presented which have ziji moving through the tree successively-
cyclically at LF. In these analyses, ziji has the phi-features of the closest subject as of S-
structure, and can’t move into any clause whose subject disagrees with those phi-
features.²

These analyses are predicated on the facts Chinese lacks verbal agreement, and
ziji lacks inherent phi-features. But these facts are also true of Japanese and Korean, so
why shouldn’t they exhibit the blocking effect as well? Korean’s caki is especially
problematic, since unlike ziji, zibun, and casin, caki can only take third-person
antecedents. Clearly, even if one comes up with an explanation why only some
underspecified LDAs (ziji) exhibit the blocking effect while others (zibun, casin) don’t,
the blocking-effect analysis predicts that a fully specified LDA like caki would exhibit the
blocking effect.

² Whether this reduces a principle such as Spec-head disagreement depends on the analysis. See Cole and
Sung (e.g., 1994) and Huang and Tang (e.g., 1991) for two takes on this kind of analysis.
When analyses of the blocking effect discuss these problems at all, they fall back on stipulating that the blocking effect results from a language-specific rule; see especially Cole and Sung (1994). However, it’s not at all clear which part of the analysis is supposed to be language-specific; the simplest option is that Japanese and Korean don’t check for agreement between the LDA and the subjects it’s moving past, but that hardly seems like the right choice. So there’s already some inclination to look for an analysis from which the blocking effect falls out, which will intensify as we look at the (relevant) facts surrounding adjunct clauses.

3. Adjunct Clauses

The behavior of *ziji* in adjunct clauses provides additional support for the idea that it acquires its antecedent via movement. When *ziji* does appear in an adjunct clause, it can’t take an antecedent outside that clause. Japanese and Korean LDAs which appear in adjunct clauses, however, have no such restrictions. The Chinese behavior is shown in (3):

(3) [ yinwei [ Lisi piping ziji₃₁ ] ] Zhangsan₅ hendu jiaoxing

Since extraction from adjunct clauses is problematic at best, the fact that (3) is ungrammatical does support some kind of movement analysis of *ziji*, such as the standard analyses of the blocking effect. Assuming *ziji* moves, it’s expected that it wouldn’t be able to escape the adjunct clause. However, in the Korean equivalent of (3), which has the same structure, an LDA can take either subject as an antecedent. If Korean LDAs move, but instead acquire their antecedent via some direct connection, then this contrast isn’t surprising. The facts and expectations for *zibun* are the same as for Korean LDAs.

Notice that we’re being led towards an analysis which has *ziji* acquiring its antecedent through a completely different mechanism than the LDAs in Japanese and Korean. Maintaining that this is a result of a language-specific rule would therefore seem to require that the language-specific rule completely replaces the standard mechanism for acquainting an LDA with its antecedent with the language-specific mechanism. Not only
does this go above and beyond the usual call of duty for language-specific rules, if it
turned out that Chinese is actually closer to the standard mechanism than the other two,
this would require stipulating that Japanese and Korean have (at least very close to) the
same “language-specific” mechanism for LDAs, which would be suspect at best.³

4. The Chinese Environment

An analysis which allows LDAs to acquire their antecedents via more than one
mechanism, from which we can then derive the presence or absence of the blocking
effect, is looking more and more desirable. However, there’s still the problem that
Japanese and Korean have the same environment as Chinese, so one would expect LDAs
to behave the same in all three languages. But is their environment really the same?

The core intuition behind the analyses of the blocking effect is that some kind of
path is established through the tree, from zijī’s original position to that of its intended
antecedent. If that path passes by a subject which disagrees with the phi-features zijī
inherits from the closest subject, the path is disrupted, and the blocking effect results.
Suppose this path were always disrupted in Japanese and Korean. If this were true, the
only way they could acquire long-distance antecedents would be via a direct connection
(e.g., logophorically), and the absence of a blocking effect would follow directly.

There is a potentially important structural difference between Chinese, Japanese,
and Korean which so far has been lurking behind the scenes. Chinese embedded clauses
typically lack Comps, except for adjunct clauses, but Japanese and Korean embedded
clauses always have Comps, whether or not the embedded clause is an adjunct. This can
be seen in (various), repeated here for convenience:

(4) a. Zhangsan shuo [Wangwu zhidao [Lisi chang piping zijī]]
    b. John-ga [watasi minna-ni [Bill-ga zibun-o hihansita koto-o]
       hanasita to] omotte-iru

³ And as we’ll see later on, it can be argued that the Chinese situation is in fact closer to the usual truth than
the other two.
c. Cheli-nun [nay-ka casin-ul paypanhayssta-ko] malhayssta

d. [yinwei [Lisi piping ziji]] Zhangsan hen bu jaoxing

If a Comp is enough to disrupt the path drawn through the tree from ziji's starting position to its antecedent, then the LDA path can never be established in Japanese and Korean, since Comp is always present. In Chinese, Comps are typically absent, so the path can typically be established. But its adjunct clauses do have Comps, which would block the path, and thus the LDA path wouldn't be able to travel out of an adjunct clause in order to find an antecedent.

So our working hypothesis is that LDAs normally acquire their antecedents via a path traced through the tree somehow, and that a Comp would be enough to truncate that path. Japanese and Korean, which can't ever start the path to begin with, need to rely on some kind of direct connection in order to acquire their antecedents. We therefore need a framework in which anaphors acquire their antecedents through a grammatical function (i.e., the path) in some cases, but through direct connections in others. ⁴ We now turn to a framework which provides exactly this kind of flexibility, though as we will see directly, adapting this framework to Asian LDAs isn't exactly trivial.

5. Reflexivity

The reflexivity framework seeks to dispense with the standard Binding Conditions in favor of conditions on the distribution of reflexive predicates and coreferential arguments. Much of the "aberrant" behavior of various anaphors is explained by saying that anaphors acquire their antecedents via grammatical processes only when they appear on fully-realized syntactic grids, and logophorically if they appear anywhere else. This distinction can be demonstrated easily with picture NPs:

⁴ So far we've been looking at analyses in which the path is established via movement, but it's also possible that it could be established by successive binding of tenseless Agr, along the lines of Borer (1989). The relative merits of movement analyses vs. Agr-binding ones will not be examined in this paper, though Borer does assume that a Comp would truncate a path consisting of bound Agrs, which fits in perfectly with the direction we're going here.
(5) a. Pictures of himself_{john} disgust John.
   b. The newshound’s pictures of himself_{newshound\_john} disgust John.
   c. The newshound’s pictures of him_{newshound\_john} disgust John.

In (5b), picture’s syntactic grid is fully realized (e.g., it has a SUBJECT), so
themselves reflexive-marks it, and therefore must find its antecedent on picture’s grid.
Coindexing themselves with John and Mary would result in pictures being reflexive-
marked but not reflexive, and the sentence would be ruled out by the reflexivity
conditions. But in (5a), the grid isn’t fully realized (at least, not syntactically), so
themselves doesn’t reflexive-mark it, so can (and must) find its antecedent logophorically.
This leaves it free to be coindexed with the intended antecedent, John and Mary. Finally,
in (5c), him can’t take newshound as its antecedent, since this would leave pictures
reflexive but not reflexive-marked.

When work on this paper began, it was thought that, because reflexivity is
partially based on the idea that anaphors find their antecedents grammatically in some
cases and logophorically in others, it would comfortably handle the kind of analysis
proposed in this paper. However, this fit now appears to be awkward at best, for two
reasons.

First, reflexivity doesn’t handle anaphors like the Asian LDAs very well. The
framework asserts that, at least on fully-realized syntactic grids, SELF-anaphors and SE-
anaphors are in complementary distribution, as seen for Norwegian in (6a) below. But
this is not the case for languages like Chinese and Korean, as seen in (6b,6c) for Korean:

(6) a. Jon, foraktet seg selv/{*seg\_self/*ham\_self}.
   ‘Jon despises himself/self/him’
   ‘John hates self’
   ‘John hates him-self’

Whereas complementarity does obtain for Norwegian, this isn’t the case for
Korean. There are several approaches one might take to adjusting the framework to
account for this, ranging from: claiming that in Asian languages, “local” LDAs are really
pro-LDAs (so would function like SELF-anaphors); to reclassifying Asian LDAs as a third kind of anaphor, which follows slightly different rules from the SELF- and SE- varieties; to recasting reflexivity within OT (or something like it) and claiming that in Asian languages the constraint responsible for complementarity is buried deep within the constraint hierarchy, where it rarely if ever has an effect on the outcome.

Of course, reflexivity has to handle that problem regardless of what one thinks is true of LDAs, so that alone isn’t enough to make one reject it as the framework for the kind of analysis proposed here. But even if Asian LDAs can be accommodated within the reflexivity framework to begin with, there’s still the question of how it is they take long-distance antecedents while on a fully-realized grid. In the case of Chinese, one can argue that *ziji* fits perfectly within the framework. The SE-anaphors that Reinhart and Reuland (1991, 1993) analyze can be (grammatically) long-distance only when they’re in an infinitival clause, and even then their domain is the first finite clause above them. Take the following Norwegian sentence:

(7) Jon; bad oss forsoke a fa deg til a snakke pent om seg;

‘Jon asked us to try to get you to talk nicely about self’

In this sentence, *SE* latches onto *V*, allowing it to move through the tree along with *V*, until it stops in the first finite clause (the matrix one). If (7) were embedded within another finite clause, *seg* wouldn’t be able to take an antecedent in that higher clause; its only antecedent would still be *Jon*.

Of course, this treatment of SE-anaphors is right in line with the standard analyses of the blocking effect, which have *ziji* raising through the tree to get to the clause containing its intended antecedent. The difference between Chinese and a language like Norwegian is that in Chinese, all clauses are tenseless, so *ziji* is always free to keep moving all the way to the matrix clause. Presumably the blocking effect would occur in a language like Norwegian if its infinitival clauses could have subjects, but since they don’t, the effect is invisible in these languages. Only languages like Chinese, which allow subjects in tenseless clauses and allow this kind of movement, can exhibit the blocking effect. Also note that these infinitival clauses are Comp-less, so we could still maintain the position that a Comp blocks the progress of this kind of path through the tree.
But this still leaves us with the puzzle of how Japanese and Korean LDAs get their antecedents. The most straightforward way to accomplish this would be to observe that the spirit of the grammatical/logophoric distinction is that anaphors acquire their antecedents grammatically only when the grammatical mechanism has any chance of working. Even if the native environment is a tenseless clause, if the grammatical mechanism involves tracing some kind of path which would be blocked by a Comp (or a tensed clause), then Japanese and Korean LDAs are never able to make use of grammatical means of acquiring their antecedents, and are forced to act logophorically, even when on fully-realized grids. But this feels like giving up too much explanatory power for the sake of descriptive power; it’s certainly an ugly turn of the reflexivity framework.  

6. Closing Remarks

The title of this paper asks what we should do with Asian anaphors. It should be clear by now that it’s not really clear what we should do with them. Developing a framework in which anaphors can use either of two mechanisms for acquiring their antecedents, depending on the circumstances, is beyond the scope of this paper, as is adapting a framework like reflexivity to account for the facts surrounding Asian LDAs. This has forced the paper to be somewhat speculative, but hopefully it will serve as at least a baby step towards an analysis which can account for these facts, without having to resort to one or more language-specific rules to be included in one or more languages.

And as a final note, if one looks through the literature, one finds conflicting reports on the facts surrounding Asian LDAs. For example, Cole and Sung (1994) claims that casin exhibits the blocking effect, while Huang and Tang (1991) claims that when ziji appears in an adjunct clause, it can take an antecedent outside that clause. Both these claims contradict facts presented in this paper, which were taken from various native

---

5 Icelandic apparently presents the same sorts of problems for reflexivity as Japanese and Korean. So this problem, at least, probably needs to be solved for independent reasons.
speakers I’ve consulted with at the University of Washington. It remains to be seen whether only some of these sources (the papers above, the speakers here) are correct, or whether all of them are. If it turns out that these facts are subject to speaker variation, then obviously a language-specific approach would have to be abandoned. These questions await further research.

References

Borer, Hagit. 1989. Anaphoric AGR. In Jaeggli and Safir, eds.


Table of Contents

Dedication i

Acknowledgements vii

COMP – Ko as Inherent Accusative Marker 1
Yongkil Jeong

Serial Verb Construction in Korean 41
Jae-yoon Kim

Comments on Verb Raising in Japanese and Korean 78
Soowon Kim

Proposal for an Experiment on SU, DO and IO 100
Relative Clause Acquisition in French
Jennifer A. Loveless

Constraints on wordfinal schwa loss in 119
Middle High German
Renata Raffelsieben

Da, Desu, Desho: Some Asymmetries in Japanese 165
Copula Construction
Tatsuya Suzuki

Relative that is a wh-operator 185
Gabriel Webster

What to Do With Asian Anaphors? 199
Tom Wylie