A FORMAL AND CORPUS-BASED ANALYSIS OF GRAMMATICALIZATION OF *IK* 'GO' IN JAPANESE

A DISSERTATION
SUBMITTED TO THE DEPARTMENT OF ENGLISH LINGUISTICS
OF KOBE SHOIN GRADUATE SCHOOL OF LETTERS
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

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November, 2014

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Acknowledgments

This doctoral dissertation could not have been completed without support, cooperation, and encouragement from many people, those in linguistics field and my family. I thank all of them from the bottom of my heart.

First of all, I would like to express my gratitude to the committee members of this dissertation, Takao Gunji, Kenjiro Matsuda, and Brent de Chene. Critical and insightful comments and suggestions from Takao Gunji was indispensable for a formal-semantic analysis of grammaticalization. Since my embarkment on my postgraduate study, Kenjiro Matsuda in patience kept encouraging me to proceed my study and to apply to conference presentations, which brought me invaluable experiences during my study life. It was his two-week summer seminar on sociolinguistics, when I was an undergraduate student at Kanda University of International Studies, dating back to 2006, that made me decide to embark upon a linguistic study in the postgraduate program. Brent de Chene read this dissertation carefully and gave me many comments as well as corrected English errors. Without these scholars, I would not have taken a step in linguistics and never completed this dissertation.

My thanks also go to Taisuke Nishigauchi and Phillip Spaelti for their helpful remarks during my study life. Insightful comments from Taisuke Nishigauchi were helpful in organizing my ideas about syntactic analysis and its generalization. Phillip Spaelti helped in correcting English mistakes when I was in preparation for conference presentations.

Discussions with my colleagues and comments from other linguists helped advance my research as well. I would like to give particular thanks to Toshio Hidaka for his insightful comments; collaborative research with him guided me to a formal perspective of linguistics and helped organize my ideas. I thank Yuichiro Abe for his practical assistance in creating a program of extracting data from corpora; additionally, his comments were another eye-opener for me when I was making the syntactic and semantic explanations for the grammaticalization process. My gratitude also goes to Akiko Hirashima, Michiko Bando for their questions and comments at the in-house presentations. I would like to express gratitude to Haruo Kubozono and Miki Kobayashi as well. To Haruo Kubozono, for allowing me to participate in his phonology seminar at Kobe University in 2008. To Miki Kobayashi, for

her supervision of my undergraduate study at Kanda University of International Studies, which were the base of my way to a field of linguistics.

Part of this dissertation has been presented at several national and international conferences. A version of Chapter 4 was presented at the 38th Annual Meeting of Kansai Linguistic Society (Arai & Hidaka 2013a) and the 23rd Japanese/Korean Linguistics Conference (Arai & Hidaka 2013b). I thank the participants of these conferences for their comments and suggestions; in particular, the comments from Shigeru Miyagawa opened up the discussion in Chapter 6. Chapter 5 is based on papers presented at the 2nd Meeting of New Ways of Analyzing Variation and Change in the Asia-Pacific Region (Arai 2012) and the 21st International Conference on Historical Linguistics (Arai 2013). Many comments and suggestions from the audiences helped advance my study; the comment on the frequency effect was especially helpful in the analysis presented in the chapter. I would like to thank the participants of these conferences for their critical and insightful remarks.

Words of encouragement and warm support from my family were indispensable for completing this dissertation. I express my heartfelt gratitude to my family, Jun'ichi, Kazuko, and Teruyo Arai, and my aunt and uncle, Etsuko and Kazuhiko Kono. My family have given me lots of love and welcomed me every time I came back home. My aunt and uncle have treated me with gentle patience. I, in particular, pay my gratitude to Kazuhiko for having been a big supporter since my childhood; I truly find it regrettable that I could not complete my study before he had passed away. Smiles of my grandparents, Yoshio and Sato Kimijima, were always with me; I would like to dedicate this dissertation to their departed souls. Finally, I would like to close with words which have uplifted me throughout my study life and which will do so for years to come.

> "*Sai no tomosiki ya, manabukoto no osoki ya, hima no naki ya ni yorite, omoikuzu orete yamurukoto nakare. Totemo kakutemo, tutomedanisureba dekirumono to kokorou besi. Subete omoikuzu oruru wa, gakumon ni ooki ni kiraukoto zo kasi.*"
>
> 'No matter if you are not talented, no matter if you are a late starter, and no matter if you have little time, do not give up in despair. Bear in mind that you can achieve what you do as long as you are striving for it. It is never too late to learn anything.'
>
> (Moto'ori Norinaga, *Uiyamabumi*)

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List of Abbreviations

ACC:	Accusative
COMP:	Complementizer
CON:	Conjunctive
DAT:	Dative
EXCL:	Exclamation
GEN:	Genitive
HON:	Honorifix
IMPR:	Imperative
IND:	Indicative
NEG:	Negative
NOM:	Nominative
PAST:	Past tense
PERF:	Perfective aspect
PL:	Plural
PRES:	Present tense
PRFX:	Prefix
PRTCL:	Particle
PSSV:	Passive voice
Q:	Question
TOP:	Topic

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Chapter 1 Introduction

This study aims to elucidate the grammaticalization process of the Japanese motion verb, *ik* 'go', based on a formal and corpus-based analysis; to give an in-depth semantic-syntactic account of the interrelationship among the three forms appearing in the historical process—*yuk* (/*ik*) 'go' as a full verb, V-*yuk* 'V-go' in which the motion verb follows a verb in infinitival form, and V-*te-yuk* (/V-*te-ik*) 'V-CON-go', the form where the motion verb follows a verb through a conjunctive particle *te*; to offer an explanation about the morphophonological change—the linguistic variation between V-*te-ik* and V-*te-k*—which V-*te-yuk* (/V-*te-ik*) 'V-CON-go' experiences in present-day Japanese. (1a–c) are the examples of the Japanese motion verb appearing as a full verb, as the infinitival form, and as the *-te* conjunctive form, respectively. For (1b,c), (i)-sentences are the cases in which the motion verb denote the subject's spatial movement, while (ii)-sentences are the cases in which the verb no longer has such meaning but expresses aspectual meaning instead. (2) is an illustration of the morphophonological change occurring in the *-te* conjunctive form under study.

(1) a. *yuk* (/*ik*) 'go' (full verb)

Ken-ga yamamiti-o yuk-u.
Ken-NOM mountain.road-ACC go-PRES
'Ken goes along a mountain road.'

b. V-*yuk* 'V-go' (the infinitival form)

i. *Ken-ga yamamiti-o hasiri-yuk-u kookee*
Ken-NOM mountain.road-ACC run-go-PRES scene
'The scene of Ken running along a mountain road'

ii. *Hana-ga kare-yuk-u kookee*
flower-NOM die-go-PRES scene
'The scene of a flower going to die'

c. V-*te-yuk* (/V-*te-ik*) 'V-CON-go' (the *-te* conjunctive form)

i. *Ken-ga yamamiti-o hasit-te-yuk-u.*
Ken-NOM mountain.road-ACC run-CON-go-PRES
'Ken runs along a mountain road.'

ii. *Hana-ga kare-te-yuk-u.*
flower-NOM die-CON-go-PRES
'A flower is going to die.'

(2) *Ensoku-e takusan okasi-o {mot-te-ik-u/mot-te-k-u}.*
excursion-DAT many snack-ACC have-CON-go-PRES
'I am going to bring a lot of snacks on school excursion.'

The theses of this study are i) the predominant use of V-*te-yuk* (/V-*te-ik*) 'V-CON-go' in present-day Japanese is the consequence of *renewal*, in which the erstwhile V-*yuk* 'V-go' has been replaced by the -*te* conjunctive form; ii) what underlies this displacement is the semantic-syntactic correspondence between the older and the newer forms appearing in the grammaticalization process; iii) the morphophonological change in the -*te* conjunctive form is constrained by both linguistic and extra-linguistic factors. Central to this study is approaching to the grammaticalization phenomenon from both a formal analysis employing the theory of Generative Lexicon (Pustejovsky 1995, Kageyama 2005, Hidaka 2012) and a corpus-based analysis within the framework of Variationist Sociolinguistics (Weinreich, Labov, & Herzog 1968, Labov 1969 *et seq*, Tagliamonte 2012, among others) so as to provide a comprehensive explanation for the grammaticalization process of the Japanese motion verb in question.

The three forms under discussion have been explored by a number of researchers from various perspectives in the literature. Extensive descriptive research (Morita 1968; 1994, Yoshikawa 1976, Teramura 1984, Imani 1990, Matsumoto 1996, Yoshida 2012, and many others) has given accounts of the meaning and the deicticity of the full-verb *yuk* 'go' and the -*te* conjunctive V-*te-yuk* 'V-CON-go', and illustrated how these two forms differ from *ku* 'come' and V-*te-ku* 'V-CON-come'. Theoretical research such as Nakatani (2008, 2013) and Hidaka and Arai (2012), on the other hand, has presented formalization of the semantics of the motion verb as the full verb and as the -*te* converbalized form. Meanwhile, historical research (e.g. Lin 1996, Kojima 2001, Shibatani & Chung 2007) has discussed the difference in productivity of the infinitival V-*yuk* 'V-go' when Old/Middle Japanese and Modern Japanese are compared, arguing that the infinitival form used to be productive in the former while becoming less productive in the latter as -*te* conjunctive form increases. What can be assumed from these previous studies is shown in Table 1. It implies that the infinitival form seems to have been replaced by the -*te* conjunctive form in the grammaticalization process, thereby it becoming less productive in Modern Japanese. Thus, the forms in which the Japanese *yuk* 'go' involves, *yuk* 'go', V-*yuk* 'V-go', and V-*te-yuk* 'V-CON-go', have been the focus of attention by a number of linguists.

It seems likely, at first glance, that no other issues remain when it comes to the Japanese motion verb in question. A closer review of the previous studies, however, raises three remaining problems as briefly described below. Firstly, the interrelationship among the

Table 1: An overview of the grammaticalization of Japanese *yuk* 'go'.

Old/Middle Japanese	Modern Japanese
yuk	***yuk/ik***
V-*yuk* (productive)	**V-*yuk*** (less productive)
V-*te-yuk* (less productive)	**V-*te-yuk/ik*** (productive)

full-verb *yuk* 'go', the infinitival V-*yuk* 'V-go', and the *-te* conjunctive V-*te-yuk* 'V-CON-go' has not been fully explained *in the context of grammaticalization*. An unresolved question is what made the infinitival form replaced by the *-te* conjunctive form; the replacement must have been caused by some motivations, then what are they? Although this question seems to be the key to accounting for the replacement occurring in the grammaticalization of the Japanese motion verb concerned, few researchers have addressed this problem thus far, to the best of my knowledge. Secondly, the characteristics of the infinitival form remain unknown as well. As far as the replacement of the form by the *-te* conjunctive form is concerned, it is reasonable to assume that these two forms perhaps have some common properties, yet it is unknown whether they are semantic or syntactic at this time. Further research is needed for the infinitival form so as to find out its characteristics *per se*; it is speculated that a close examination of the form may provide some clues to relating its replacement by the *-te* conjunctive form. What also remains unaddressed by the previous studies is the morphophonological change which the *-te* conjunctive form, V-*te-yuk* 'V-CON-go', undergoes in present-day Japanese, namely the phonetic reduction resulted in the linguistic variation (V-*te-ik* versus V-*te-k*). In fact, the reductive change was already observed in *Edo-go*, a dialect spoken in the metropolitan area in the late nineteenth century and which is the foundation of the Tokyo dialect in present-day Japanese, according to Matsumura (1998). In spite of this, little attention has been paid to the morphophonological change in the literature, and thus what underlies this change—or a linguistic variation, synchronically speaking—remains unknown. To capture the whole process of grammaticalization concerning the Japanese motion verb, the last question needs to be studied as well as the first two problems. These three remaining questions are what made me embark on the present study.

Now, what methodologies I should employ in order to address these remaining issues? As I have mentioned in the preceding paragraph, all of these issues relate to the grammaticalization process of the motion verb in question. Grammaticalization, which is often defined as "the process whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and, once grammaticalized, continue to develop new grammatical functions" (Hopper & Traugott 2003: p. xv), has been examined from a variety of perspectives in the literature. The mainstream methodology taken by the grammaticalization studies is a descriptive or functional framework (see Hopper and Traugott (2003) and the references therein). These studies have not only identified phenomena in grammaticalization in many languages but also given detailed accounts of those phenomena. A series of analyses by Ian Roberts and Anna Roussou (e.g. Roberts & Roussou 1999, Roberts & Roussou 2003, Roberts 2010) offer a formal explanation for the process of a lexical word becoming grammaticalized and an already-grammaticalized form undergoing further grammaticalization. Resting mainly on the framework of the Minimalist Program (Chomsky 1995), their analyses are successful especially in elucidating the motivations for making a lexical word become a grammatical morpheme. Formal-semantic analyses have been presented as well by, for example, von Fintel (1995) and Eckardt (2007) in light of the role of semantics in making a lexical item grammaticalize, as Eckardt (2007: 4) states: "*semantic reanalysis* [*sic*] is at the heart of the most instances of grammaticalization." The interplay between semantic change and syntactic reanalysis in grammaticalization is also an important issue to be addressed when one looks into the historical process (Eckardt 2007: 3). Given the remaining issues under discussion and the methodologies employed in the previous studies on grammaticalization, I decided to use both a formal analysis and an analysis based on quantitative evidence in the present study; the former is for addressing the first two problems and the latter is for examining the third problem mentioned above.

For the formal analysis, the framework of Pustejovsky's (1995) Generative Lexicon is employed, because it can handle not only the semantics of a lexical item but also the interplay between the semantics and the syntax of the item, that is, the formal-semantic theory gives accounts of which elements in the semantics links to those in the syntactic structure, directly or indirectly. In this respect, I submit that this formal framework can be plausible for elucidating the interrelationship among the three forms involved in the grammaticalization of Japanese *ik* 'go' from a syntactic perspective as well as a semantic perspective. This in turn can provide an in-depth explanation for the historical process of the motion verb in question. On the other hand, what causes the morphophonological change in the *-te* conjunctive form can be accounted for by examining this phenomenon with quantitative

evidence. For this reason, I employ the methodology used in Variationist Sociolinguistics for the third remaining issue. Given the fact that the referential value of the *-te* conjunctive form never changes regardless of phonetic reduction (consider (2)), this phenomenon follows the definition of a linguistic variable, which is spelled out as "two or more ways of saying the same thing" (Labov 1972). The quantitative reasoning in this line of research has brought many insights into linguistic studies; particularly, the variationist framework has accounted for how the individual's linguistic performance is constrained not only by purely-linguistic factors but also by extra-linguistic ones such as gender, geography, community, and so on (see Tagliamonte (2012) for a comprehensive coverage of the framework). Owing to the meaning being equivalent between the two variants in the morphophonological change in question, it is not the qualitative, formal analysis but the quantitative, variationist analysis that can be suitable to examine the phenomenon in order to find out its causes. Thus, this framework is used for this issue. Looking differently, I submit that the variationist analysis cannot give a detailed account of the semantics and the syntax of the three forms under discussion; it seems possible for the quantitative framework to offer an inductive explanation for the grammaticalization process in question, but it cannot account for the first two issues—the motivations for V-*yuk* 'V-go' having been replaced by V-*te*-*yuk* 'V-CON-go', for example—, because these issues can be accounted for deductively. In short, a quantitative analysis can, for example, identify the environment facilitating grammaticalization and follow the trajectory of the historical process; however, it is a qualitative analysis, the one which looks into the formal aspects of a lexical item (i.e. semantics and syntax), that can explain the rationale behind the historical process. In other words, these two different frameworks work in a mutually complementary manner, and this is particularly important to the present study. Approaching to the grammaticalization of Japanese *ik* 'go' from these two standpoints can shed a new light not only on this particular phenomenon but also the studies on grammaticalization at large.

This dissertation is organized as follows. To begin with, in Chapter 2, I review previous research on Japanese *yuk* (/*ik*) 'go' and the forms in which the verb appears, namely the infinitival form, V-*yuk* 'V-go', and the *-te* conjunctive form, V-*te*-*yuk* (/V-*te*-*ik*) 'V-CON-go'. Although the motion verb in question seems to have been studied quite extensively at first glance, I raise three problems remaining in the literature when one revisits the previous studies on these three forms from the standpoint of grammaticalizaiton.

Chapter 3 introduces the hypothesis about the grammaticalization process of the Japanese motion verb which I formulate for the present study and the frameworks which I employ

in order to elucidate the historical process. The present study rests on two different frameworks of approaching to language, the theory of Generative Lexicon (Pustejovsky 1995), a formal-semantic approach, and Variationst Sociolinguistics (e.g. Labov 1972, Tagliamonte 2012), a corpus-based approach. The basic semantic representation and data which are used for this study, as well as the reasons why I use these two frameworks, are explained in this chapter. Note that, as far as the historical origin of the motion verb is concerned, from this chapter and henceforth, I will call the three verbal forms in question as follows: *yuk* for the full-verb *ik* 'go', V-*yuk* for the infinitival V-*yuk* 'V-go', and V-*te-yuk* for the *-te* conjunctive V-*te-ik* 'V-CON-go', respectively.

In Chapter 4, by using the framework of Generative Lexicon Theory, I present a formal analysis of the grammaticalization process of the Japanese motion verb under study; the question of how the infinitival and the *-te* conjunctive forms have evolved from the full-verb *yuk* 'go'—and the characteristics of the infinitival form as a closely-related issue—are discussed. I argue for *renewal* in explaining the replacement of the infinitival form by the *-te* conjunctive form, and that the correspondence between these two forms in both the semantic and the syntactic levels is what motivates such a displacement.

Next, in Chapter 5, I turn to a corpus-based analysis of the morphophonological change which the *-te* conjunctive form experiences in present-day Japanese, the linguistic variation between V-*te-ik* and V-*te-k*. Although little attention has been paid to the reductive change in the literature on the Japanese motion verb in question, this phenomenon suggests that the *-te* conjunctive form is at the most advanced stage of grammaticalization. I argue that this reductive change is conditioned by both linguistic and extra-linguistic factors, as has generally been assumed for language variation and change in the framework of Variationist Sociolinguistics. Together with Chapter 4, I aim for a comprehensive elucidation of the grammaticalization process of Japanese *ik* 'go', from the full-verb *yuk* 'go' to the infinitival V-*yuk* 'V-go' and to the *-te* conjunctive V-*te-yuk* 'V-CON-go', and of the phenomenon indicative of further grammaticalization, the phonetic reduction observed in the *-te* conjunctive form (V-*te-ik* versus V-*te-k*).

Chapter 6 is for discussing the validity of the renewal process which I propose for explaining the transition from the infinitival V-*yuk* 'V-go' to the *-te* conjunctive V-*te-yuk* 'V-CON-go' in the grammaticalization process. I argue that the core of the process, the semantic-syntactic correspondence between the former and the latter, is upheld by syntactic evidence showing the difference in the morphological integrity of *te* and *yuk* 'go' between the transitional meaning and the aspectual meaning which the *-te* conjunctive form denotes.

Furthermore, I give a detailed account of what underlies the head-movement in the transitional use and its suppression in the aspectual use of the infinitival V-*yuk* 'V-go' and the *-te* conjunctive V-*te-yuk* 'V-CON-go', proposing two syntactic features, the case-assignment feature and the point-of-view feature, for the motion verb in question. I discuss the connection of these two syntactic features to the qualia in semantics, and maintain that the former connects to the CONST quale while the latter is ascribed to the FORMAL quale, respectively. In the meantime, following Roberts and Roussou (2003), I look into the qualia in relation to the logical-/non-logical distinction in meaning which plays a role in making a lexical item grammaticalize, arguing that the FORMAL quale is the logical meaning whereas the CONST quale is identified as the non-logical meaning of the verb under study. I also argue that such distinction in qualia and their connection to the respective syntactic feature result in the head-movement and its suppression assumed when the infinitival V-*yuk* 'V-go' and the *-te* conjunctive V-*te-yuk* 'V-CON-go' denote different meanings. Lastly, I discuss the theoretical consequences of the present study—mainly about implications of the formal analysis—by examining other directional expressions, *ku* 'come' and *kure*/*age* 'give' and their *-te* conjunctive forms, V-*te-ku* 'V-CON-come' and V-*te-kure*/*-age* 'V-CON-give'.

Chapter 7 concludes this dissertation with emphasizing the advantages of the present study and remarks about further research.

Chapter 2 Previous Research and Locus of Problems

Previous research on *ik* 'go', a motion verb in Japanese, has been conducted from descriptive, theoretical, and historical perspectives. Firstly, descriptive research examines the meanings of *ik* 'go' as a main verb and V-*te*-*ik* 'V-CON-go', the *-te* converbalized form of *ik* 'go', as well as ambiguity in the latter (Morita 1968; 1994, Yoshikawa 1976, Kuno 1978, Teramura 1984, Imani 1990, Yoshida 2012, and many others). Secondly, theoretical research analyzes the semantics of the full-verb *ik* 'go' and that of V-*te*-*ik* 'V-CON-go' by using frameworks such as Generative Lexicon (Pustejovsky 1995), and gives formal accounts of the derivational process from the full verb to the *-te* conjunctive form (Nakatani 2004; 2008; 2013, Hidaka & Arai 2012). Thirdly, historical research looks into the difference in productivity of V-*yuk* 'V-go', the infinitival form which seems to have been in the midst of development from *ik* 'go' to V-*te*-*ik* 'V-CON-go', and gradience in the *-te* converbalized form V-*te*-*ik* 'V-CON-go' (Lin 1996, Kojima 1998; 2001, Hyakutome 2003, Shibatani 2007a; 2007b, Shibatani & Chung 2007, Tokumoto 2009). Previous research on *ik* 'go' from these diverse viewpoints has made substantial contributions toward understanding the characteristics of the verb and its related forms, V-*yuk* 'V-go' and V-*te*-*ik* 'V-CON-go'.

In this chapter, I will first make a review of these previous studies, summarizing their arguments into the following five points: i) the deictic property of *ik* 'go' and the difference from *ku* 'come' (Section 2.1), ii) auxiliarization of *ik* 'go' and ambiguity in V-*te*-*ik* 'V-CON-go' (Section 2.2), iii) formal accounts of the semantics of *ik* 'go' and that of V-*te*-*ik* 'V-CON-go' as well as the syntax of V-*te*-*ik* 'V-CON-go' (Section 2.3), iv) the difference in productivity of V-*yuk* 'V-go' in history (Section 2.4), and v) gradience in the *-te* converbalized form V-*te*-*ik* 'V-CON-go' (Section 2.5). In Section 2.6, I will clarify the research questions which the present study addresses, raising three remaining problems in the literature.

2.1 Deictic Property of *ik* 'go' and Differences from *ku* 'come'

The first argument on *ik* 'go' in the literature is about its deictic property and how *ik* 'go' differs from *ku* 'come' in Japanese. Both *ik* 'go' and *ku* 'come' are motion verbs in the language which express physical movement of a person or a thing in a sentence, and at a minimum they require two arguments: the subject undergoing movement, usually marked

by the nominative-case marker *ga*, and the destination or goal of the movement, which is marked by *ni/e* 'to' (Morita 1968: 75).[1] Unlike other verbs in the language (e.g. *hasir* 'run', *aruk* 'walk', *kaer* 'return', *dekake* 'leave', *okur* 'send', etc.), *ik* 'go' and *ku* 'come' are regarded as one kind of deictic expression, since movement denoted by *ik/ku* 'go/come' has a certain directionality relative to the speaker's location while other verbs are neutral in this respect (Morita 1968: 75). This is exemplified by the contrast in grammaticality of (3a,b).

(3) a. *Watasi-wa gakkoo-ni *arui-ta/ *hasit-ta/ *kaet-ta.*
I-TOP school-DAT walk-PAST/run-PAST/return-PAST
'I walked/ran/returned to school.'

(based on Imani (1990: (2)))

b. *Watasi-wa gakkoo-ni it-ta/ki-ta.*
I-TOP school-DAT go-PAST/come-PAST
'I went/came to school.'

Morita (1968, 1994) illustrates by (4a,b) the directionality relative to the speaker's location which *ik/ku* 'go/come' denotes. Supposing that A is a person or a thing undergoing movement and A moves from Point A, where A locates, to Point B, the speaker puts herself in the position of A in the case of *ik* 'go' as in (4a), whereas she stands on the side of B in the case of *ku* 'come' as in (4b) (Morita 1968: 75).

(4) a. *A-ga B-e ik-u.*
A-NOM B-DAT go-PRES
'A goes to B.'

b. *A-ga B-e kur-u.*
A-NOM B-DAT come-PRES
'A comes to B.'

(Morita 1968: 75)

(4a,b) suggest that the choice between *ik* 'go' and *ku* 'come' is determined by on which position the speaker's point of view is put. In other words, *ik* 'go' is used to denote movement from the speaker toward a non-speaker, whereas *ku* 'come' is used to denote movement in

[1] *Ik/ku* 'go/come' can take other elements in addition to these two aruguments as well, for example, an argument marked by *de* 'by', which denotes means of movement. Still, the two arguments, the subject and the goal of movement, are the mostly-required ones for the motion verbs in question. See Ogino, Kobayashi, and Isahara (2003) and Ogino and Kobayashi (2003) for quantitative evidence of the valency property of Japanese verbs.

the opposite direction: movement from a non-speaker toward the speaker (Morita 1968: 75). In Oe's (1975) terms on the basis of the theory of deixis by Fillmore (1972), *ik* 'go' denotes that the speaker or someone else moves from the speaker's "home-base" while the speaker is at the starting point of the movement and views the movement. In the case of *ku* 'come', on the other hand, the speaker is at her home-base (i.e. the arriving point of movement) and views someone moving toward her home-base (Oe 1975: 45). There is fairly general agreement on such a difference in deicticity between *ik* 'go' and *ku* 'come' in the literature (Morita 1968; 1994, Oe 1975, Yoshikawa 1976, Teramura 1984, Imani 1990, Takubo 1990, Yoshida 2012, and many others).

The speaker's point of view involved in choosing between *ik* 'go' and *ku* 'come' is explained by the term "empathy" in Kuno (1978). Empathy, which is equivalent to the notion of the camera angle in Kuno and Kaburaki (1977), is the speaker's identification with x, a person or a thing that participates in the event or state that the speaker describes in a sentence. The speaker's empathy with x, E(x), may vary in degree ranging from 0 to 1 (E(x) is 0 when the speaker does not identify herself with x at all, and E(x) is 1 when the speaker identifies herself with x completely). Also, the degree of the speaker's empathy is determined comparatively when there is more than one candidate with whom the speaker can identify herself in a sentence; for example, E(x) > E(y) shows that the degree of the speaker's empathy with x is greater than that with y (Kuno 1987: 206). According to Kuno (1978), in the case where the speaker is not the agent of movement, choosing between *ik* 'go' and *ku* 'come' is largely dependent on which protagonist in a sentence the speaker empathizes with to a greater degree. Specifically, *ku* 'come' is chosen if the speaker's empathy is greater with the person who is at the arriving point of movement than with the person undergoing movement or the person who is at the starting point of movement (E(the person at the arriving point) > E(the agent of movement, the person at the starting point)). Otherwise, *ik* 'go' is chosen (E(the agent of movement, the person at the starting point) ≥ E(the person at the arriving point)) (Kuno 1978: 253–254). Kuno (1978) illustrates this difference with the examples like (5a,b).

(5) a. *Taroo-ga kinoo koko-ni ki-ta/ *it-ta.*
Taroo-NOM yesterday here-DAT come-PAST/go-PAST
'Taro came/ *went here yesterday.'

b. *Taroo-wa kinoo koko kara sikenzyoo-ni (*)ki-ta/it-ta.*
Taro-TOP yesterday here from test.site-DAT come-PAST/go-PAST
'Taro *came/went to the test site from here.'

(Kuno 1978: 254)

Imagine that in (5a,b) the speaker is at the arriving point of movement when these sentences were uttered and the activity (i.e. movement) took place. In this context, for (5a), only *ku* 'come' is acceptable because the empathy relationship of *ku* 'come' (E(the speaker) > E(Taro)) is in association with Speech Act Empathy Hierarchy (E(speaker) > E(others)); *ik* 'go' is unacceptable due to the mismatch between the verb's empathy relationship (E(Taro, X) > E(Speaker)) and Speech Act Empathy Hierarchy, which stipulates that the speaker cannot empathize with someone else more than with herself (Kuno 1987: 212). According to Kuno (1978, 1987), the empathy relationship in a sentence is formally determined by various principles. For (5b), in contrast, the speaker's point of view should be close to an individual who was in the test site as of utterance or at the moment when Taro's activity was done. In this context, *ku* 'come' turns to be unacceptable because its empathy relationship (E(an individual who is in the test site) > E(Speaker)) is incompatible with Speech Act Empathy Hierarchy. *Ik* 'go', however, is acceptable because such mismatch of empathy does not arise (Kuno 1978: 254–255).

To summarize, it has been argued that *ik* 'go' is a deictic expression which means the subject's movement from the speaker toward a non-speaker. The speaker's point of view of the verb can be placed in either the speaker herself or the one in the sentence with which she empathizes.

2.2 Auxiliarization of *ik* 'go' and Ambiguity in V-*te-ik* 'V-CON-go'

The second argument in the literature is about to what extent *ik* 'go' becomes auxiliarized when the verb appears in V-*te-ik* 'V-CON-go' as well as ambiguity in the *-te* conjunctive form. Yoshikawa (1976) argues that *ik* 'go' which appears in V-*te-ik* 'V-CON-go' does not become uniformly auxiliarized but behaves as a full verb in some contexts. He attributes such gradience in auxiliarization of *ik* 'go' in V-*te-ik* 'V-CON-go' to the semantic relationship between this directional verb and the verb which precedes the *-te* conjunctive form. Yoshikawa (1976: 199) points out the following five different types of *ik* 'go' in the *-te* conjunctive form (Table 2). According to Yoshikawa (1976: 198), as far as the semantic and grammatical property is concerned, *ik* 'go' (or *ku* 'come') in types A, B, and C behaves as a full verb rather than an auxiliary. The one in types D and E becomes auxiliarized. (6a–e) are the examples of each type.

Table 2: Five types of *ik/ku* in V-*te-ik/ku* 'V-CON-go/come'.

	Preceding V	Semantic head	Insertion	*Ik/ku* and preceding V
A	verb in general	both	OK	mutually independent
B	transitional verbs (w/o direction)	*ik/ku*	OK	preceding verbs modify *ik/ku*
C	verbs of having	ambiguous	OK	go/come as a result of the event of V
D	transitional verbs	V	NO	*ik/ku* specifies the direction
E	verb in general	V	NO	*ik/ku* denotes aspect

(Yoshikawa 1976: 199)

(6) a. Type A:

Zyotyuu-no oi-te-it-ta yuukan-o yon-de-ir-u.
maid-NOM put-CON-go-PAST evening newspaper-ACC read-CON-be-PRES
'I am reading an evening newspaper which my maid left.'

b. Type B:

Yotto-ga hasit-te-ik-u.
yacht-NOM run-CON-go-PRES
'A yacht sails away.'

c. Type C:

Hayaku deba-o mot-te-ko-i.
hurry knife-ACC have-CON-come-IMPR
'Bring a knife here right now.'

d. Type D:

Ookina momo-ga nagare-te-ki-masi-ta.
big peach-NOM flow-CON-come-HON-PAST
'A big peach floats over here.'

e. Type E:

Hitoyasumi si-te-ir-u uti-ni nemuku-nat-te-ki-ta.
a rest do-CON-be-PRES while asleep-become-CON-come-PAST
'I got drowsy as I was taking a rest.'

(Yoshikawa 1976: 199)

Yoshikawa (1976) regards *ik/ku* 'go/come' in V-*te-ik/-ku* 'V-CON-go/come' in the first three types (Types A–C) as a full verb denoting the subject's spatial movement, for the

verb in each type behaves as the semantic head.[2] It also allows an element such as particle to be inserted before *ik* 'go' in the *-te* conjunctive form (see Martin (1975: 510ff) for items which can intervene between *te* and *ik/ku* 'go/come'). For example, *ik* 'go' in *oi-te-it-ta* 'put-CON-go-Past' in (6a) denotes that the subject (the maid) went away after she brought an evening newspaper to her guest. The directional verb denotes the subject's physical movement in (6b) as well: movement of the yacht. Yoshikawa (1976) argues that *ik* 'go' in Types A and B particularly retains the full-verb status, because the directional verb in these types is semantically independent from the preceding verb in Type A, and the preceding verb modifies *ik* 'go' in Type B. In Type C as in (6c), the directional verb downgrades to an auxiliary to some extent because both the preceding verb and *ik* 'go' may behave as semantic heads in V-*te-ik* 'V-CON-go' of this type.

In contrast, *ik* 'go' in V-*te-ik* 'V-CON-go' which is classified as Types D or E behaves more like an auxiliary, considering lexical integrity and semantic headness in the *-te* conjunctive form; no element can intervene between *te* and *ik* 'go' and the directional verb no longer functions as the semantic head in V-*te-ik* 'V-CON-go' of these types. Looking more closely, Yoshikawa (1976) points out further gradience between Types D and E, arguing that *ik* 'go' in V-*te-ik* 'V-CON-go' of Type E becomes most auxiliarized because it has only aspectual meaning, whereas the verb of Type D still indicates spatial movement (cf. (6d) versus (6e)). To summarize, the significance of Yoshikawa's (1976) analysis is not only indicating gradience in auxiliarization of *ik* 'go' in V-*te-ik* 'V-CON-go' but also giving a detailed account of what causes such gradience.

Gradience in auxiliarization of *ik* 'go' in V-*te-ik* 'V-CON-go' is discussed by Teramura (1984) as well. Teramura (1984) argues that there are three types of V-*te-ik/-te-ku* 'V-CON-go/come' with reference to the semantic relationship between the preceding verb and *ik/ku* 'go/come' of the form, which (7a–c) exemplify. In the first type, V-V type as in (7a), both the preceding verb and *ik/ku* 'go/come' behave as a main verb. In the second type, v-V type as in (7b), *ik/ku* 'go/come' is semantically more prominent and it is modified by the preceding verb. In contrast, the preceding verb functions as the semantic head in the third type, V-v type as in (7c). In this type, *ik/ku* 'go/come' reduces to a secondary component which specifies directionality of the event denoted by the preceding verb.

(7) a. V-V type: juxtaposition of V and *ik/ku* 'go/come'

Tukare-ta kara tyotto koohii-o non-de-kur-u.
be tired-PAST because just coffee-ACC drink-CON-come-PRES
'I go out for a cup of coffee because I feel tired.'

[2]The criterion for "semantic head" is not clearly stated in Yoshikawa (1976).

b. v-V type: V modifies *ik/ku* 'go/come'

Gakkoo-e-wa zitensya-ni not-te-ki-mas-u.
school-DAT-TOP bicycle-by ride-CON-come-HON-PRES
'I come to school, riding my bicycle.'

c. V-v type: V is the head

Sora-ga akaruku-nat-te-ki-ta.
sky-NOM bright-become-CON-come-PAST
'The sky is brightening.'

(Teramura 1984: 157–158)

Teramura's (1984) classification is similar to the one by Yoshikawa (1976). Firstly, V-V type as in (7a) corresponds to Type A in that both the preceding verb and *ik/ku* 'go/come' are semantic heads in these types. Secondly, v-V type as in (7b) resembles to Types B and D, because the preceding verb modifies *ik/ku* 'go/come' and *ik/ku* 'go/come' specifies the direction of the event. Thirdly, V-v type as in (7c) is similar to Type E in Yoshikawa's (1976) categorization, because the preceding verb is the semantic head of these types and *ik/ku* 'go/come' behaves as an aspectual morpheme. Thus, gradience in auxiliarization of *ik* 'go' in V-*te-ik* 'V-CON-go' is one issue which has been discussed in the literature.

Ambiguity in V-*te-ik* 'V-CON-go' is another issue in the literature which many scholars have addressed. Morita (1968, 1994) discusses ambiguity in V-*te-ik* 'V-CON-go' and attributes it to lexical meaning of the verb which precedes the *-te* conjunctive form. Morita (1968, 1994) categorizes meaning of V-*te-ik* 'V-CON-go' into four types, movement, continuity, disappearance, and change in state, as shown in (8). Morita's (1968, 1994) categorization of meaning of V-*te-ik* 'V-CON-go' is similar to Yoshikawa's (1976) view. Types A to D in Yoshikawa's (1976) categorization are equivalent to (8a) in Morita's (1968, 1994) classification in that they all denote the physical movement of the subject. (8b–d) are Type E in Yoshikawa's (1976) categorization, because *-te-ik* '-CON-go' in these meanings behaves as an aspectual morpheme (Yoshikawa 1976: 200).

(8) a. Movement

i. Sequentiality of activity:

atume-te-ik 'collect-CON-go', *arat-te-ik* 'wash-CON-go', *oi-te-ik* 'put-CON-go', etc.

ii. Simultaneity of activity and movement:

okut-te-ik 'send-CON-go', *ture-te-ik* 'take-CON-go', *hakon-de-ik* 'carry-CON-go', etc.

iii. Manner of motion:

arui-te-ik 'walk-CON-go', *oyoi-de-ik* 'swim-CON-go', *hasit-te-ik* 'run-CON-go', etc.

iv. Single activity denoted as a result of compounding:

agat-te-ik 'ascend-CON-go', *ori-te-ik* 'descend-CON-go', *oti-te-ik* 'fall-CON-go', etc.

b. Continuity:

iki-te-ik 'live-CON-go', *kurasi-te-ik* 'live-CON-go', *tae-te-ik* 'endure-CON-go', etc.

c. Disapperance:

usinaw-are-te-ik 'lose-PSSV-CON-go', *kie-te-ik* 'disappear-CON-go', *sin-de-ik* 'die-CON-go', etc.

d. Change in state:

ake-te-ik 'dawn-CON-go', *usurai-de-ik* 'fade-CON-go', *otitui-te-ik* 'calm-CON-go', etc.

(Morita 1994)

Another classification of V-*te-ik* 'V-CON-go' is proposed by Imani (1990), pointing out two different patterns of the *-te* conjunctive form, Pattern A and Pattern B, based on directionality of the preceding verb. Imani (1990) further argues that *-te-ik* '-CON-go' used in Pattern A denotes movement, while the *-te* conjunctive form in Pattern B has aspectual meaning. In Pattern A, adjunction of *-te-ik* '-CON-go' to the preceding verb is optional because the verb itself signifies directionality away from the speaker. For example, since *okur* 'send' is a directional verb, adjunction of *-te-ik* '-CON-go' to the verb is optional. When it is added, *okut-te-ik* 'send-CON-go' can mean sequential events, in which books are to be sent from the speaker to her friend one after another (see (9a,b)). In Pattern B, in contrast, adjunction of *-te-ik* '-CON-go' is obligatory because the preceding verb lexically does not entail directionality. Compare (10a) and (10b). (10a) is ungrammatical because *aruk* 'walk' is not a directional verb. (10b), on the other hand, is a grammatical sentence because *-te-ik* '-CON-go' adds directionality to the verb's event so that *arui-te-ik* 'walk-CON-go' expresses the subject's movement toward her destination.

(9) Pattern A:

a. *Watasi-wa tomodati-ni hon-o okut-ta.*
I-TOP friend-DAT book-ACC send-PAST
'I sent a book to my friend.'

b. *Watasi-wa tomodati-ni hon-o okut-te-it-ta.*
I-TOP friend-DAT book-ACC send-CON-go-PAST
'I sent books to my friend one after another.'

(Imani 1990: 55)

(10) Pattern B:

a. * *Watasi-wa gakkoo-ni arui-ta.*
I-TOP school-DAT walk-PAST
'I walked to school.'

b. *Watasi-wa gakkoo-ni arui-te-it-ta.*
I-TOP school-DAT walk-CON-go-PAST
'I walked to school.'

(Imani 1990: 55)

Imani (1990) attributes the above-mentioned differences in V-*te-ik* 'V-CON-go' to the verb which precedes the *-te* conjunctive form, and discusses that the preceding verb determines the meaning of this *-te* conjunctive construction. According to Imani (1990), V-*te-ik* 'V-CON-go' which belongs to Pattern A denotes movement, as exemplified by (11), and the *-te* conjunctive form in Pattern B denotes successive events, simultaneous events, state change, and a continuous event, as in (12a–d).

(11) Pattern A: Movement

Watasi-wa tomodati-ni hon-o okut-te-it-ta.
I-TOP friend-DAT book-ACC send-CON-go-PAST
'I sent books to my friend one after another.'

(12) Pattern B:

a. Successive events

Bitamin zai-o non-de-it-ta node genki-daroo.
vitamin pill-ACC drink-CON-go-PAST because fine-would
'[He] would be fine because he took vitamin pills.'

b. Simultaneous events

Hasit-te-it-ta node moosugu tuku-daroo.
run-CON-go-PAST because soon arrive-would
'[He] will arrive in a few minutes because he went running.'

c. State change

Sinsoo-ga akiraka-ni nat-te-it-ta.
truth-NOM clear-to become-CON-go-PAST

'The truth was brought to light.'

d. A continuous event

Karera-wa dentoo-o mamot-te-it-ta.
they-TOP tradition-ACC protect-CON-go-PAST
'They were preserving their traditions.'

(adapted from Imani (1990) with some modifications)

Moreover, Imani (1990) observes that V-*te-ik* 'V-CON-go' can become ambiguous, depending on the preceding verb.[3] As an example of ambiguity in meaning within Pattern B, Imani (1990) describes that *arui-te-ku-ru* 'walk-CON-come-PRES' can be construed as successive events in (14a) and as simultaneous events in (14b), as Teramura (1984) points out. Ambiguity also appears between Pattern A and Pattern B as in (13e). Imani (1990: 64) describes that *not-te-ik-u* 'ride-CON-go-PRES' in (15a) denotes that the subject moves while getting on a car. In contrast, (15b) denotes movement due to its sequential interpretation.

(13) a. Movement → Successive events

b. Simultaneous events → Successive events

c. All meanings (except some types of state change) → A continuous event

d. Successive events ↔ Movement

e. Some types of simultaneous events → Movement

(Imani 1990: 63)

(14) a. *Maiasa kaisya-e arui-te-ku-ru.*
every.morning office-DAT walk-CON-come-PRES
'[I] walk to my office every morning.'

b. *Tukare-ta kara tyotto sonohen-o arui-te-ku-ru.*
be tired-PAST because a little there walk-CON-come-PRES
'[I] go for a short walk around there because I am tired.'

(Teramura 1984: 157)

(15) a. *Kare-wa kyoo-wa kuruma-ni not-te-it-ta.*
he-TOP today-TOP car-on ride-CON-go-PAST
'Today, he went out, taking his car.'

[3] "X → Y" in (13) shows that if X stands, so does always Y.

b. *Kare-wa sinsya tenzikai-de tugitugito kuruma-ni not-te-it-ta.*
he-TOP brand-new car show-at repeatedly car-on ride-CON-go-PAST
'He tests brand-new cars one after another at the motor show.'

(Imani 1990: 64)

As has been reviewed in this section, previous scholars in the literature put emphases on describing the meaning denoted by the full-verb *ik* 'go' and the *-te* conjunctive form V-*te-ik* 'V-CON-go'. They also have addressed the ambiguity in the latter form and argued that what makes V-*te-ik* 'V-CON-go' ambiguous is the lexical meaning of the verb which precedes the form.

2.3 Formal Analyses of *ik* 'go' and V-*te-ik* 'V-CON-go'

The third argument in the literature is from the theoretical point of view. Its discussion focuses on explaining the semantics of *ik* 'go' and that of its *-te* convervalized form, V-*te-ik* 'V-CON-go', as well as considering the syntactic structure of the latter. Close examination on these issues has been presented by Nakatani (2004, 2008, 2013) in his series of studies on the V_1-*te*-V_2 predicates in Japanese. Using the framework of Generative Lexicon (Pustejovsky 1995), he gives formal-semanticist accounts of the semantics of the V_1-*te*-V_2 predicates at large (e.g. V-*te-i/-ar* 'V-CON-be', V-*te-ku* 'V-CON-come', V-*te-ik* 'V-CON-go', V-*te-age/-kure* 'V-CON-give', etc.). He also examines the syntax of the V_1-*te*-V_2 predicates from the Minimalist framework (Chomsky 1995). Hidaka and Arai (2012), on the other hand, seeks to make a more elaborate explanation about the derivational process of V-*te-ik* 'V-CON-go' from the full-verb *ik* 'go' by proposing a different semantic representation from the one by Nakatani (2004, 2008). These theoretical analyses of *ik* 'go' and V-*te-ik* 'V-CON-go' have all been done from a synchronic perspective, and they have elucidated the semantics and the syntax of these verbal forms.

To begin with, I review the semantic analysis of *ik* 'go' and V-*te-ik* 'V-CON-go' presented by Nakatani (2004, 2008, 2013). By drawing a comparison between two motion verbs in Japanese, *ik* 'go' and *ku* 'come', Nakatani (2004, 2008, 2013) indicates the semantic differences between them in terms of the following three properties: i) directionality relative to the speaker location, ii) entailment of the reaching event, and iii) lexical encoding of the departure event (Nakatani 2013: 199–207). Assuming that the semantics of the V_1-*te*-V_2 predicates is compositionally computed from its parts, he predicts that the semantic differences between the full-verb *ik* 'go' and *ku* 'come' should be reflected in their *-te* converbalized forms, V-*te-ik/ku* 'V-CON-go/come'. What are the semantic differences between *ik* 'go' and *ku* 'come', and how is the semantics of V-*te-ik/ku* 'V-CON-go/come' computed?

Firstly, Nakatani (2013) argues that directionality does not wholly explain the semantics of V-*te-ik/ku* 'V-CON-go/come', considering the theme-eventified cases in which the *-te* conjunctive predicate combines with a verb which is neutral in directionality. He sees that the difference in directionality between *ik* 'go' and *ku* 'come', movement toward the speaker or a non-speaker, is crucial, and it accounts for the contrast in grammaticality between (16a) and (16b). Only *tikazuite ki-ta* 'get_closer-CON come-PAST' is acceptable in (16a) because *tikazuk* 'to get closer' semantically conflicts with *ik* 'go', a verb denotes movement toward a non-speaker. In (16b), in contrast, only *toozakat-te it-ta* 'get_farther-CON go-PAST' is acceptable because the semantics of *toozakar* 'to get farther' is compatible with that of *ik* 'go', but not with *ku* 'come' which denotes movement toward the speaker (Nakatani 2013: 200).

(16) a. *Umi-ga tikazui-te ki-ta/ *it-ta.*
ocean-NOM get_closer-CON come-PAST/ *go-PAST
'The ocean was coming closer.'

b. *Umi-ga toozakat-te *ki-ta/it-ta.*
ocean-NOM get_farther-CON *come-PAST/go-PAST
'The ocean was fading away.'

(Nakatani 2013: 200)

Based on this constrast, it is predicted that both *ik* 'go' and *ku* 'come' should be acceptable when a preceding verb of V-*te-ik/ku* 'V-CON-go/come' is neutral in directionality. Awkwardness in (17b) and (18b), however, shows that directionality is not always explanatory in figuring out the semantics of V-*te-ik/ku* 'V-CON-go/come' (Nakatani 2013: 200). He argues, in the theme-eventified cases (i.e. no physical movement of the subject is involved) such as (17) and (18), that there seems to be no reason for downgrading *okut-te it-ta* 'send-CON go-PAST' and *kake-te it-ta* 'place-CON go-PAST' in (17b, 18b) while keeping *okut-te ki-ta* 'send-CON come-PAST' and *kake-te ki-ta* 'place-CON come-PAST' in (17a, 18a) acceptable, since both *(tegami-o) okur* 'send a letter' and *(denwa-o) kake* 'give a call' themselves do not entail any specific directions. However, (17b, 18b) turn to be acceptable when an adverbial *tugitugito* 'one after another' is added, shown in (19a,b) (see also Imani (1990)).

(17) a. *Taroo-wa tegami-o boku-ni okut-te ki-ta.*
Taro-TOP letter-ACC I-DAT send-CON come-PAST
'Taro sent a letter to me (while staying where he was).'

b. ??*Boku-wa tegami-o Taroo-ni okut-te it-ta.*
I-TOP letter-ACC Taro-DAT send-CON go-PAST

(Intended: 'I sent a letter to Taro (while staying where I was).')

(Nakatani 2013: 200)

(18) a. *Taroo-wa denwa-o boku-ni kake-te ki-ta.*
Taro-TOP telephone-ACC I-DAT place-CON come-PAST
'Taro gave me a call (while staying where he was).'

b. ??*Boku-wa denwa-o Taroo-ni kake-te it-ta.*
I-TOP telephone-ACC Taro-DAT place-CON go-PAST
(Intended: 'I gave Taro a call (while staying where I was).')

(Nakatani 2013: 200)

(19) a. *Boku-wa tomodati-ni tugitugito tegami-o okut-te it-ta.*
I-TOP friends-DAT one_after_another letter-ACC send-CON go-PAST
'I sent a letter to friends of mine, one after another.'

b. *Boku-wa tomodati-ni tugitugito denwa-o kake-te it-ta.*
I-TOP friends-DAT one_after_another telephone-ACC place-CON go-PAST
'I gave friends of mine a call, one after another.'

(Nakatani 2013: 202)

Considering the examples above, Nakatani (2013) contends that the semantics of V-*te-ik/ku* 'V-CON-go/come' cannot be explained only by the difference in directionality between *ik* 'go' and *ku* 'come'. For this reason, he further examines other two properties, entailment of the reaching event and lexical encoding of the departure event.

Nakatani (2013: 202) considers entailment of the reaching event to be the critical difference between the two directional verbs apart from the difference in directionality. He argues that *ku* 'come' linguistically entails the reaching event while *ik* 'go' does not, since (20a) cannot be followed by (20b), a sentence stating that the subject did not reach her destination, whereas (21a) can be followed by (21b). Formally speaking in terms of the theory of Generative Lexicon (Pustejovsky 1995), he assumes that the reaching event is part of the FORMAL quale in the semantics of *ku* 'come', whereas it is part of the TELIC quale in that of *ik* 'go' (Nakatani 2013: 202).

(20) a. *Kare-wa koozi-genba-ni ki-ta.*
he-TOP construction-site-DAT come-PAST
'He came to the construction site.'

b. *Sikasi, totyuu-de ziko-ni makikom-are, genba-ni itar-u koto-ga deki-nakat-ta.*
'However, he couldn't reach the site because he was caught up in an accident.'

(21) a. *Kare-wa koozi-genba-ni it-ta.*
he-TOP construction-site-DAT go-PAST
'He went to the construction site.'

b. *Sikasi, totyuu-de ziko-ni makikom-are, genba-ni itar-u koto-ga deki-nakat-ta.*
'However, he couldn't reach the site because he was caught up in an accident.'

(Nakatani 2013: 202)

As for lexical encoding of the departure event, Nakatani (2013: 202–203) assumes that *ik* 'go' lexically encodes the departure event, since it is impossible for (21a) to be followed by (22). In the case of *ku* 'come', Nakatani (2013) recognizes that (20a) cannot be also followed by (22); this is because *ku* 'come' lexically encodes the reaching event and therefore the departure event is automatically entailed. He presents the following examples to illustrate that *ku* 'come' does not lexically encode the departure event. As in English (Nakazawa 2002), a temporal adverbial like *go-zi* 'five o'clock' can modify both the time of departure and the time of arrival in the case of *ik* 'go' as (23a) shows; however, the temporal adverbial can only modify the arriving time in the case of *ku* 'come' as (23b) shows. Thus, Nakatani (2013) argues that the contrast in (23a,b) shows that the departure event is lexically encoded by *ik* 'go', while not by *ku* 'come'.

(22) *Sikasi, kare-wa mada ie-ni i-ta.*
'However, he was still at home.'

(Nakatani 2013: 203)

(23) a. *Sono gakusee-wa go-zi-ni undoozyoo-ni it-ta.*
that student-TOP five-o'clock-DAT playground-DAT go-PAST
'That student went to the playground at five o'clock.'
→ 'He left at five.' or 'He arrived at five.'

b. *Sono gakusee-wa go-zi-ni undoozyoo-ni ki-ta.*
that student-TOP five-o'clock-DAT playground-DAT come-PAST
'That student came to the playground at five o'clock.'
→ 'He arrived at five.' but not 'He left at five.'

(Nakatani 2013: 203)

Based on the observations above, Nakatani (2013) proposes (24) to formally represent the semantics of the full-verb *ik* 'go'.

(24)
$$\left[\begin{array}{l} \textbf{ik `go'} \\ \lambda\mathbf{y},\mathbf{x}\text{:} \left[\begin{array}{l} \mathbf{x}\text{: }\textbf{human} \\ \mathbf{y}\text{: }\neg\textbf{speaker-territory} \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{TELIC} = \tau^{e_2}\mathbf{at}(\mathbf{e}_2,\ \mathbf{x},\ \mathbf{y}) \\ \text{FORMAL} = \tau^{e_1}\mathbf{depart}(\mathbf{e}_1,\ \mathbf{x}) \\ \text{AGENTIVE} = -- \end{array}\right] \end{array}\right]$$

(Nakatani 2013: 204)

Of the two inner brackets in (24), the upper bracket shows the argument structure of the verb in question. There are two arguments as to *ik* 'go' in Japanese: a person who moves (x) and the one who is not in the speaker's territory (y, i.e. a non-speaker). The lower bracket is the qualia structure which formally characterizes the semantics of a lexical item. In the qualia structure, the TELIC quale introduce an intensional context and specifies how the event denoted by the verb possibly ends up; the FORMAL quale introduces an extensional context and defines the formal property of the verb; the AGENTIVE quale specifies how the event denoted by the verb came into being (Pustejovsky 1995, Nakatani 2013: 170–174).[4] Additionally, Nakatani (2013) introduces τ^e, the operator representing a transition/inchoative event (see Nakatani (2013: 178–179) for its definition). The TELIC specification, $\tau^{e_2}\mathbf{at}(\mathbf{e}_2,\ \mathbf{x},\ \mathbf{y})$, represents the transition event from the state of x being in a certain position (i.e. the speaker's territory) to the state of x not being in the speaker's territory: namely, the reaching event which *ik* 'go' denotes. The FORMAL specification, $\tau^{e_1}\mathbf{depart}(\mathbf{e}_1,\ \mathbf{x})$, is interpreted as the transition event of x leaving from its original position: namely, the departing event which *ik* 'go' denotes. With the departure event in the FORMAL quale and the reaching event in the TELIC quale, (24) thus formally shows that *ik* 'go' lexically encode the departure event while it does not linguistically entail the reaching event.

Nakatani (2013: 205) considers V-*te*-*ik* 'V-CON-go' as a concatenated predicate reflecting the semantics of its full verb; thus, *ik* 'go' is more compatible with a "diffusing", open-ended event when the verb is used in V-*te*-*ik* 'V-CON-go' with its theme eventified, as in (19a,b). For the theme-eventified cases, Nakatani (2004, 2008, 2013) introduces the STRETCH function in order to state this assumption formally:

(25) STRETCH(e) in a world w is an event e' in w such that $e < e'$ and e' is either (a), (b), (c), or (d) where the choice is finalized by a higher, context-sensitive semantic

[4] Nakatani (2013) disregards the CONSTITUTIVE quale ("what x is made of"), for it is equivalent to the event structure (see Nakatani (2013: 172) for detail).

mechanism:

a. An actualization of $Q_T(e)$
b. The logical entailment of $Q_F(e)$
c. A continued stage of $Q_F(e)$
d. A pragmatic implication of $Q_F(e)$

(where $Q_T(e)$ is the TELIC and $Q_F(e)$ is the FORMAL of the qualia structure of e.)

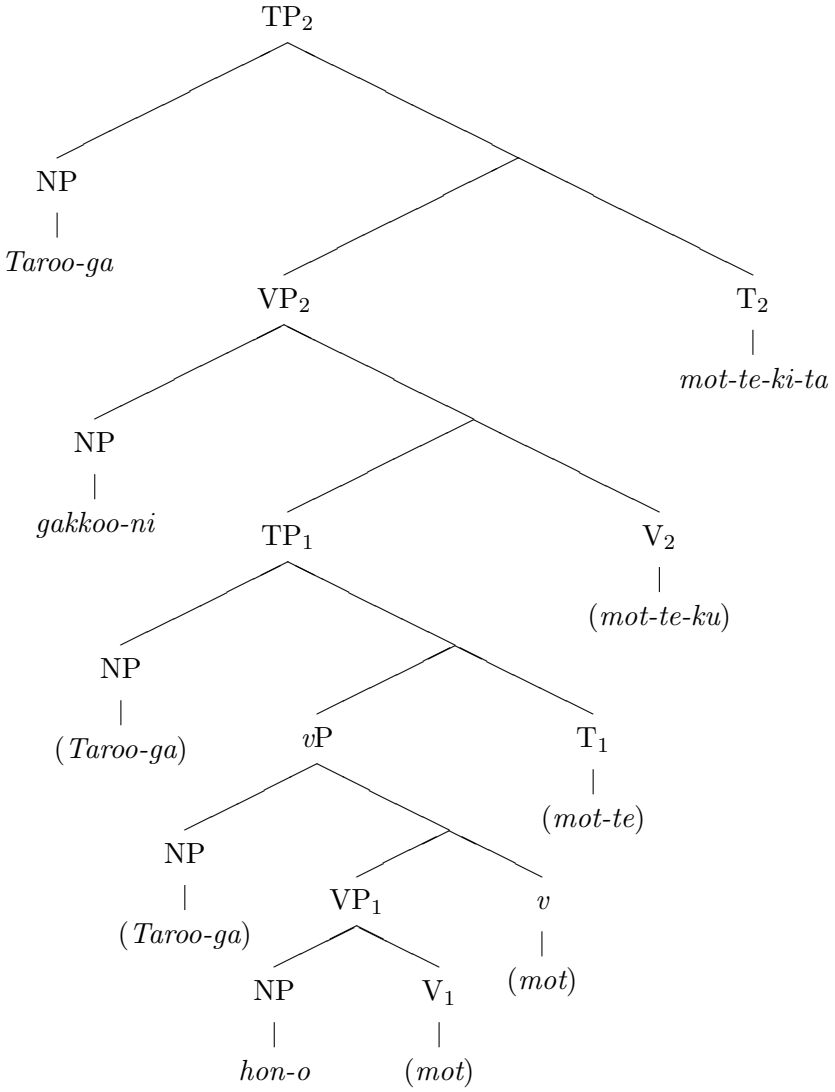
(Nakatani 2013: 196)

In his opinion, *ik* 'go' in V-*te-ik* 'V-CON-go' is more compatible with STRETCH(e) of the type (25c) since the verb denotes an inchoative, diffusing event (Nakatani 2013: 205). (17b) and (18b) becomes acceptable once an adverbial *tugitugito* 'one after another' is added, as in (19a,b), since the adverbial makes the event pluralized, turning a letter-sending or calling event, which is a converging, terminative event, to an open-ended event, more compatible with *ik* 'go'.

Not only the semantics but also the syntax of the V_1-*te*-V_2 predicate in Japanese is addressed by Nakatani (2004, 2013). Within the Minimalist framework (Chomsky 1995), he proposes a head-movement analysis of how the *-te* conjunctive predicate is derived, arguing that his analysis is better than the ones previously proposed in the literature. Nakatani (2013) gives a structure like (26b) to a sentence like (26a). The derivation proceeds as follows. First, V_1 *mot* 'hold' is merged with its complement *hon-o* 'book-ACC' and it assigns a theta role to the complement. Second, *v* is merged with VP_1 and V_1 *mot* 'hold' undergoes movement to *v*; the subject *Taroo-ga* 'Taro-NOM' is also introduced. Then, *te* is merged as the T_1 head and V_1 *mot* 'hold' moves from *v* to T_1, thereby forming *mot-te* 'hold-CON'. Now, V_2 *ku* 'come' is merged and *mot-te-ku* 'hold-CON-come' is formed as a result of *mot-te* 'hold-CON' undergoing movement from T_1 to V_2. A dative argument *gakoo-ni* 'school-DAT' is merged and *mot-te-ku* 'hold-CON-come' assigns a theta role to the argument. Lastly, the past-tense morpheme *-ta* is introduced in T_2 and *mot-te-ku* 'hold-CON-come' moves to the upper T from V_2, with the subject *Taroo-ga* 'Taro-NOM' being placed in the specifier position of TP_2 (Nakatani 2013: 124–126).

(26) a. *Taroo-ga gakkoo-ni hon-o mot-te ki-ta.*
Taro-NOM school-DAT book-ACC hold-CON come-PAST
'Taro brought the book to school.'

b.



(Nakatani 2013: 123–126)

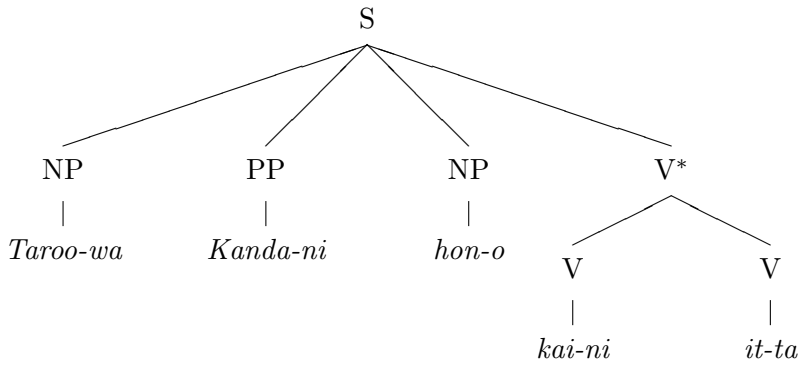
With regard to the subject of the V_1-*te*-V_2 predicate, Nakatani (2013: 136–139) considers a subject-raising analysis to be plausible in addressing the subject sharing in this type of predicate. Taking the subject-raising analysis that the external argument for V is introduced not by V itself but by *v* (Chomsky 1995, Kratzer 1996, Marantz 1997), he assumes that the matrix subject of the V_1-*te*-V_2 predicate is first introduced under *v*P because the lower predicate V_1 retains its original semantics while the upper predicate V_2 loses its agentivity (p. 138). Under this assumption, in (26b), the subject originates in the specifier position of

*v*P and is raised to the specifier position of TP_2 by way of the specifier position of TP_1.

Nakatani (2004, 2013) maintains that his head-movement analysis is better than the ones previously proposed in the literature: Matsumoto's (1996) analysis within the framework of Lexical Functional Grammar and a predicate-raising/verb-raising analysis from the perspective of Chomskyan generative grammar (e.g. McCawley & Momoi 1986). Taking an example of the V-*ni* V predicate as in (27) from Matsumoto (1996: 256), Nakatani (2013: 120–121) points out the following drawbacks in Matsumoto's (1996) analysis, shown in (28a–c): i) not addressing the mechanisms of predicate concatenation, ii) not giving a clear account of the semantics of the concatenated V-*te-ik/ku* 'V-CON-go/come' predicates in which no actual movement is involved (e.g. *okut-te-ik/ku* 'send-CON-go/come') as well as the semantics of other V_1-*te*-V_2 predicates, iii) some computational problems in his double-headed V* analysis in the constituent structure.

(27) *Taroo-wa Kanda-ni hon-o kai-ni it-ta.*
Taro-TOP Kanda-DAT book-ACC buy-to go-PAST
'Taro went to Kanda to buy a book.'

(28) a. constituent structure:



b. functional structure:

$$\begin{bmatrix} \text{PRED} & \text{'go-to-buy'} < \text{SUBJ, OBJ, OBL}_{\text{go}} > \\ \text{SUBJ} & [\text{PRED} \quad \text{'Taro'}] \\ \text{OBJ} & [\text{PRED} \quad \text{'book'}] \\ \text{OBL}_{\text{go}} & [\text{PRED} \quad \text{'Kanda'}] \end{bmatrix}$$

c. argument structure:

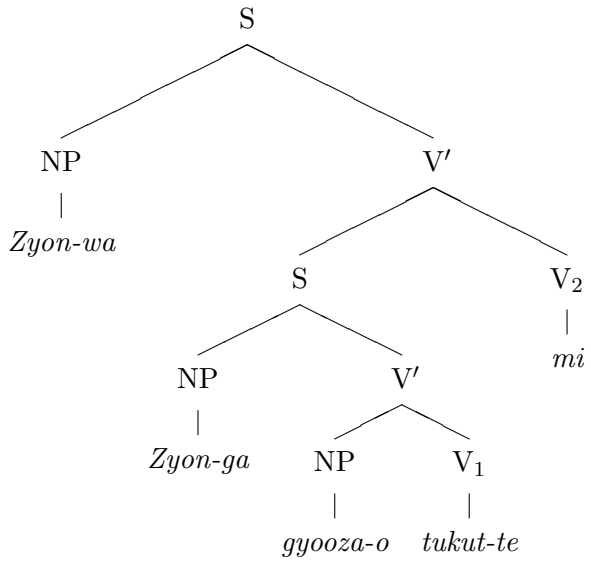
$$\begin{bmatrix} \text{PRED} & \text{'go-to-buy'} < \text{AGENT, PATIENT, GOAL} > \\ \text{AGENT} & [\text{PRED} \quad \text{'Taro'}] \\ \text{PATIENT} & [\text{PRED} \quad \text{'book'}] \\ \text{GOAL} & [\text{PRED} \quad \text{'Kanda'}] \end{bmatrix}$$

(Nakatani 2013: 120)

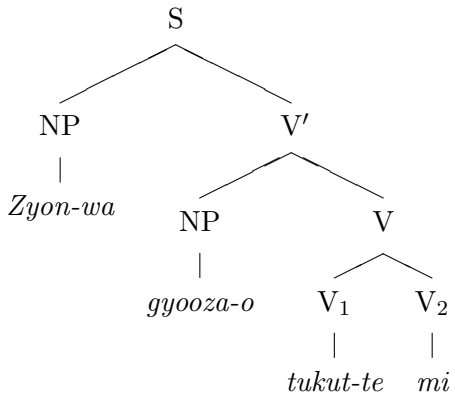
On the other hand, Nakatani (2013: 122–123) argues that the analyses from the theory of Government and Binding is problematic as well. He closely examines the verb-raising and double-motherhood analyses proposed by McCawley and Momoi (1986). In McCawley and Momoi (1986), they first propose a verb-raising analysis as in (29b–c). (29b) is a base structure while (29c) is a surface structure. In this analysis, McCawley and Momoi (1986) assume that V_1 *tukut-te* 'make-CON' is raised to V_2 *mi* 'see' and the embedded subject *Zyon-ga* 'John-NOM' is deleted by an Equi-NP deletion rule; as a result of tree-pruning, the surface structure is made. The double-motherhood analysis, on the other hand, assumes a structure such as (30). In this structure, V_1 *tukut-te* 'make-CON' projects V′ and is dominated by the matrix V at the same time; the embedded subject is deleted by an Equi-NP rule. As for these syntactic analyses, Nakatani (2013: 122–123) points out that the double-mother structure proposed by McCawley and Momoi (1986) is inexplicable by the standard theories of phrase structure, which assumes that one node cannot be immediately dominated by multiple nodes.

(29) a. *Zyon-wa gyooza-o tukut-te mi-ta.*
John-TOP dumpling-ACC make-CON see-PAST
'John tried cooking Peking dumplings.'

b.

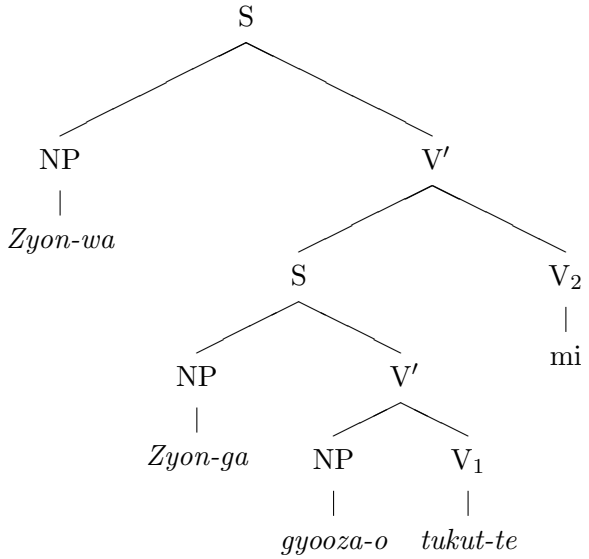


c.



(Nakatani 2013: 121–122)

(30)



(Nakatani 2013: 123)

This section has reviewed theoretical analyses on the motion verb in question. They have proposed formal representations for the semantics of the full-verb *ik* 'go' and the *-te* conjunctive form V-*te-ik* 'V-CON-go' and examined the syntax of the latter form.

2.4 Diachronic Difference in Productivity of V-*yuk* 'V-go'

The fourth argument in the literature is on the difference in productivity of V-*yuk* 'V-go' between Old and Middle Japanese and Modern Japanese (Lin 1996, Kojima 1998; 2001, Hyakutome 2003, Hyakutome & Hyakutome 2008, Shibatani & Chung 2007). According to these studies, V-*yuk* 'V-go' used to be a highly productive form in Old and Middle Japanese while it turned into unproductive in Modern Japanese; it almost disappears in colloquial speech in present-day Japanese, remaining only in written language under some limited

circumstances (Arai & Hidaka 2013a).

Specifically, numerical data presented in Lin (1996) and Hyakutome (2003) illustrate the productive nature of the infinitival form in Old and Middle Japanese. In Lin (1996), there are 81 instances of the form in Old and Middle Japanese, while the number of the form reduces to 35 in Modern Japanese (p. 19). Hyakutome (2003) presents a list of frequent verbs which appear in the second position of V-V compounds in Old and Middle Japanese. He shows that there are more than 50 instances of V-*yuk* 'V-go' in *Man'yôshû* and *Hachidaishû*, poetic texts written in Old Japanese. Their findings thus show that V-*yuk* 'V-go' was once used productively in the language.

With regard to the decrease of the infinitival form, Lin (1996) speculates that it is owing to the replacement of the form by the *-te* conjunctive form, a change from V-*yuk* 'V-go' to V-*te-ik* 'V-CON-go'. Arguments held by Kojima (1998, 2001) and Shibatani and Chung (2007) are in accord with Lin's (1996) speculation; the latter argues that V-*yuk* 'V-go' seems to have been completely replaced by the *-te* conjunctive form at least in colloquial speech by the beginning of the nineteenth century (Shibatani & Chung 2007: 29):

Table 3: Change from V-*yuk* 'V-go' to V-*te-ik* 'V-CON-go'.

Texts	Time	V-*yuk*	V-*te-ik*
Man'yôshû	755–759	52	18
Genji Monogatari	Beginning of 11th C	34	4
Kôshoku Ichidai Otoko	1682	19	23
Ukiyoburo	1809–1813	0	39

(Shibatani and Chung 2007: 29)

Therefore, it is clear based on these studies that V-*yuk* 'V-go' used to be productive and it turns to unproductive in the history of Japanese. It is an unquestionable fact that behind the decline of the infinitival form lies the emergence of V-*te-ik* 'V-CON-go'.

2.5 Gradience in V-*te-ik* 'V-CON-go'

The fifth argument in the literature is on gradience in V-*te-ik* 'V-CON-go'. This argument relates to the second perspective in previous research, which discusses auxilizarization of *ik* 'go' in the *-te* conjunctive form (Section 2.2). In that line of research, it is said that the extent to which *ik* 'go' becomes auxiliarized depends on the semantic relationship between the motion verb and the verb which precedes the *-te* conjunctive form (Yoshikawa 1976, Teramura 1984). This fact is revealed by the detailed analyses in a descriptive manner;

however, they leave one question untouched; what makes *ik* 'go' more auxiliarized when it is combined with some verbs than with others. The fifth line of research, which will be reviewed in this section, addresses this question from the grammaticalizationist viewpoint, as well as from a comparative perspective.

Shibatani (2007a, 2007b) examines the syntactic properties of V-*te-ik/ku* 'V-CON-go/come' in order to show that the grammaticalization of the motion verbs is gradient in the *-te* conjunctive construction. Shibatani (2007a, 2007b) singles out three patterns of V-*te-ik/ku* 'V-CON-go/come' and compares the syntactic properties of them with those of the full-verb *ik/ku* 'go/come'. The three patterns are i) Manner + Motion (e.g. *arui-te-ik/ku* 'walk-CON-go/come'), ii) Location change + Motion (e.g. *de-te-ik/ku* 'exit-CON-go/come'), and iii) Action + Motion (e.g. *non-de-ik/ku* 'drink-CON-go/come'). Shibatani (2007a, 2007b) selects these patterns because they contain all types which are examined in Teramura (1984), V-V type, v-V type, and V-v type (Shibatani 2007a: 31). The first pattern, Manner + Motion, corresponds to the v-V type in Teramura (1984) and nuclear coordination in Hasegawa (1996). The second pattern, Location change + Motion, is equivalent to Teramura's (1984) V-v type and Hasegawa's (1996) nuclear subordination. The third pattern, Action + Motion, is the V-V type or nuclear coordination in Teramura's (1984) or in Hasegawa's (1996) term respectively (Shibatani 2007a: 31). The degree of grammaticalization of the motion verbs in question is examined by doing the following six tests: i) *mieru* suppletion, ii) *rassyaru* truncation, iii) valency property, iv) fragments, v) contraction of V-*te-ik* 'V-CON-go' to V-*te-k*, and vi) scope of negation. Table 4 summarizes the result of these tests.

The first test, the *mieru* suppletion, shows whether or not the motion verbs in V-*te-ik/ku* 'V-CON-go/come' are replaced by an honorific expression *mieru* '(lit.) visible'. It is possible for the motion verbs to be suppleted by *mieru* '(lit.) visible' when they are used as a full verb. According to Shibatani (2007a), the replacement is possible in the Manner + Motion and in the Location change + Motion patterns but not in the Action + Motion pattern (see 31a–c). In short, the motion verbs behave more like a full verb in the first two patterns, whereas they become auxiliarized in the third pattern.

(31) a. *Yamada-sensee-wa gakkoo-ni arui-te ki-ta/mie-ta.*
Yamada-Prof.-TOP school-to walk-CON come-PAST/come.HON-PAST
'Professor Yamada walked (walk come) to school.'

b. *Yamada-sensee-ga kyoositu-ni hait-te ki-ta/mie-ta*
Yamada-Prof.-NOM classroom-to enter-CON come-PAST/come.HON-PAST
toki...
when
'When Professor Yamada came into (enter come) the classroom...'

Table 4: Summary of syntactic patterns of *ik/ku* 'go/come'.

	mieru	*rassyaru*	Valency	Fragment	Contraction	Neg. scope
Lexical *ik/ku* 'go/come'	○	×	○	○	×	N/A
arui-te-ik/ku 'walk-CON-go/come'	○	△	○	△	△	wide/narrow
de-te-ik/ku 'exit-CON-go/come'	○	○	×	×	○	wide
non-de-ik/ku 'drink-CON-go/come'	×	◎	×	×	◎	narrow

(◎=super, ○=O.K., △=grudgingly, ×=no)

(Shibatani (2007a: 38) with modification)

c. *Yamada-sensee-wa ippai non-de ki-ta/*mie-ta.*
Yamada-Prof.-TOP a.drink drink-CON come-PAST/come.HON-PAST
'Professor Yamada had a drink (and came).'

(Shibatani 2007a: (14))

The second test, the *rassyaru* truncation, corroborates the decategorization pattern of the motion verbs in V-*te-ik/ku* 'V-CON-go/come'. *Rassyaru* is the phonetically-reduced form of *irassyaru*, another honorific suppletive form of these transitional verbs. Truncation of *irassyaru* is possible in all the three combinations, with some differences in acceptability. Consider (32a–c). Truncation is totally acceptable in the Action + Motion pattern, whereas it is less acceptable in the other two patterns, the Manner + Motion type and the Location change + Motion type. Given the fact that the lexical *ik/ku* 'go/come' never allows truncation, Shibatani (2007a) claims that the motion verbs in the Action + Motion pattern is more grammaticalized than the ones in the other two patterns (Shibatani 2007a: 33).

(32) a. *Yamada-sensee-wa gakkoo-ni arui-te ki-ta/irassyat-ta/rassyat-ta.*
Yamada-Prof.-TOP school-to walk-CON come-PAST/come.HON-PAST
'Professor Yamada walked (walk come) to school.'

b. *Yamada-sensee-ga kyoositu-ni hait-te ki-ta/irassyat-ta/rassyat-ta*
Yamada-Prof.-NOM classroom-to enter-CON come-PAST/come.HON-PAST
toki...
when

'When Professor Yamada came into (enter come) the classroom...'

c. *Yamada-sensee-wa ippai non-de ki-ta/irassyat-ta/rassyat-ta.*
Yamada-Prof.-TOP a.drink drink-CON come-PAST/come.HON-PAST
'Professor Yamada had a drink (and came).'

(Shibatani 2007a: (15))

The valency property is also used to diagnose the grammatical status of *ik/ku* 'go/come' in the *-te* conjunctive form. To be specific, the motion verbs are less grammaticalized if they license a goal argument like lexical *ik/ku* 'go/come'; otherwise, they are more grammaticalized. According to Shibatani (2007a, 2007b), the Manner + Motion pattern sanctions a goal argument, while the other two patterns, Location change + Motion and Action + Motion, do not, as shown in (33a–c).

(33) a. *Taroo-wa gakkoo-e arui-te it-ta/ki-ta.*
Taro-TOP school-to walk-CON go-PAST/come-PAST
'Taro walked (walk went/came) to school.'

b. **Taroo-wa Hanako-no heya-ni zibun-no heya-o de-te it-ta.*
Taro-TOP Hanako-GEN room-to self-GEN room-ACC exit-CON go-PAST
'(lit.) Taro went out (exit went) of his room to Hanako's room.'

c. **Taroo-wa gakkoo-e ringo-o tabe-te it-ta.*
Taro-TOP school-to apple-ACC eat-CON go-PAST
'(lit.) Taro eat-went an apple to school.'

(Shibatani 2007a: (17–18))

The fourth test is to examine whether or not a fragment answer is acceptable in response to a yes-no question. When used as a full verb, the motion verbs can form a sentence fragment, as (34) exemplifies.

(34) a. *Zitensya-ni not-te gakkoo-e kita=no?*
bicycle-to ride-CON school-to come-PAST=Q
'(You've) come to school riding a bicycle?'

b. *Un, zitensya-ni not-te.*
yeah bicycle-to ride-CON
'Yeah, riding a bicycle.'

(Shibatani 2007a: (20))

For the three patterns of V-*te-ik/ku* 'V-CON-go/come', on the contrary, there is a difference in grammaticality of a fragment answer. A sentence fragment is totally ungrammatical in the Location change + Motion and the Action + Motion patterns as in (36) and (37), while it is barely allowed in the Manner + Motion pattern, as shown in (35).

(35) a. *Arui-te ki-ta=no*?
walk-CON come-PAST=Q
'(You) came walking?'

b. *?*Un, arui-te.*
yeah walk-CON
'Yeah, by walking.'

(Shibatani 2007a: (21))

(36) a. *De-te ki-ta=no*?
exit-CON come-PAST=Q
'(You) came out?'

b. **Un, de-te.*
yeah exit-CON
'Yeah, (having) exited.'

(Shibatani 2007a: (22))

(37) a. *Ippai non-de ki-ta=no*?
a.drink drink-CON come-PAST=Q
'(You) had a drink (and came)?'

b. **Un, non-de.*
yeah drink-CON
'Yeah, (having) drunk.'

(Shibatani 2007a: (23))

As the fifth test, Shibatani (2007a) presents the result of Google-based survey on the likelihood of contraction of V-*te-ik* 'V-CON-go' (Shibatani 2007a: 36–37). It is speculated that the motion verb as a main verb is morphologically autonomous, whereas it becomes less autonomous when it turns to an auxiliary. Shibatani (2007a) maintains that the motion verb in the Action + Motion pattern (e.g. *non-de-ik* 'drink-CON-go') most favors contraction, while the Manner + Motion pattern (e.g. *arui-te-ik* 'walk-CON-go') and the Location change + Motion pattern (e.g. *de-te-ik* 'exit-CON-go') do not (Table 5).

Table 5: Contraction of *ik* to *k* in V-*te-ik* 'V-CON-go'.

aruit-te-ik=to	328,000
arui-te-k=to	956
'walk-CON-go=when'	0.003%
de-te-ik=to	58,200
de-te-k=to	637
'exit-CON-go=when'	0.01%
tabe-te-ik=to	17,400
tabe-te-k=to	751
'eat-CON-go=when'	0.04%

(Shibatani 2007a: Table 6)

The sixth test to diagnose the verbal status of *ik/ku* 'go/come' in V-*te-ik/ku* 'V-CON-go/come' is to examine scope of negation. According to Shibatani (2007a, 2007b), the fact that the Action + Motion type can only have the narrow scope reading indicates that the motion verbs in this pattern turn into a suffix.

(38) a. *Daremo basu-ni not-te ko-nakat-ta.*
no one bus-to ride-CON come-NEG-PAST
'No one came riding a bus.'
(No one came on the bus = wide scope reading)
(They came but no one came by bus = narrow scope reading)

b. *Daremo heya-kara de-te ko-nakat-ta.*
no one room-from exit-CON come-NEG-PAST
'No one came out of the room.'
(No one came out = wide scope reading)
(No narrow scope reading is possible; They came but not exiting a room)

c. *Daremo gohan-o tabe-te ko-nakat-ta.*
no one meal-ACC eat-CON come-NEG-PAST
'No one had a meal (and came).'
(No wide scope reading is possible; No one came after having eaten a meal)
(They came but no one had a meal = narrow scope reading)

(Shibatani 2007a: (24))

Based on the result of these tests, Shibatani (2007a, 2007b) argues that the Manner

+ Motion type (e.g. *arui-te-ik/ku* 'walk-CON-go/come') is the least grammaticalized pattern, while the Action + Motion type (e.g. *non-de-ik/ku* 'drink-CON-go/come') is the most grammaticalized pattern. The Location change + Motion type (e.g. *de-te-ik/ku* 'exit-CON-go/come') is situated in between these two combinations, as Figure 1 shows. A Japanese-Korean comparative study by Shibatani and Chung (2007) argues that grammaticalization of the Korean counterparts such as (39a,b) follows the cline shown in Figure 1.

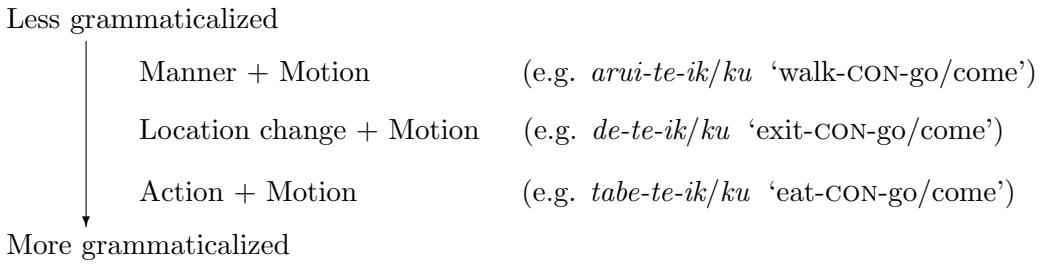


Figure 1: Cline of grammaticalization of V-*te-ik/ku* 'V-CON-go/come' in Japanese. (Shibatani (2007a: 31) with modification)

(39) a. *ne-lul cesungsaca-ka*
you-ACC messenger.of.the.other.world-NOM
ep-e-ka-taka peli-ko ka-n-ta-nun
carry.on.the.back-CON-go-on.the.way throw.away-CON go-PRES-IND
il-to.
that.thing-also
'(there is no possibility of) throwing (you) away while the messenger from the other world carries you on his back.'

b. *Na-nun ai-tul-uy phyoceng-ul hanahana ilk-e-ka-ss-ta.*
I-TOP child-PL-GEN expression-ACC one.by.one read-CON-go-PAST-IND
'I went on reading the children's expressions one by one.'

(Shibatani & Chung 2007: (2))

Close and comparative examination of the syntactic properties of V-*te-ik/ku* 'V-CON-go/come' and their Korean counterparts leads them to offer a semantic constraint, as in (40), on governing the grammaticalization pattern of the conjunctive predicates. The basis of this constraint is the notion of semantic congruity between the two events combined in the conjunctive predicates. According to Shibatani and Chung (2007), the extent to which the two events are semantically congruous is determined by the following properties listed in (41).

(40) Grammaticalization is facilitated in semantically less congruous environments.

(Shibatani 2007a: 44)

(41) a. share participants,

b. show spatio-temporal overlap,

c. causally connected as in the combinations of Motion + Purpose, Cause + Effect, Action + Result,

d. conventionally connected as in those events whose sequential occurrence is recognized as a cultural norm.

(Shibatani & Chung 2007: (23))

Of the three patterns discussed in Shibatani (2007a, 2007b) and Shibatani and Chung (2007), the events denoted in the Manner + Motion type are semantically congruous because of the shared participant and the spatio-temporal overlap in this type of event. On the other hand, the events denoted in the Action + Motion type are semantically less congruous, since the spatio-temporal overlap is non-existent in this type of event. The Location change + Motion type is located in between these two patterns, because the two events denoted in this combination is not completely overlapped as the one denoted in the Manner + Motion type (Shibatani & Chung 2007: 38).

To summarize, research from a grammaticalizationist and comparative perspective (Shibatani 2007a; 2007b, Shibatani and Chung 2007) proposes the semantic constraint, as in (40), on the gradient nature of grammaticalization of V-*te*-*ik*/*ku* 'V-CON-go/come' in Japanese. These studies offer a semantic explanation about what makes *ik* 'go' more auxiliarized when it is combined with some verbs than with others, a question which is left unanswered by the descriptive studies in the literature (see Section 2.2).

2.6 Locus of Problems

As has been reviewed in Sections 2.1–2.5, *ik* 'go' and its *-te* converbalized form, V-*te*-*ik* 'V-CON-go', have been researched in the literature from a variety of perspectives. Nonetheless, some questions still remain. Chief among them is the relationship between the three different forms which appear in the grammaticalization process of the Japanese motion verb: namely, the full-verb *ik* 'go', the infinitival form V-*yuk* 'V-go', and the *-te* conjunctive form V-*te*-*ik* 'V-CON-go'. In the balance of this chapter, I point out the remaining questions about the motion verb and relate them in the context of grammaticalization.

Firstly, fewer analyses have been done on the relationship between the three verbal forms which appear in the grammaticalization process of *ik* 'go' in Japanese. Descriptive studies (Morita 1968; 1994, Yoshikawa 1976, Kuno 1978, Teramura 1984, Imani 1990, Yoshida 2012) examine the meaning of *ik* 'go' and argue that the verb denotes movement in the direction of a non-speaker from the speaker. They further analyze the aspectual meaning of its *-te* converbalized form, V-*te*-*ik* 'V-CON-go', and attribute its ambiguity to lexical meaning of the preceding verbs (Morita 1968; 1994, Yoshikawa 1976, Imani 1990). Theoretical analyses (Nakatani 2008; 2013, Hidaka & Arai 2012) formalize the semantics of the full-verb *ik* 'go' and the *-te* conjunctive form, V-*te*-*ik* 'V-CON-go', in present-day Japanese within the framework of Generative Lexicon (Pustejovsky 1995). The proposed analyses from the theoretical perspective explain the semantics of these forms more rigidly than the descriptive studies. Historically speaking, research from the grammaticalizationist viewpoint (Shibatani 2007a, Shibatani & Chung 2007) shows that the once-predominant V-*yuk* 'V-go' is gradually replaced by V-*te*-*ik* 'V-CON-go' by around the nineteenth century (Shibatani & Chung 2007: 29). The displacement has also been discussed in the historical development of verbal compounds (Lin 1996, Kojima 1998; 2001, Hyakutome 2003, Tokumoto 2009). These researchers argue for early auxiliarization of *ik* 'go' and show that V-*yuk* 'V-go' used to be highly productive in Old and Middle Japanese, while becoming less productive in Modern Japanese. They further argue that the infinitival form emerged earlier than the *-te* conjunctive form.

In spite of these meticulous examinations, the interrelationship among the three verbal forms in the grammaticalization of Japanese *ik* 'go' have not been much addressed. For instance, previous research has not explained why the infinitival form, V-*yuk* 'V-go', and the *-te* conjunctive form, V-*te*-*ik* 'V-CON-go', both have movement meaning and aspectual meaning. We need to re-examine the historical development of these forms in order to explain the overlap in meaning between these two competing forms. In addition to this semantic relationship between these forms, it is of necessity to elucidate their relationship from a syntactic perspective. In other words, further research is needed to explain the motivations for the meaning overlap between the infinitival form and the *-te* conjunctive form, and to examine whether the overlap exists for only a semantic reason or for a semantic and syntactic reason.

In relation to the first problem, the infinitival form, V-*yuk* 'V-go', needs to be examined in more details. Firstly, we must describe the characteristics of the infinitival form. Under the assumption that the infinitival form is semantically overlapped with the *-te* converbalized form, it seems that these two forms would show the same semantic characteristics. To my

knowledge, however, fewer studies have addressed this point. Secondly, while the historical studies recognize the facts that the productivity of the infinitival form diachronically differs and the form is displaced by the *-te* conjunctive form in Modern Japanese, they have not examined concrete motivations for this replacement process.

Another interesting fact about the motion verb in question is that the *-te* conjunctive form, V-*te-ik* 'V-CON-go', undergoes phonological reduction, as a result of which V-*te-ik* becomes V-*te-k*. Previous scholars in the literature propose some phonological explanations for this phenomenon. For example, Nakatani (2013: 115) points out that contraction in the V_1-*te*-V_2 predicates in Japanese follows a rule which the higher vowel can be omitted when the two vowels—the last vowel of *te* and the initial vowel of V_2—are adjacent. Another explanation is offered in terms of vowel sonority of the two adjacent vowels. In the case of V-*te-ik* 'V-CON-go' where vowels /e/ and /i/ are adjacent, Kajii (1997) claims that the second vowel /i/ is omitted because it is less sonorant than the first vowel, and thus the contracted form should be V-*te-k* 'V-CON-go'.[5] Contraction in V-*te-ik* 'V-CON-go' can be viewed as a result of vowel coalescence as well. Vowel coalescence in Japanese is a phonological change in which, for instance, *sensei* 'teacher' becomes *sensee*, *kai-te-ok* 'write-CON-put' becomes *kai-tok*, and *kai-te-age* 'write-CON-give' becomes *kai-tage* (Kubozono 1998: 99). Kubozono (1998) proposes a template for vowel coalescence in the language as in (42), and suggests that contraction of V-*te-ik* 'V-CON-go' can follow this rule (Haruo Kubozono (p.c.) in 2008).

(42) Template for vowel coalescence

$[\alpha$ high, δ low, ε back$]$ $[\zeta$ high, β low, γ back$]$

$\rightarrow$ $[\alpha$ high, β low, γ back$]$

(Kubozono 1999: 103)

The template for vowel coalescence in (42) describes that when two vowels coalesce the resultant vowel inherits the [±high] feature from the first vowel and the other features ([±low] and [±back]) from the second vowel in the sequence. As for the contraction of V-*te-ik* 'V-CON-go', the [−high] feature comes from the former vowel /e/ ([−high, −low, −back]), and the [−low, −back] features are inherited from the latter vowel /i/ ([+high, −low, −back]). Thus, Kubozono (p.c.) suggests that contraction in question is exactly the same instance of vowel coalescence.

A peculiar thing about the reduction in V-*te-ik* 'V-CON-go' is that this does not always occur when the two vowels are adjacent, in spite of an assumption that it should always

[5]See, for example, Sano (1999) for details about the process of phonological attrition in terms of vowel sonority.

occur, based on the above-mentioned phonological accounts. This thus indicates that the concerning reductive phenomenon does not occur for a phonological reason only, but it could occur for other reasons as well. There is room for further research in order to identify the circumstances in which the phonological reduction takes place in the *-te* conjunctive form.

To recapitulate, the aims of this dissertation is to elucidate the (historical) interrelationship among the three forms in the grammaticalization of *ik* 'go' in Japanese, the full-verb *ik* 'go', the infinitival form V-*yuk* 'V-go', and the *-te* conjunctive form V-*te-ik* 'V-CON-go', and to capture the whole process of the historical development. For this purpose, the property of the infinitival form, including the diachronic difference of its productivity and its displacement by V-*te-ik* 'V-CON-go', needs to be addressed. There is a further phenomenon which needs to be addressed with respect to the grammaticalization process in question; that is, the phonological reduction in the *-te* conjunctive form (V-*te-ik* > V-*te-k*). These are the problems to which little attention has been paid in the literature. Exploring these issues, however, will be conducive to understanding the historical development of Japanese *ik* 'go'.

Chapter 3 Methodology

In Chapter 3, I explain the methodology of the present study of grammaticalization of the Japanese motion verb *ik* 'go'. Section 3.1 introduces my hypothesis about the grammaticalization process of the motion verb in question. In light of the remaining problems and questions which have been pointed out in the previous chapter, I employ a formal and corpus-based approach in the present study. Section 3.2 outlines the formal framework on which this study rests, the theory of Generative Lexicon, and introduces my version of the semantic representation. Section 3.3 sketches out the corpus-based framework, Variationist Sociolinguistics, which I adopt its analytical methods to examine the reductive change occurring in the *-te* conjunctive form, V-*te*-*yuk* 'V-CON-go', in present-day Japanese, namely, V-*te*-*ik* versus V-*te*-*k*. Section 3.4 introduces the corpora from which I amassed data for the present research.

3.1 Hypothesis

To begin with, I sketch out my hypothesis about the grammaticalization process of Japanese *ik* 'go' on the basis of facts which have been revealed in the literature. Table 6 displays my hypothesis on the historical development of the Japanese motion verb. Note that I hereafter consistently call the verb *yuk* instead of *ik*, in spite of the fact that the verb is usually pronounced as *ik* when it appears as a full verb and in the *-te* conjunctive form, V-*te*-*ik* 'V-CON-go', in present-day Japanese. I take this position in consideration of the verb's historical origin; *ik* had rarely been used in documents until the Heian or Kamakura era (approximately 8th–14th century) while *yuk* was predominantly used in the same period (see Matsumura (2006), for example).

Based on arguments in the literature, I hypothesize that the grammaticalization of Japanese *yuk* 'go' passes through four stages, from Phase I through Phase IV.[1] Apart from the full-verb *yuk* 'go' which remains extant throughout the historical process, the other two forms—the infinitival form, V-*yuk* 'V-go', and the *-te* conjunctive form, V-*te*-*yuk* 'V-CON-go'—have developed from the full verb as briefly described below.

In Phase I, which is the period before Old Japanese, this study speculates that the full-verb *yuk* 'go' forms the infinitival form, V-*yuk* 'V-go', the combination of 'V[infinitive] +

[1] I refer the readers to Kato, Saji, and Morita (1989), Sato (1995), and Frellesvig (2010), for example, for the time division in the history of Japanese language.

Table 6: Hypothesis about the grammaticalization process of *yuk* 'go'.

Phase I Before Old Japanese	Phase II Old Japanese	Phase III Middle Japanese	Phase IV Modern Japanese
yuk	⟶	⟶	***yuk***
↓			
V-*yuk* Movement Aspect	⟶	*gradual decline* ⟶	**V-*yuk*** Movement Aspect
	V-*te-yuk* ⟶ Successive events Simultaneous events	*gradual increase* ⟶ Aspect	**V-*te-yuk*** Successive events Simultaneous events Aspect

yuk'. In the infinitival form, *yuk* 'go' denotes movement with two interpretations: i) movement after V (the subject moves after the event denoted by the preceding verb ends) and ii) movement while V (the subject moves in tandem with the event denoted by the preceding verb). Additionally, I hypothesize that the infinitival form bears aspectual meaning as a result of auxiliarization of the motion verb.

In Phase II, the Old Japanese period, this study assumes that V-*te-yuk* 'V-CON-go' emerges, with the introduction of the conjunctive particle *te*.[2] The *-te* conjunctive form in this period is interpreted only as movement, since the intervening *te* prevents *yuk* 'go' from being interpreted as an aspectual converb. The transitional meaning of the form is interpreted in two different ways: i) movement after V (the subject moves after the event denoted by the preceding verb ends) and ii) movement while V (the subject moves in tandem with the event denoted by the preceding verb). The function of *te* is assumed to play a role in determining which of the interpretations to be taken.

In Phase III, which is the period of Middle Japanese, the *-te* conjunctive form, V-*te-yuk*

[2]The emergence of the *-te* conjunctive form cannot be clearly identified, considering Kojima's (2001) argument. Brent de Chene (p.c.) questions the period when the *-te* conjunctive form emerged in the grammaticalization process of the Japanese motion verb in question, pointing out that, given the fact that the form is attested in the texts compiled in the period of Old Japanese (e.g. *Man'yôshû*), the form in question, as well as the infinitival form, must have developed in pre-Old Japanese, namely in Phase I in the present hypothesis. As I will argue in Chapter 4, the previous researchers have attested that the infinitival form developed (or grammaticalized) earlier than the *-te* conjunctive form; given this, I hypothesize that the period when these two forms emerge differs, the infinitival form in pre-Old Japanese whereas the *-te* conjunctive form in Old Japanese.

'V-CON-go', begins to bear aspectual meaning as a result of the form being reanalyzed as follows: [V-*te*]-*yuk* > V-[*te-yuk*].[3] Briefly speaking, the pre-reanalysis representation, [V-*te*]-*yuk*, shows that a morphological boundary lies between the *-te* conjunctive particle and *yuk* 'go', suggesting that the motion verb remains autonomous as a full verb. In contrast, the post-reanalysis representation, V-[*te-yuk*], shows that the motion verb becomes less autonomous and forms a morphological unit with the *-te* conjunctive particle. A morphological boundary lies between the preceding verb and *te-yuk*. I assume that the reanalysis is motivated by gradual increase of the *-te* conjunctive form; as a result, the semantic bleaching of *te* in the form occurred in tandem with the development of verbal compounds in the Japanese language. On the assumption that the reanalysis makes it possible for V-*te-yuk* 'V-CON-go' to bear similar meaning as the infinitival form, V-*yuk* 'V-go', the meaning once denoted by the infinitival form is taken on by the newer *-te* conjunctive form. In other words, the renewal from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go' takes place at this stage. As a consequence, the infinitival form gradually falls into decline afterwards. Given the previous studies on the historical development of complex predicates in Japanese (e.g. Aoki 2012), I assume that the replacement occurs in parallel to the general replacement of the infinitival form by the *-te* conjunctive form regarding other verbs in Japanese.

Through these three stages, the grammaticalization process reaches Phase IV, which is the period of Modern Japanese. In Phase IV, the three forms, the full-verb *yuk* 'go', the infinitival form, V-*yuk* 'V-go', and the *-te* conjunctive form, V-*te-yuk* 'V-CON-go', coexist. Of the two grammaticalized forms, the *-te* conjunctive form becomes predominant and is used in wider contexts at this stage, which in turn drives the infinitival form into near-extinction in present-day Japanese.

3.2 Formal Framework: Generative Lexicon Theory

As has been stated in the previous section, in the grammaticalization process of Japanese *yuk* 'go', this study speculates that the two grammaticalized forms, V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go', are polysemous in that each of these forms has aspectual meaning as well as transitional meaning. Moreover, it is assumed that the meaning once expressed by the infinitival form is taken on by the *-te* conjunctive form in the historical process. In other words, the grammaticalized forms are semantically closely related with each other in the process. A framework to explain the polysemous property of the two grammaticalized forms and their relationship in the historical process is called for. In the present study, I

[3] I use square brackets to represent a morphological boundary in the *-te* conjunctive form. Using square brackets is a notational convention in the literature on grammaticalization for the purpose of showing a change in morphological boundary before/after reanalysis (see Hopper and Traugott (2003), for example.).

employ the framework of Pustejovsky's (1995) Generative Lexicon Theory, because it can handle the sense associations of the multiple meanings of a polysemous word.

The theory of Generative Lexicon (Pustejovsky 1995) proposes a mechanism to capture the semantic multiplicity of a polysemous word and to incorporate pragmatic knowledge as well as lexical/linguistic knowledge into the "dictionary", a list of lexical items. The multiple meanings of a lexical item are usually related and derived from its core meaning, and the specific sense of the multiple meanings is determined by the syntactic environments in which the lexical item appears (Nakatani 2013: 168–169). For example, *newspaper* means a producer in (43a) and a product in (43b). Which sense of *newspaper* to be taken is dependent on the context in which the word appears and both senses are logically related (Pustejovsky 1995: 31ff).

(43) a. The newspaper fired its editor.
b. John spilled coffee on the newspaper.

(Pustejovsky 1995: 31)

The interface of pragmatic knowledge with linguistic knowledge can be illustrated by the following examples. In (44a), *nyuugaku-su* 'enroll' is unacceptable because the entailment of the verb conflicts with the purpose of entering the school (i.e. to drink water), which is stated in the sentence. Enrollment entails a specific purpose or manner of the activity; for example, a person enters the school to study. In (44b), in contrast, *nyuugaku-su* 'enroll' is acceptable because the entailment of the verb is not in contradiction to the purpose stated in the sentence. On the other hand, *hair* 'enter' does not have any specific entailments and its purpose or manner is dependent on the context, and thus it is acceptable in both examples. This contrast shows that pragmatic knowledge (e.g. the purpose of the activity) also needs to be included in the semantics of an lexical item (Kageyama 2005: 70).

(44) a. *Musuko-wa mizu-o nomu tameni sono gakkoo-ni* {*hait*/**nyuugakusi*}*-ta.*
son-TOP water-ACC drink for the school-DAT {enter/enroll}-PAST
'My son {entered/ *enrolled in} the school to drink water.'

(Kageyama (2005: 70) with modification)

b. *Musuko-wa bungaku-o manabu tameni sono gakkoo-ni*
son-TOP literature-ACC study for the school-DAT
{*hait*/*nyuugakusi*}*-ta.*
{enter/enroll}-PAST
'My son {entered/enrolled in} the school to study literature.'

The qualia structure which Pustejovsky (1995) proposes is a mechanism to formally represent the semantic multiplicity and the interaction between pragmatic knowledge and linguistic knowledge in the semantics of a lexical item. The qualia structure is a core semantics of a lexical item and it consists of the following four elements, which specify the essential aspects of a word's meaning (Pustejovsky 1995: 76):

- CONSTITUTIVE: the relation between an object and its constituent parts;
- FORMAL: that which distinguishes it within a larger domain;
- TELIC: its purpose and function;
- AGENTIVE: factors involved in its origin or "bringing it about".

As for the semantics of verbs, Kageyama (2005) proposes an elaborated version of the qualia structure, with each quale defined as in (45). Kageyama (2005) introduces the Lexical Conceptual Structure (Jackendoff 1990, Kageyama 1996) to CONSTITUTIVE.

(45) a. FORMAL: the type of eventuality of the verb (activity, state, process, transition)
b. CONSTITUTIVE (CONST): the Lexical Conceptual Structure (LCS) of the verb
c. TELIC: the purpose/goal/function which the verb entails
d. AGENTIVE: the presupposition or frame (i.e. situation/background circumstances) which makes the verb come into being

(Kageyama 2005: 83–84)

According to Kageyama's (2005) representation, the qualia structure of *sagas* 'look for' is like (46). In (46), FORMAL shows that the event type of *sagas* 'look for' is process, an unbounded continuative event. The LCS in CONST shows that the subject (x) moves her eyes along a route. TELIC represents the purpose of the verb (i.e. the subject (x) does the activity to find something (y)). AGENTIVE shows that the verb presupposes that the subject (x) does not have the thing that she is looking for (y).

(46)
$$\left[\begin{array}{l} \textit{sagas} \text{ 'look for'} \\ \text{QUALIA} = \left[\begin{array}{l} \text{FORMAL: process} \\ \text{CONST: [ ] }_{x}\text{CONTROL [GAZE-OF-[ ]}_{x}\text{MOVE [}_{\text{Route}}\text{]]} \\ \text{TELIC: } \textbf{find}(e, x, y) \\ \text{AGENTIVE: } \textbf{not-have}(x, y) \end{array}\right] \end{array}\right]$$

(Kageyama 2005: 85)

3.2.1 The Semantic Representation in the Present Study

In this dissertation, I basically employ the qualia structure proposed by Hidaka (2012) to represent the semantics of *yuk* 'go' and the forms which have developed from the verb, V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go'. Hidaka's (2012) representation is a modified version of the one proposed by Kageyama (2005). What differs in Hidaka's (2012) representation is that he divides the qualia structure into two semantic levels, Truth-conditional Section (TS) and Non-truth-conditional Section (NTS). Of the four qualia, the formal quale (FORMAL) and the constitutive quale (CONST) belong to TS, whereas the telic quale (TELIC) and the trigger quale (TRIGGER) belong to NTS.[4] The elements in TS are directly projected to the argument structure, while those in NTS are not (Hidaka 2012: 32ff). Based on these frameworks, I use the semantic representation as in (47).

(47)
$$\left[\begin{array}{l} \textit{lexeme} \\ \text{ARG} = \left[\ \text{Syntactic arguments}\ \right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{l} \textit{Truth-conditional Section (TS)} \\ \text{FORMAL: Temporal feature,} \\ \qquad\qquad\ \text{Distance function (}\mathbf{DIS}\text{),} \\ \qquad\qquad\ \text{Point-of-view function (}\mathbf{POV}\text{)} \\ \text{CONST:}\quad \text{Lexical Conceptual Structure} \end{array}\right] \\ \left[\begin{array}{l} \textit{Non-truth-conditional Section (NTS)} \\ \text{TELIC:}\quad \text{The resultative state in which the verb entails} \\ \text{TRIGGER: The external factors in bringing it about} \end{array}\right] \end{array}\right] \end{array}\right]$$

A novel feature in this semantic representation is in the FORMAL quale; I introduce *the temporal feature*, *the distance function*, and *the point-of-view function* to describe the semantics of the Japanese motion verb in question. I will explain these elements below in turn.

The idea of *temporal feature* is adopted from Igarashi and Gunji (1998) and Gunji (2004). They propose that a verb has three temporal points, s, f and r, to describe its aspectual property; s is the start time of the event, f the finish time of the event, r the reset time at which the individual goes back to the original state. (48a–c) exemplify the temporal feature of *ki* 'put on', *aruk* 'walk' and *sin* 'die' respectively.

(48) a. *ki*: $s < f < r < \infty$ (recoverable transitional activity)

[4] Hidaka (2012) renames Pustejovsky's (1995) AGENTIVE quale as "TRIGGER" so as not to confuse the readers with the general term Agent, which is used to describe the thematic roles. I adopt his terminology in this dissertation.

b. *aruk*: $s < f = r < \infty$ (non-transitional activity)

c. *sin*: $s = f < r = \infty$ (nonrecoverable transitional achievement)

(Gunji 2004: 25)

According to Gunji (2004: 24), $s < f$ signifies that there is a finite temporal interval between the start time and the finish time of the event; $s = f$ that there is no interval between the start time and the finish time of the event; $f < r$ that the state changes at the finish time of the event; $f = r$ that there is no change in state; $r < \infty$ that the state returns to the initial state within a definite time; $r = \infty$ that the initial state is kept throughout the event. I introduce the temporal feature to the semantic representation in order to define the eventuality type of the verb more rigidly than the preceding frameworks (Kageyama 2005, Hidaka 2012).

In addition to the temporal feature, I introduce the two semantic functions, *the distance function* (**DIS**) and *the point-of-view function* (**POV**) to the FORMAL quale in order to formalize the semantics of the motion verb in question. This is based on the arguments that the point-of-view (POV) holder of *yuk* 'go' can be either the speaker or the speaker's empathy focus (Kuno & Kaburaki 1977, Kuno 1987), which is exemplified by (49).

(49) a. POV holder = speaker

Taroo-ga yukimiti-o yuk-u kookee-o mi-ta.
Taro-NOM snow.road-ACC go-PRES scene-ACC see-PAST
'[I] saw the scene of Taro having gone along a snowy road.'

b. POV holder = Mary (= speaker's empathy focus)

Mari-ga Taroo-ga yukimiti-o yuk-u kookee-o mi-ta.
Mary-NOM Taro-NOM snow.road-ACC go-PRES scene-ACC see-PAST
'Mary saw the scene of Taro having gone along a snowy road.'

For (49a), it is reasonable to consider the speaker as the point-of-view holder; the speaker herself watches the scene of Taro going along a snowy road. For (49b), on the other hand, it is fair to say that it is not the speaker but Mary who watches the scene of Taro going; the speaker empathizes with her. Thus, the point-of-view holder of *yuk* 'go' is a variable whose value is characterized by either the speaker herself or the speaker's empathy focus. I use a semantic variable p to represent the point-of-view holder of *yuk* 'go', and assume that the formal property of the verb will be defined by means of this semantic variable and the temporal feature.

The point-of-view function (**POV**) consists of **POINT** and **VIEW**. The idea is sketched in Figure 2. As for *yuk* 'go', **POINT**, which specifies the point which p looks at in the

event (e): **POINT**(e) = $Loc(e, s')$. This means that p looks at a random point after the event started (s'). *Loc* signifies the location. **VIEW**, which specifies the range of the whole event which p assumes: **VIEW**(y) = $\langle s, f \rangle$. This means that p views the whole process.

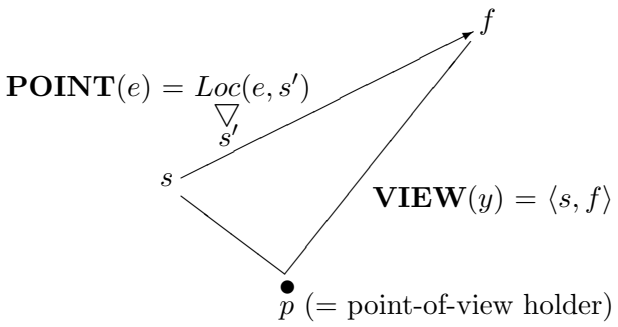


Figure 2: **POV** of *yuk* 'go'.

The distance function (**DIS**) outputs the spatial/psychological distance between the POV holder (p) and the point in the event which p looks at. Look at Figure 3. As for *yuk* 'go', **DIS**(p, $Loc(e, s')$) < **DIS**(p, $Loc(e, f)$): p is nearer to the point of the event which she looks at than to the endpoint of the event. The values of these semantic functions show that *yuk* 'go' denotes an event in the direction of a non-speaker.

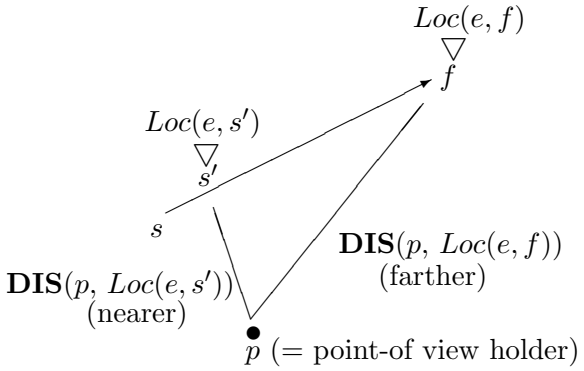


Figure 3: **DIS** of *yuk* 'go'.

With these formal mechanisms, I will explain the interrelationship among the three forms in the grammaticalization process of the Japanese motion verb concerned in this dissertation: *yuk* 'go', V-*yuk* 'V-go', and V-*te*-*yuk* 'V-CON-go'.

3.3 Corpus-based Framework: Variationist Sociolinguistics

There is another issue to be addressed with regard to the grammaticalization of Japanese *yuk* 'go'; it is necessary to identify the environments where the morphophonological variation occurs in the *-te* conjunctive form V-*te-yuk* 'V-CON-go'. As has been mentioned in Section 3.1, the *-te* conjunctive form is usually pronounced as V-*te-ik* instead of V-*te-yuk* in present-day Japanese. What I focus on is the fact that the form occasionally undergoes phonetic reduction and V-*te-ik* changes into V-*te-k*. For example, *mot-te-ik* 'have-CON-go' can be realized as either *mot-te-ik* or *mot-te-k*, as exemplified by (50a,b). In what follows, I call the former the unreduced form and the latter the reduced form.

(50) a. *Ensoku-e takusan okasi-o mot-te-ik-u.*
excursion-DAT many snack-ACC have-CON-go-PRES
'I am going to bring a lot of snacks on school excursion.'

b. *Ensoku-e takusan okasi-o mot-te-k-u.*
excursion-DAT many snack-ACC have-CON-go-PRES
'I am going to bring a lot of snacks on school excursion.'

A noticeable fact about (50a,b) is that the sentential meaning does not change as a result of phonetic reduction; both *mot-te-ik* in (50a) and *mot-te-k* in (50b) mean exactly the same. Curiously, it is also the fact that phonetic reduction does not necessarily occur in every case when the *-te* conjunctive form is used. Then, in what environments does the reductive change occur? To my knowledge, however, this question remains untouched in the literature.

In the literature on grammaticalization, phonetic reduction has long been seen as a sign showing that a grammaticalized form is at the most advanced stage of the historical process. In light of this, it is reasonable to assume that the *-te* conjunctive form, V-*te-ik* 'V-CON-go', is at the most advanced stage in the grammaticalization process of *yuk* 'go', because it too undergoes phonetic reduction. What remains unknown, however, is in what circumstances the reduction occurs in the *-te* conjunctive form. My exploration will not end until I go into this phenomenon. Now, what approach should we take to examine this reductive change? The formal framework, as has been explained Section 3.2, will be inappropriate under the assumption that there is no semantic change in V-*te-ik* 'V-CON-go' as a result of phonetic reduction. Additionally, a quantitative analysis using a large amount of examples, rather than the formal, qualitative analysis, is necessary to identify the environments in which the reductive change occurs. In other words, we need a framework which assumes the semantic correspondence between the two competing forms in a variable phenomenon and which can deal with a large amount of data. Variationist Sociolinguistics has developed an empirical implementation of such a quantitative approach.

Variationist Sociolinguistics is a discipline that integrates social and linguistic aspects of language, and aims to present a model of language which could accommodate the paradoxes of language change. Formal theories of language, for example, the theory of generative grammar (Chomsky 1957 *et seq.*), attempt to determine the structure of language as a fixed set of rules or principles, but at the same time language changes and thus structure must be fluid (Tagliamonte 2006: 4). As Weinreich et al. (1968: 188) state, variationist sociolinguists examine both linguistic and social aspects of language so as not to fail to explain the rich body of regularities which can be observed in language use.

The variationist approach rests on three essential facts about language: i) 'orderly heterogeneity' (Weinreich et al. 1968, Labov 1982), ii) the fact that language always changes, and iii) that language conveys more than merely the meaning of its words. Firstly, 'orderly heterogeneity' means that language varies and linguistic variation is constrained by order and structure within the grammar. The forms in linguistic variation are called variants and they are considered to represent the same meaning, as defined as "alternative ways of saying the same thing" (Labov 1972). The variationist approach considers the speaker's selection of one variant from the others to be patterned by various linguistic and social factors; the (underlying) variable grammar of the speaker and the grammar of the speech community to which she belongs condition the choice of a particular variant (Poplack & Tagliamonte 2001). Secondly, language changes perpetually, either in time or along some economic, demographic, or geographic dimension (Sankoff & Thibault 1981); that language changes is a characteristic of all human languages (Trudgill 2003). What is observed as linguistic variation, the coexistence of an older form (a conservative variant) and a newly-appeared form (an innovative variant), in a particular period is the intermediate stage of transition. Interplay between linguistic factors and social factors has been observed in language change (Sankoff & Labov 1979, Labov 1982, Sano 2009; 2011, among others). Thirdly, language conveys not only the meaning of its words but also important extralinguistic information about, for example, who the speaker is or how she perceives her relationship to her hearers (Tagliamonte 2006). The extralinguistic information, in other words, includes the speaker's social identity such as the speaker's gender, educational background, socioeconomic status, and so forth. A particular variant used in one's speech not only delivers its propositional content but also communicates the speaker's social backgrounds to her hearers.

Given these three facts about language, the variationst approach raises the following five problems about linguistic change (Weinreich et al. 1968: 183–187), as in (51), and addresses these questions by using a quantitative method.

(51) a. The Constraints Problem: What are the constraints on change?

b. The Transition Problem: How does language change?

c. The Embedding Problem: How is a given language change embedded in social and linguistic systems?

d. The Evaluation Problem: How do members of a speech community evaluate a given change and what is the effect of this evaluation on the change?

e. The Actuation Problem: Why did a given linguistic change occur at a particular time and place that it did?

(Tagliamonte 2012: 71)

The quantitative method employed by this line of research is based on the observation that speakers make choices when they use language and that these choices are discrete alternatives with the same referential value or grammatical function (Tagliamonte 2006). Under the assumption that these choices vary in a systematic way, which has been stated as 'orderly heterogeneity' (Weinreich et al. 1968, Labov 1982), the variationist approach aims to model the simultaneous, multi-dimensional factors affecting speaker's choices (Labov 1969, Cedergren & Sankoff 1974, among others). The analysis of linguistic variation consists of the factor-by-factor analysis (distributional analysis) and the logistic regression analysis. The factor-by-factor analysis is the first step in a quantitative analysis. It examines the cross-tabulation of factors and assesses how different factors intersect with one another. Then, the statistical modeling based on the logistic regression analysis is conducted. In this type of analysis, the observed values (i.e. the actual number of occurrence of variants) are log-transformed and the impacts of factors are evaluated by the following "three lines of evidence" (Poplack & Tagliamonte 2001): i) statistical significance, ii) effect magnitude (strength of factors), and iii) constraint hierarchy or direction of effects. Statistical significance indicates which factors has statistical significance for the concerning variable phenomenon. Effect magnitude shows which factor group is most significant or least.[5] Constraint hierarchy shows the order of factors within a linguistic feature (Tagliamonte 2012: 122ff). With these analytical procedures, Variationist Sociolinguistics aims to elucidate the rules or principles which govern the language variation and change.

Considering the characteristics of Variationist Sociolinguistics, this framework is appropriate for identifying the environments where the reductive change in V-*te*-*ik* 'V-CON-go' occurs; its ability to model the simultaneous, multiple factors affecting the speaker's choice

[5]In the study of Variationist Sociolinguistics, the term "factor" can refer to either the entire factor group being tested (e.g. following phonological segment) or one of the individual factors within a factor group (e.g. pause, consonant, vowel) (Tagliamonte 2012: 121).

of a variant can be helpful in elucidating the variable phenomenon which is observed in the advanced stage of the grammaticalization process of *yuk* 'go' in Japanese.

3.4 Data

As has been explained in the preceding sections, I employ a formal and corpus-based approach in order to address the remaining problems about the grammaticalization process of *yuk* 'go' in Japanese. For the present research, I used the following databases in order to collect data: Oxford Corpus of Old Japanese, Japanese Text Initiative, and Corpus of Spontaneous Japanese. The first two databases contain a large volume of texts of historical Japanese, which provides real examples relevant to examining the historical development of the verb forms in question, *yuk* 'go', V-*yuk* 'V-go', and V-*te-yuk* 'V-CON-go'. The third one is used for analyzing the morphophonological variation occurring in V-*te-yuk* 'V-CON-go', V-*te-ik* versus V-*te-k*. This subsection introduces these three databases and the materials which are used for the present research.

3.4.1 Data of Historical Japanese

Data of historical Japanese is amassed from Oxford Corpus of Old Japanese and Japanese Text Initiative. Oxford Corpus of Old Japanese (Frellesvig, Horn, Russell, & Sells 2013) has been constructed by the Faculty of Oriental Studies at Oxford University in collaboration with the National Institute for Japanese Language and Linguistics and the University of York. The corpus is published online and continuously updated, aiming to develop the annotated digital corpus of all texts in Japanese from the period of Old Japanese. The corpus contains texts, annotation, translation, and dictionary. The texts include the original script and phonemic transcription, and they will be presented with detailed annotation including a variety of linguistic information (orthographic, phonological, morphological, syntactic, semantic, and lexical information), as well as literary, biographical, historical, geographical, and other information. The English translation of the original script and a bilingual Old Japanese-English dictionary will also be published (see http://vsarpj.orinst.ox.ac.uk/corpus/index.html for details). Japanese Text Initiative (The University of Virginia Library Electronic Text Center and the University of Pittsburgh East Asian Library 2006), developed by the University of Virginia Library Electronic Text Center and the University of Pittsburgh East Asian Library, is an online digital corpus containing texts of classical Japanese literature. The texts include poetry, stories, chronicles, proses, and scripts from the period of Old Japanese to Modern Japanese. Table 7 is a list of texts from which the data are collected.

Table 7: Historical texts in choronological order.

Old Japanese (–800 A.D.)	Middle Japanese (800–1600)	Modern Japanese (1600–)
Kojiki Kayô (『古事記歌謡』 (712))	*Tosa Nikki* (『土佐日記』 (935))	*Kôshoku Ichidai On'na* (『好色一代女』 (1686))
Nihonshoki Kayô (『日本書紀歌謡』(720))	*Kagerô Nikki* (『蜻蛉日記』 (975))	*Kôshoku Gonin On'na* (『好色五人女』 (1686))
Man'yôshû (『万葉集』 (–759))	*Makuranosôshi* (『枕草子』 (996))	*Ugetu Monogatari* (『雨月物語』 (1776))
	Genji Monogatari (『源氏物語』 (1001))	*Ukigumo* (『浮雲』 (1889))
	Izumishikibu Nikki (『和泉式部日記』(1007?))	*Kokoro* (『こころ』 (1914))
	Murasakishikibu Nikki (『紫式部日記』 (1010))	
	Sarashina Nikki (『更級日記』 (1059))	
	Hôjôki (『方丈記』 (1212))	
	Kaidôki (『海道記』 (1223))	
	Heike Monogatari (『平家物語』 (1230s?))	
	Tôkan Kikô (『東関紀行』 (1242))	
	Izayoi Nikki (『十六夜日記』 (1283?))	
	Tsurezuregusa (『徒然草』 (1330?))	

3.4.2 Data for the V-*te-ik*/-*te-k* ''V-CON-go' Variation

Data for the quantitative analysis of the phonetic reduction in V-*te-ik* 'V-CON-go' is collected from the Simulated Public Speaking in Corpus of Spontaneous Japanese (NINJAL, NICT, & Tokyo Institute of Technology 2004). Corpus of Spontaneous Japanese (hereafter, CSJ) is a database of modern spoken Japanese, which contains 660 hours and 7.5 million words in total. A distinct feature of the corpus is that the speeches recorded in the corpus are made spontaneously, with varying degrees of spontaneity, and include a variety of types (academic presentations, simulated public speaking, interviews, dialogues, readings) (Maekawa 2004). Additionally, the recorded speeches are offered with detailed annotation (morphological information, segmental information, speech style, speech spontaneity, speech fluency, etc.) and a variety of speaker's attributes (gender, age, place of birth, educational background,

speech skillfulness, speech experience, etc.) (see Kagomiya (2004) for details).

Among a variety of speeches, I used the Simulated Public Speaking (hereafter, SPS) as the source of data for the present study for the following reasons. First of all, SPS contains the largest amount of data (1,715 files for 330 hours) in CSJ and it is more well-balanced with regard to the speaker's gender and age than other types of speech data. Furthermore, the speakers of SPS are asked to talk about topics which can be found in daily conversation such as "The happiest thing in my life", "The saddest thing in my life", or "About the town which I live in", so that SPS are more informal than other speech types (e.g. Academic Presentation Speech). Since each speech of SPS lasts for 10–15 minutes, it is expected to obtain examples suitable for a quantitative analysis. For these reasons, using speech data of SPS is appropriate to the purpose of the present research.

In retrieving data from SPS, I created a Perl-based program, then I ran the program through the SPS files with morphological information.[6] As a result, I obtained 4,029 tokens including 2,972 instances of the unreduced form, V-*te-ik*, and 1,057 instances of the reduced form, V-*te-k*. The sample consists of 523 speakers (290 women and 233 men). Table 8 shows the distribution of the two variants in the present sample.

Table 8: The overall distribution of variants.

V-*te-ik*	V-*te-k*	N
73.8% (2,972/4,029)	26.2% (1,057/4,029)	100% (4,029/4,029)

3.5 Summary

In this chapter, I have introduced two different frameworks which I employ in the present study of the grammaticalization process of Japanese *yuk* 'go'. The formal framework based on the theory of Generative Lexicon can be helpful in elucidating not only how the two grammaticalized forms, V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go', have developed from the lexical *yuk* 'go', but also how the two grammaticalized forms are interrelated. The corpus-based framework used by Variationist Sociolinguistics, on the other hand, can be appropriate to analyze the factors conditioning the phonetic reduction occurring in the *-te* conjunctive form, V-*te-ik* versus V-*te-k*. To recapitulate, I employ a formal and corpus-based approach in order to capture the whole process of grammaticalization of the motion verb.

[6] I used the annotated data whose file extension is .sdb. See Yamaguchi, Ogura, Nishikawa, Ishizuka, Kimura, and Uchimoto (2004) for details about morphological annotation in CSJ.

Chapter 4 Formal Analysis of the Grammaticalization of *yuk* 'go'

As has been introduced in Chapter 3, I will conduct a formal and corpus-based analysis of the grammaticalization process of *yuk* 'go' in Japanese, believing that this methodology can be conducive to elucidating the remaining questions about the historical phenomenon (Section 2.6 in Chapter 2) and capturing its whole process. As for the grammaticalization process of the motion verb in question, I presented the following hypothesis in the previous chapter (Section 3.1 in Chapter 3), repeated below for convenience:

Table 9: Hypothesis about the grammaticalization process of *yuk* 'go'.

Phase I	Phase II	Phase III	Phase IV
Before Old Japanese	Old Japanese	Middle Japanese	Modern Japanese
yuk	⟶	⟶	***yuk***
↓			
V-*yuk*	⟶	*gradual decline* ⟶	**V-*yuk***
Movement Aspect			Movement Aspect
	V-*te*-*yuk* ⟶	*gradual increase* ⟶	**V-*te*-*yuk***
	Successive events Simultaneous events		Successive events Simultaneous events
		Aspect	Aspect

In this chapter, especially, I focus on analyzing the interrelationship among the three forms appearing in the grammaticalization process: the full-verb *yuk* 'go', the infinitival form, V-*yuk* 'V-go', and the *-te* conjunctive form, V-*te*-*yuk* 'V-CON-go'. For this purpose, I use a formal-semantic analysis within the framework of Generative Lexicon (Pustejovsky 1995, Kageyama 2005, Hidaka 2012), presenting relevant examples taken from the historical corpora, the Oxford Corpus of Old Japanese and the Japanese Text Initiative (see Section 3.4.1 in Chapter 3 for details about these corpora). The analysis will be presented in order according to the grammaticalization process shown in Table 9, from Phase I to Phase IV.

4.1 Phase I: The Emergence of V-*yuk* 'V-go'

4.1.1 *Yuk* 'go' as a Lexical Verb

The grammaticalization process of *yuk* 'go' is seen as early as in the period even before Old Japanese, assuming from the fact that the full-verb *yuk* 'go' began to appear in the infinitival form, V-*yuk* 'V-go', in Old Japanese and the form was used productively in the period (Lin 1996, Kojima 2001, Shibatani & Chung 2007). For example, the result of a survey by Lin (1996) shows that *yuk* 'go' is one of the most frequently-used verbs as the secondary component of verbal compounds in the Old Japanese period (p. 15). In light of the productive nature of V-*yuk* 'V-go' in Old Japanese, I assume that the infinitival form had already developed from the full-verb *yuk* 'go' before the Old Japanese period. Before discussing the emergence of V-*yuk* 'V-go', however, it is of necessity to examine the full-verb *yuk* 'go', the lexical item from which the infinitival form originates. Let us first look into the usage of the lexical *yuk* 'go'.

(52) is an example of the full-verb *yuk* 'go' appearing in *Kojiki Kayô*, a poetic text included in *Kojiki* which records ancient matters. In (52), the motion verb denotes the subject's physical movement; the subject will go to pick wild leek with her children.[1] For the lexical *yuk* 'go', I give the following semantic representation as in (53).

(52) 伊邪古杼母　怒毘流都美迩　比流都美迩　和賀由久美知能　迦具波斯
iza kwodomo *nwobiru tumi ni* *piru tumi ni* *wa ga yuku miti no* *kagupasi*
now child wild.leek pick-DAT leek pick-DAT I-NOM go road-GEN fragrant
波那多知婆那波
panatatibana pa
citrus.tachibana-TOP

'Now children, let's pick wild leek. The fragrant citrus tachibana along the road we go. . . .'

(*Kojiki Kayô*.43)

[1]Examples taken from the historical corpora will be presented with i) the original script written in Chinese characters or in Japanese, ii) the romanized phonemic transcription, iii) glosses in English, and iv) the English translation. The song's number and the volume in which the song appears are shown within the accompanying parentheses to each example; for instance, (*Kojiki Kayô*.43) indicates that the song is the 43rd in *Kojiki Kayô*, or (*Man'yôshû*.10.1865) indicates that the song is the 1865th in *Man'yôshû* and appears in its volume 10. Note that the romanized phonemic transcription given to each example, except for (91a,b), is taken from Oxford Corpus of Old Japanese (Frellesvig et al. 2013).

(53)
$$\left[\begin{array}{l} \textit{yuk} \text{ 'go'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y, \text{ P-ARG: } p \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \multicolumn{2}{l}{\textit{Truth-conditional Section}\text{ (TS)}} \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \textbf{DIS}(p,\, \textit{Loc}(e, s')) < \textbf{DIS}(p,\, \textit{Loc}(e, f)), \\ \textbf{POV}(p) = \langle \textbf{POINT}(e) = \textit{Loc}(e, s'), \\ \qquad\qquad \textbf{VIEW}(y) = \langle s, f \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (x, \text{ VIA } (y)) \end{array}\right] \\ \left[\begin{array}{ll} \multicolumn{2}{l}{\textit{Non-truth conditional Section}\text{ (NTS)}} \\ \text{TELIC:} & \text{BE-AT } (x,\, z_{\text{place}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

I first explain what the qualia structure of the lexical *yuk* 'go', the core of its semantics, means. The temporal feature ($s < f$) shows that there exists an interval between the start time and the finish time of the movement; the lexical *yuk* 'go' encodes motion activity. I assume this temporal feature for this verb in consideration of the arguments held by Kindaichi (1950), Nakazawa (2002), and Nakatani (2013). These researchers acknowledge that *yuk* 'go' can have a progressive, continuous activity reading as well as an achievement reading. Consider the following example:

(54) *Taroo-wa ima sotira-e it-te-ir-u.*
Taro-TOP now there-toward go-CON-be-PRES
'Taro is heading toward there.' or 'Taro is now there.'

Kindaichi (1950), for instance, argues that verbs such as *yuk* 'go', *ku* 'come', *hair* 'enter' and so forth behave as an activity verb on the one hand and as an achievement verb on the other. As an activity verb, these verbs mean that the subject is on the way to her destination. As an achievement verb, in contrast, they mean that the subject already arrived at her destination as of the sentence being uttered. Thus, in (54), *it-te-ir-u* 'go-CON-be-PRES' can refer to not only the ongoing movement of the subject, *Taroo*, toward his destination but also the subject's arrival at his destination. For this reason, I assume *yuk* 'go' to have a temporal feature of the activity type, $s < f$.

The distance function (**DIS**) and the point-of-view function (**POV**) formalize the deictic property of *yuk* 'go'; that is, the verb denotes the subject's movement away from the speaker toward a non-speaker (see Section 2.1 in Chapter 2). For the details about each semantic function, see Section 3.2.1 in Chapter 3.

When it comes to the semantic values of the CONST and TELIC qualia, I set the movement meaning (GO (x, VIA (y))) in the CONST quale in TS, and the arrival meaning (BE-AT (x, z_{place})) in the TELIC quale in NTS. This is because the motion verb encodes

movement along a path, whereas it does not lexically entail the arriving event (Nakatani 2013: 199–207). I represent the motion meaning by using GO, the function introduced by Jackendoff (1990). Additionally, by representing the motion meaning as GO (x, VIA (y)), I assume that *yuk* 'go' is a "path-oriented" motion verb in Kageyama and Yumoto's (1997) term. This is because, similar to other path-oriented verbs (e.g. *aruk* 'walk', *samayow* 'wander', etc.), *yuk* 'go' can take a path marked by *o* and is compatible with an adverb such as *itizikan* 'one hour' which denotes duration. Consider the following examples:

(55) a. *Kare-wa kono miti-o {arui/samayot}-ta.*
he-TOP this road-ACC {walk/wander}-PAST
'He walked/wandered along this road.'

b. *Kare-wa itizikan {arui/samayot}-ta.*
he-TOP one hour {walk/wander}-PAST
'He walked/wandered for one hour.'

(56) a. *Kare-wa kono miti-o it-ta.*
he-TOP this road-ACC go-PAST
'He went along this road.'

b. *Kono miti-o itizikan ik-u to, mokutekiti-ni tuki-mas-u.*
this road-ACC one hour go-PRES COMP destination-DAT arrive-HON-PRES
'[You] will arrive your destination by going along this road for one hour.'

It seems reasonable to suppose this in light of the discussion in previous research (Kindaichi 1950, Nakazawa 2002, Nakatani 2013), which argues for the continuous, activity reading of *yuk* 'go'.[2]

As for the argument structure of the lexical *yuk* 'go', I assume that the verb requires three arguments. The first and the second argument are the subject who moves (ARG1: x) and the path which the subject goes through (ARG2: y) respectively. It is a reasonable assumption for the lexical *yuk* 'go' to take the second argument because movement proceeds along a path. I propose that the motion verb in question should further have the third argument (P-ARG: p), an argument representing the point-of-view holder of the motion verb. This proposal is based on the argument held by Kuno (1978, 1987) over empathy

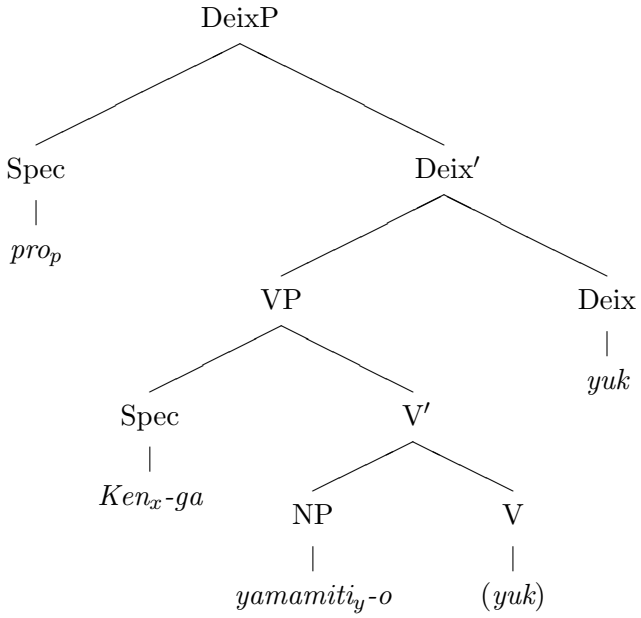
[2]I ignore the TRIGGER quale (or AGENTIVE in Pustejovsky's (1995) term) to represent the semantics of *yuk* 'go' under the assumption that no presupposition or external factors is needed to make the verb come into being. Note, however, Kageyama's (2005: 73) remarks about setting point of view in the AGENTIVE quale. He suggests that point of view should belong to the quale because it is crucial to determine the difference between, for example, *kado* and *sumi* in Japanese, which both means 'corner' in English; *kado* is used when we look at a corner from outside of the building, whereas *sumi* is used when we look at a corner from inside. Considering this argument, a question about in which quale the point-of-view function (**POV**) should be set may remain. I leave this question open for future research.

focus with whom the speaker identifies, suggesting that the point of view of verbs such as *yuk* 'go', *ku* 'come', *yar* 'give' and so forth can be on either the speaker herself or her empathy focus (see Section 2.1 in Chapter 2). In other words, the one who looks at the transitional event denoted by *yuk* 'go' is not always the speaker. Given this discussion, I postulate the semantic variable p (point-of-view holder), which is to be specified as the speaker or her empathy focus, and in syntax the motion verb should have an argument corresponding to this semantic variable, hence the argument representing the point-of-view holder (P-ARG: p). More discussion on the status of this argument will appear in Chapter 6.

Below, I explain the syntactic structure of the lexical *yuk* 'go', taking an example like (57a). (57b) shows part of the syntactic structure of (57a), which is crucial to the discussion here. Subscripts (x, y, and p) indicate the correspondence of arguments between syntax and semantics.

(57) a. *Ken-ga yamamiti-o yuk-u kookee*
Ken-NOM mountain.road-ACC go-PRES scene
'The scene of Ken going along a mountain road'

b.



The derivation proceeds as follows. Firstly, the path of movement, *yamamiti* 'mountain.road', is merged with the lexical *yuk* 'go' and the path is marked by *o* as a result that the accusative case is given by the motion verb. Here, let me clarify my view on the accusative case-marking of the *path*-argument.

As for this point, I follow previous research contending that path is a theme on which the

motion activity acts (Miyake 1996, Tanaka & Matsumoto 1997, Ueno & Kageyama 2001). Ueno and Kageyama (2001: 57–58), for example, argue that it is reasonable to consider path of movement as an incremental theme (Dowty 1991) in light of similarity between these two; path of movement can be modified by the expressions representing its gradual change, as in the case of incremental themes. Consider the following examples:

(58) a. *Watasi-wa keeki-o mittu tabe-ta.*
I-TOP cake-ACC three eat-PAST
'I ate three cakes.'

b. *Watasi-wa yamamiti-o nizyukkiromeetoru arui-ta.*
I-TOP mountain.road-ACC twenty.kilometer walk-PAST
'I walked a mountain road for twenty kilometers.'

(Ueno & Kageyama 2001: 57–58)

(59) *Kono miti-o {itizikan/gokiro} yuk-u to, ...*
this road-ACC {one.hour/five.kilometer} go-PRES as
'As [you] go along this road {for an hour/for five kilometers}, ...'

As shown in (58b), path of *aruk* 'walk', *yamamiti* 'mountain.road', is modified by *nizyukkiromeetoru* 'twenty kilometers', an expression illustrating incrementality of path; the subject, as it were, *consumed* twenty kilometers of the mountain road, as in the case of (58a) in which the subject ate (or *consumed*) three cakes (Ueno & Kageyama 2001: 57–58). The same thing is observed as to the *path*-argument which *yuk* 'go' takes, as in (59) where *itizikan* 'one hour' or *gokiro* 'five kilometers' indicates the temporal or spatial quantity which the subject moves (or *consumes*). Given such a similarity between incremental themes and path of movement, I argue for the accusative case-marking of the *path*-argument, agreeing with these previous researchers (see also Kageyama (1980) for evidence to support the accusative case-marking of the *path*-argument).

In addition to the *path*-argument, the motion verb requires the subject, *Ken*, which is to be introduced in its specifier position (Spec) and is marked by the nominative case, hence *Ken-ga* in SpecVP. At this stage, the two arguments assumed in semantics, given in (53), are introduced. What remains is the argument representing the point-of-view holder of the verb (P-ARG: *p*). I argue that the motion verb undergoes head-movement to the head of Deixis Phrase to accommodate this argument in its specifier position; I assume a *pro* to syntactically represent the argument of poin-of-view holder of the concerning motion verb. By assuming Deixis Phrase as a functional phrase based on Nishigauchi (2009, 2014),

the point-of-view holder of the verb is specified; pro_p is identified with the speaker or her empathy focus.

Positing the head-movement of *yuk* 'go' from V to Deix and the argument of point-of-view holder (pro_p) in the structure like (57b) can explain the difference in the point-of-view holder of the event which the motion verb denotes. Consider (60a,b). (60a,b) illustrate that the person who watched the event denoted by *yuk* 'go' (i.e. the scene of Ken going along a mountain road) is different in these examples. In (60a), it is the speaker herself who watched the event; however, in (60b), it is Mary who watched the event. Thus, the point-of-view holder of the event denoted by *yuk* 'go' is not necessarily the speaker. This difference in point-of-view holder can be captured by assuming the syntactic structure like (57b) and assuming different binders for pro_p.

(60) a. *Ken-ga yamamiti-o yuk-u-kookee-o mi-ta.*
Ken-NOM mountain.road-ACC go-PRES-scene-ACC look-PAST

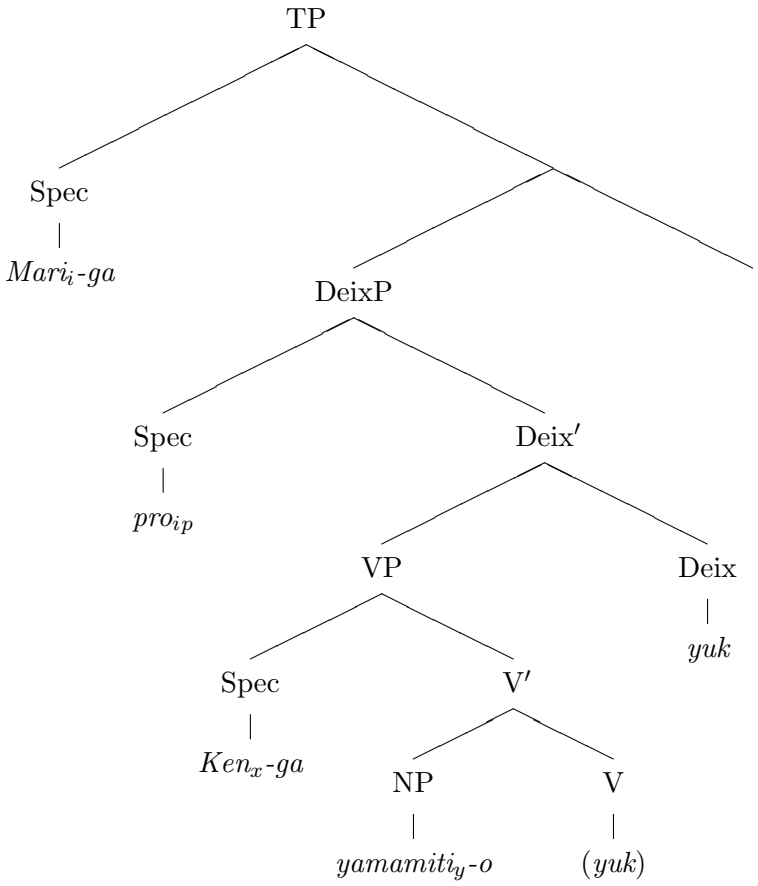
'[I] looked at the scene of Ken going along a mountain road.'

b. *Mari-ga Ken-ga yamamiti-o yuk-u-kookee-o mi-ta to it-ta.*
Mary-NOM Ken-NOM mountain.road-ACC go-PRES-scene-ACC look-PAST COMP say-PAST

'Mary said that she looked at the scene of Ken going along a mountain road.'

(61) is the tree-diagram illustrating that *Mari* will be identical to the point-of-view holder in (60b). With *Mari* in SpecTP coindexed with pro_p in SpecDeixP, I assume that *Mari* binds the argument of the point-of-view holder; therefore, in (60b), it is Mary, with whom the speaker empathizes, that watched the scene of Ken going along a mountain road, the event which *yuk* 'go' denotes. (NB some intermediate nodes are omitted in (61) for simplification). In (60a), in contrast, the speaker herself will be identical to the point-of-view holder (pro_p), because no individual who can be the possible binder of pro_p is involved in the example; thus, (60a) describes the same event from the speaker's point of view.

(61)



4.1.2 V-*yuk* 'V-go' as Movement

Now, let us look into V-*yuk* 'V-go' in Phase I. I hypothesize that the infinitival form developed from the full-verb *yuk* 'go' in this period, based on the arguments that the infinitival form was used productively in Old Japanese (Lin 1996, Kojima 2001, Shibatani & Chung 2007) and that the motion verb in question already behaved as an auxiliary in the same period (Inoue 1962, Tokumoto 2009). I assume that, at the early stage, V-*yuk* 'V-go' expressed the subject's spatial movement which can be interpreted in two different ways, depending on context: movement after the event denoted by the preceding verb ends as in (62a), or movement during the event denoted by the preceding verb as in (62b).

(62) a. 阿良多麻能 登斯賀岐布禮婆 阿良多麻能 都紀波 岐閇由久
aratamano tosi ga ki-pure ba aratamano tukwi pa ki-pe-yuku
epithet year-NOM come-pass if epithet moon-TOP come-pass-go
'As time goes by, the moon comes and then leaves.'

(*Kojiki Kayô*.28)

b. 烏智箇多能 阿邏邏麻莵麼邏 摩莵麼邏珥 和多利喩祇低
wotikata no *arara matubara* *matubara ni* *watari-yuki te*
across-GEN thin pinetree.forest pinetree.forest-DAT cross-go PRTCL

'The pinetree forest across [the river]. [We] approach the pinetree forest to fight...'

(*Nihon Shoki Kayô*.28)

In (62a), *ki-pe-yuk* 'come-pass-go' is a tripartite verbal compound, composed of *ku* 'come', *pe* 'pass', and *yuk* 'go'. The plausible interpretation of this compound will be that the subject moves after the first event denoted by the preceding verbs ends; the moon comes and then leaves. In (62b), on the other hand, the infinitival form, V-*yuk* 'V-go', has a different interpretation. This is an example taken from *Nihon Shoki Kayô*, songs in *Nihon Shoki* 'Chronicles of Japan'. The infinitival form, *watari-yuki te* 'cross-go PRTCL', in (62b) can be construed as follows: the subject approaches the pinetree forest. In other words, the two events involved in the verbal expression, *watar* 'cross' and *yuk* 'go', take place simultaneously.

As for the first interpretation, the successive-event reading as in (62a), I assume that its semantic computation will proceed as follows. (63) and (64) are the semantic representations of *ku* 'come' and *pe* 'pass', respectively. For the semantics of *ku* 'come', I assume the verb to have the arrival meaning (BE-AT (x, z_{place})) in addition to the transitional meaning (GO (x, VIA (y))) in the CONST quale. I give such a semantic value to the CONST quale of the verb in light of the arguments that *ku* 'come' linguistically entails the reaching event (Nakatani 2013) and it can denote the motion activity (Kindaichi 1950, Nakazawa 2002, Nakatani 2008; 2013). Regarding the deictic property of *ku* 'come', it can be characterized as the opposite of *yuk* 'go' by the distance function and the point-of-view function; the speaker is nearer to the endpoint of the event ($\mathbf{DIS}(p,\ Loc(e, s')) > \mathbf{DIS}(p,\ Loc(e, f))$) and watches the whole process of the activity from the endpoint of the event ($\mathbf{POV}(p) = \langle \mathbf{POINT}(e) = Loc(e, f),\ \mathbf{VIEW}(y) = \langle s, f \rangle \rangle$). On the other hand, as for the semantics of *pe* 'pass' given in (64), I assume that the verb denotes an activity ($s < f$) and only have a transitional meaning in the CONST quale.

(63)
$$\left[\begin{array}{l} \textit{ku} \text{ 'come'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y, \text{ ARG3: } z, \text{ P-ARG: } p \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p,\, \textit{Loc}(e, s')) > \mathbf{DIS}(p,\, \textit{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \textit{Loc}(e, f), \\ \qquad\qquad \mathbf{VIEW}(y) = \langle s, f \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{CAUSE ([GO } (x, \text{ VIA } (y))], \text{ [BE-AT } (x,\, z_{\text{place}})]) \end{array}\right] \end{array}\right] \end{array}\right]$$

(64)
$$\left[\begin{array}{l} \textit{pe} \text{ 'pass'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & s < f \\ \text{CONST:} & \text{GO } (x, \text{ VIA } (y)) \end{array}\right] \end{array}\right] \end{array}\right]$$

(65) is the semantic representation which I assume for *ki-pe* 'come-pass', the result of the semantics of *ku* 'come' in (63) and that of *pe* 'pass' in (64) are combined.

(65)
$$\left[\begin{array}{l} \textit{ki-pe} \text{ 'come-pass'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } \textit{VP} \left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y, \text{ ARG3: } z \end{array}\right] \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & s_1 < f_1 < s_2 < f_2 \\ \text{CONST:} & \text{CAUSE ([GO } (x, \text{ VIA } (y))], \text{ [BE-AT } (x,\, z_{\text{place}})]) \\ & \qquad \wedge \text{ GO } (x, \text{ VIA } (y)) \end{array}\right] \end{array}\right] \end{array}\right]$$

In (65), the argument structure represents *pe* 'pass' takes a VP-complement headed by *ku* 'come'. The temporal feature of *ki-pe* 'come-pass' will be $s_1 < f_1 < s_2 < f_2$ that the event denoted by *pe* 'pass' ($s_2 < f_2$) follows the event denoted by *ku* 'come' ($s_1 < f_1$). With the semantics of *ki-pe* 'come-pass' combines that of *yuk* 'go', shown in (53).

I assume that the semantics of *ki-pe-yuk* 'come-pass-go' is represented as in (66). First, the temporal feature of *ki-pe-yuk* 'come-pass-go' will be $s_2 < f_2 < s_3 < f_3$ that the event denoted by *yuk* 'go' ($s_3 < f_3$) occurs after the event denoted by *ki-pe* 'come-pass' took place. Since the event succession of *ki-pe* 'come-pass' is already defined in the compositional process of these verbs, illustrated in (65), the temporal feature of *ki-pe-yuk* 'come-pass-go' in (66) thus defines that the three events involved in this tripartite compound occur in succession, hence the successive-transitional interpretation for (62a). The compound inherits the values of the distance function and the point-of-view function specified in *yuk* 'go'. Note that $\mathbf{VIEW}(y) = \langle s_3, f_3 \rangle$ indicates that the point-of-view holder of *ki-pe-yuk* 'come-pass-go'

assumes the path along which the moon goes afterwards, not the path which the moon passed through toward her. The arrival meaning of *ku* 'come' in its CONST quale is unified with that of *yuk* 'go', which is specified as the TELIC value in NTS. Only the transitional meaning, shared by the three verbs involved, is specified as the CONST value of *ki-pe-yuk* 'come-pass-go'.

(66)
$$\left[\begin{array}{l} \textit{ki-pe-yuk} \text{ 'come-pass-go'} \\ \text{ARG} = \left[\ \text{ARG1: } \textit{VP}\left[\ \text{ARG1: } x, \text{ ARG2: } y\ \right], \text{P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s_2 < f_2 < s_3 < f_3, \\ \mathbf{DIS}(p,\ \textit{Loc}(e, s_3')) < \mathbf{DIS}(p,\ \textit{Loc}(e, f_3)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \textit{Loc}(e, s_3'), \\ \qquad\qquad \mathbf{VIEW}(y) = \langle s_3, f_3 \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (x, \text{ VIA } (y)) \end{array}\right]\right. \\ \left.\left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (x,\ z_{\text{place}}) \end{array}\right]\right] \end{array}\right]$$

Syntactically speaking, the three verbs involved in *ki-pe-yuk* 'come-pass-go' have two arguments in common, the subject who moves (x) and the path which the subject goes through (y). In the compositional process, these two arguments are shared by these three verbs, and I assume *ki-pe-yuk* 'come-pass-go' to have the argument of the point-of-view holder (P-ARG: p) remained unsaturated. Thus, the argument structure of *ki-pe-yuk* 'come-pass-go' is represented as in (66).

On the other hand, I assume that the simultaneous-transitional interpretation of V-*yuk* 'V-go', exemplified by *watari-yuki te* 'cross-go PRTCL' in (62b), is computed as follows. The semantics of the infinitival form *watari-yuk* 'cross-go' in (62b) is (68), in which the meaning of *watar* 'cross' in (67) is compositionally combined with that of *yuk* 'go' in (53). What made the simultaneous-transitional interpretation possible in (62b) is the common temporal feature of the two verbs, $s < f$, which can be unified as $s_1 = s_2 < f_1 = f_2$ in (68). Since movement denoted by *watari-yuk* 'cross-go' occurs simultaneously, $\mathbf{VIEW}(y) = \langle s_2, f_2 \rangle$ can be understood as follows: the point-of-view holder of this composite assumes the path of *yuk* 'go' which is identical the path of *watar* 'cross' (cf. the value of **VIEW** in the successive-transitional interpretation indicates that the point-of-view holder assumes the path of *yuk* 'go' only.). As for the argument structure, the argument of the point-of-view holder remains unsaturated as a result of semantic composition, while the arguments common in *watar* 'cross' and *yuk* 'go' are shared with each other.

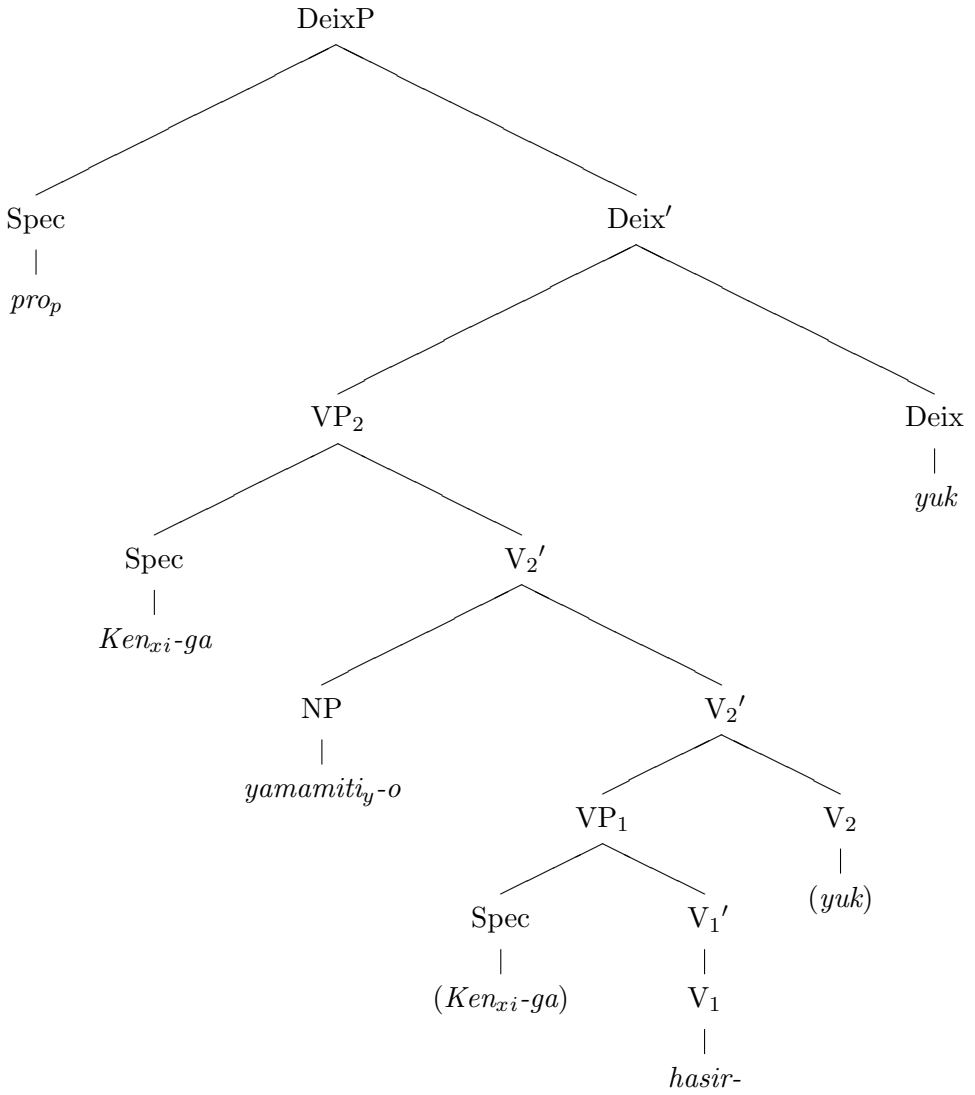
(67)
$$\left[\begin{array}{l} \textit{watar} \text{ 'cross'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } x, \ \text{ARG2: } y \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{l} \textit{TS} \\ \text{FORMAL: } s < f \\ \text{CONST: GO } (x, \text{ VIA } (y)) \end{array}\right] \end{array}\right] \end{array}\right]$$

(68)
$$\left[\begin{array}{l} \textit{watari-yuk} \text{ 'cross-go'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } \textit{VP}\left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y \end{array}\right], \text{ P-ARG: } p \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s_1 = s_2 < f_1 = f_2, \\ \mathbf{DIS}(p, \mathit{Loc}(e, s_2')) < \mathbf{DIS}(p, \mathit{Loc}(e, f_2)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \mathit{Loc}(e, s_2'), \\ \qquad \mathbf{VIEW}(y) = \langle s_2, f_2 \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (x, \text{ VIA } (y)) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (x, z_{\text{place}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

With regard to the syntactic structure of V-*yuk* 'V-go' of these movement interpretations, I assume that the infinitival form of these interpretations has a syntactic structure like (69b), which is the tree-diagram of (69a). Again, note that (69b) shows a portion of derivation which is crucial to the discussion. The derivation will proceed as follows. First, VP_1 whose head is *hasir* 'run' is formed, with the subject *Ken* merged in the specifier position of this projection. Second, *yuk* 'go' is base-generated as the head of VP_2 and the *path*-argument, *yamamiti-o* 'mountain.road-ACC', is merged; the motion verb assigns the accusative case to this argument. The subject of *yuk* 'go', *Ken*, is introduced in SpecVP_2 and it is shared with V_1, *hasir* 'run'; the subject sharing is represented by co-indexation between these subjects, indicated by the subscript i (Ken_{xi}-ga). Assuming that the motion verb as transitional meaning takes itself the subject of movement as represented in (53), I assume that the subject, *Ken*, is *introduced* in SpecVP_2 as well and it will be shared with V_1, not by subject-raising proposed by Nakatani (2013). Then, the motion verb undergoes head-movement to the head of Deixis Phrase (DeixP), with the argument of the point-of-view holder (P-ARG: p) in the specifier position of this phrase, represented by a pro_p. This pro_p is to be identified with either the speaker herself or her empathy focus.

(69) a. *Ken-ga yamamiti-o hasiri-yuk-u kookee*
Ken-NOM mountain.road-ACC run-go-PRES scene
'The scene of Ken running along a mountain road'

b.



As has been explained in the case of the lexical *yuk* 'go', postulating the argument of point-of-view holder, represented by pro_p in the structure, can explain the difference in the point-of-view holder of the event which the motion verb denotes. Consider (70a,b). (70a,b) illustrate cases in which the person who watched the event denoted by *hasiri-yuk* 'go' (i.e. the scene of Ken running along a mountain road) is different. In (70a), it is the speaker herself who watched the event; on the other hand, in (70b), it is Mary who watched the event. The fact that Mary is the point-of-view holder in the latter can be captured by assuming Mary to be the binder of pro_p (see (61) for such binding relation between Mary and pro_p).

(70) a. *Ken-ga yamamiti-o hasiri-yuk-u-kookee-o mi-ta.*
Ken-NOM mountain.road-ACC run-go-PRES-scene-ACC look-PAST

'[I] looked at the scene of Ken running along a mountain road.'

b. *Mari-ga Ken-ga yamamiti-o hasiri-yuk-u-kookee-o mi-ta*
Mary-NOM Ken-NOM mountain.road-ACC run-go-PRES-scene-ACC look-PAST
to it-ta.
COMP say-PAST
'Mary said that she looked at the scene of Ken running along a mountain road.'

Thus far, I have argued that the infinitival form, V-*yuk* 'go', can denote either movement in succession or movement occurring simultaneously. A question that arises here is why the infinitival form shows such an ambiguity in denoting movement. I argue that the ambiguity stems from the fact that verbal compounds are underdeveloped in Old and Middle Japanese; the integrity between the two verbs in V-V sequences is not semantically tight enough to inhibit other elements (e.g. adverbs, different subjects, etc.) from being inserted in the composite (Ide 1971, Sannoumaru 2009). Sannoumaru (2009: 22–23) states that the underdevelopment of verbal compounds in these period is, for example, illustrated by (71a,b).

(71) a. 二人行杼 去過難寸 秋山乎
puta-ri yukedo yuki-sugwi-kata-ki akiyama wo
two-person go.though go-pass-difficult autumn.mountain ACC
如何君之 獨越武
ika ni ka kimi ga pito-ri kwoyu ramu
how to PRTCL you NOM one-person go.across PRTCL
'How can you go across the autumn mountain alone, even though it is hard to do so by two people.'

(*Man'yôshû*.2.106)

b. . . . 於伎都奈美 多可久多知伎奴 与曾能未爾 見都追須疑由伎 . . .
oki tu nami taka-ku tati-ki-nu yoso nomwi ni mitutu sugwi-yuki
offshore wave high rise-come-PERF out only PRTCL watch.while pass-go
'As the offshore waves rose high, [I] go while watching the waves from afar.'

(*Man'yôshû*.15.3627)

In (71a,b), the meaning denoted when the verbs *yuk* 'go' and *sugw* 'pass' make a sequence does not change even though the order of these verbs alters: *yuki-sugw* 'go-pass' in (71a) whereas *sugwi-yuk* 'pass-go' in (71b). According to Sannoumaru (2009), the latter, *sugwi-yuk* 'pass-go', later acquires a different meaning: namely, semantic differentiation due to the different order of verbs. Sannoumaru (2009) argues that flexibility in the way the verbs are sequenced is an indication of the fact that verbal compounds are underdeveloped in Old and Middle Japanese. Given the morphological resemblance between V-*yuk* 'V-go' and other

V-V compounds in that the first verb connects to the second one in the form of *renyoo-kei* 'continuative form', it is speculated that there exist few fixed semantic strategies to synthesize V and *yuk* 'go' as well to make the infinitival form. Thus, the two interpretations in V-*yuk* 'V-go' expressing movement are determined only by the context where the form appears.

4.1.3 V-*yuk* 'V-go' as Aspect

In addition to the above-mentioned transitional interpretations, the infinitival form, V-*yuk* 'V-go', has aspectual meaning in Old Japanese. In regard to this point, Inoue (1962) and Tokumoto (2009) maintain that auxiliarization of *yuk* 'go' in V-*yuk* 'V-go' as movement allows the form to denote aspectual meaning. This is exemplified by *saki-yuk* 'bloom-go' and *puke-yuk* 'deepen-go' in (72a,b), instances found in *Man'yôshû*, volumes of poetry written in Old Japanese. In (72a), *saki-yuk* 'bloom-go' means that flowers on the top of trees bloom. In (72b), *puke-yuk* 'deepen-go' describes late night. V-*yuk* 'V-go' in these expressions does not express the subject's spatial movement, but it expresses a temporal meaning; therefore, the examples in (72) show that *yuk* 'go' in the infinitival form denotes aspectual meaning as early as in the period of Old Japanese.

(72) a. 打靡　　春避来之　　山際
utinabiku　　*paru sariku rasi*　　*yama no ma no*
flap.in.the.wind　spring come would　mountain-GEN between-GEN
最木末乃　　咲徃見者
topoki konure no　*saki-yuku mire ba*
far treetop-GEN　bloom-go see if
'[I] feel that the spring would soon come as [I] see treetops among mountains bloom.'

(*Man'yôshû*.10.1865)

b. 一年邇　　七夕耳　　相人之
pitotose ni　*nanuka no ywo nomwi*　*apu pito no*
one.year in　seven.day-GEN night only　meet human-GEN
戀毛不過者　　夜深徃久毛
kwopwi mo sugwi ne ba　*ywo pa puke-yuku mo*
love PRTCL pass not if　night-TOP deepen-go PRTCL
'Once a year on July 7th. Though Vega and Altair haven't met yet, dawn breaks.'

(*Man'yôshû*.10.2032)

I represent the semantics of the aspectual *yuk* 'go' as in (73). Compare (73) to (53) representing the semantics of the lexical *yuk* 'go' denoting movement. In the present study,

aspectualization of the motion verb in question is captured by removing the LCS values from the CONST quale of the lexical *yuk* 'go', under the assumption that the vacant CONST quale (ϕ) is to be filled by LCS of the preceding verb. As a consequence, the aspectual *yuk* 'go' has the temporal and POV features only in TS. Removing these features as well is unacceptable because they are essential components of the semantics of the motion verb concerned. The temporal and POV features are what make the verb *yuk* 'go' and distinguish it from other verbs; in other words, these two features characterize the eventuality and deictic property of this motion verb.

In the meantime, the aspectual *yuk* 'go' has a different argument structure from the lexical *yuk* 'go'. A noticeable difference is the loss of the subject (x) and the *path*-argument (y), the ones which the lexical *yuk* 'go' has. This is because the aspectualized motion verb no longer has a specific LCS value in the CONST quale, so that these two arguments are not syntactically realized by the verb itself. To put it differently, I assume that the aspectual *yuk* 'go' takes a proposition (or an event) which VP denotes as an argument. One may question about the remaining x in the TELIC quale (BE_{Ident}-AT (x, z_{state}))[3] ; this x, the subject undergoing the event, can be saturated by that in VP, so that compositionality is observed in this semantic structure. On the other hand, I assume that the argument of the point-of-view holder remains intact; therefore, **VIEW** takes an event, e, as its input and it expresses that the point-of-view holder assumes the whole process of the event, from the start time (s_e) to the finish time (f_e).

(73)
$$\left[\begin{array}{l} \textit{yuk} \text{ 'go' (aspect)} \\ \text{ARG} = \left[\ \text{ARG1: } \textit{VP}\left[\ \text{ARG1: } x\ \right], \text{P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p, \text{Loc}(e, s')) < \mathbf{DIS}(p, \text{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}'(e, s'), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \phi \end{array}\right] \right. \\ \left. \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (x, z_{\text{state}}) \end{array}\right] \right] \end{array}\right]$$

For example, the semantics of *puke-yuk* 'deepen-go' in (72b) is represented as in (75) as a result of semantic composition of (73) with (74). The common temporal feature of *puke* 'deepen' and the aspectual *yuk* 'go' ($s < f$) makes it possible for the start time and the

[3]To represent aspectual meaning, I follow the idea of *Identificational* proposed in Gruber's (1965) semantic field theory (see also Jackendoff (1990)).

finish time of these two verbs to be identified with each other ($s_1 = s_2 < f_1 = f_2$), and the resultative state of *puke* 'deepen' follows it. While the vacant CONST quale in the aspectual *yuk* 'go' is filled with *puke* 'deepen', the resultative meaning of *puke* 'deepen' is synthesized in the TELIC quale in the composite, since it matches with that of the aspectual *yuk* 'go'. This is induced by **POINT** and **VIEW** functions. That is, the point-of-view holder of the aspectual *yuk* 'go' looks at a certain point of the ongoing change in state which *puke* 'deepen' denotes, whereas the endpoint of the change is just implied in her view.

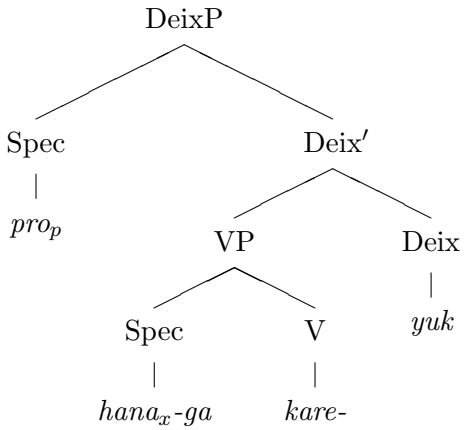
(74)
$$\left[\begin{array}{l} \textit{puke} \text{ 'deepen'} \\ \text{ARG} = \left[\ \text{ARG1: } x\ \right] \\ \text{QUALIA} = \left[\left[\begin{array}{l} \textit{TS} \\ \text{FORMAL: } s < f < r \\ \text{CONST:} \quad \text{GO}_{\text{Ident}}\ (x, \text{VIA-TO } \textit{DEEPENED}) \end{array}\right]\right] \end{array}\right]$$

(75)
$$\left[\begin{array}{l} \textit{puke-yuk} \text{ 'deepen-go'} \\ \text{ARG} = \left[\ \text{ARG1: } \textit{VP}\left[\ \text{ARG1: } x\ \right], \text{P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s_1 = s_2 \ < \ f_1 = f_2 \ < \ r_1, \\ \textbf{DIS}(p, \text{Loc}(e, s_2')) < \textbf{DIS}(p, \text{Loc}(e, f_2)), \\ \textbf{POV}(p) = \langle \textbf{POINT}(e) = \text{Loc}'(e, s_2'), \\ \qquad\qquad \textbf{VIEW}(e) = \langle s_{2e}, f_{2e} \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO}_{\text{Ident}}\ (x, \text{VIA-TO}) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT}\ (x, \textit{DEEPENED}) \end{array}\right] \end{array}\right] \end{array}\right]$$

With regard to the syntactic derivation of the aspectual V-*yuk* 'V-go', I propose that in aspectual use *yuk* 'go' occupies the head of Deixis Phrase from the outset, with the argument of the point-of-holder (pro_p) introduced in its specifier position. In other words, I assume that the head-movement, which is involved in the derivation of the lexical *yuk* 'go' or V-*yuk* 'V-go' denoting movement, is suppressed as a result of aspectualization of the motion verb in question. This is illustrated by (76b), the tree diagram of (76a). In (76b), *yuk* 'go' is introduced as the head of Deixis Phrase and the preceding verb, *kare* 'die', moves to the position to generate *kare-yuk* 'die-go'.

(76) a. *Hana-ga kare-yuk-u kookee*
flower-NOM die-go-PRES scene
'The scene of a flower going to die'

b.



The point is that in the case of aspectual *yuk* 'go' the motion verb base-generates as the head of Deixis Phrase, a functional phrase, from the beginning. This seems to be a valid assumption in light of the discussion maintained by Roberts and Roussou (2003) and Roberts (2010), who assert that as a consequence of grammaticalization head-movement of the lexical item is suppressed and the formerly-moved item is base-generated as a functional head from the outset, in a higher position than that previously assumed.

Again, the structure like (76b) captures the difference of the point-of-view holder, which is demonstrated by (77a,b).

(77) a. *Sono hana-ga kare-yuk-u-kookee-o mi-ta.*
that flower-NOM die-go-PRES-scene-ACC look-PAST
'[I] looked at the scene of the flower dying.'

b. *Mari-ga sono hana-ga kare-yuk-u-kookee-o mi-ta to it-ta.*
Mary-NOM that flower-NOM die-go-PRES-scene-ACC look-PAST COMP say-PAST
'Mary said that she looked at the scene of the flower dying.'

Thus far, I have contended that the infinitival form, V-*yuk* 'V-go', in Old Japanese bears aspectual meaning as well as movement meaning. I assume that such ambiguity in V-*yuk* 'V-go' could be attributed to the undivided concept of space and time in ancient Japanese, as Yamaguchi (2004) and Hyakutome and Hyakutome (2008) discuss. Taking examples of *watar* 'cross' from *Man'yôshû*, Yamaguchi (2004) discusses the verb's ambiguity between space and time; *watar* 'cross' at that time can express both spatial and temporal meaning. (78a,b) illustrate this point. In (78a), *watar* 'cross' describes the event that cranes fly away, that is, spatial movement of cranes. In (78b), in contrast, the verb is used to denote temporal meaning: making a precarious living.

(78) a. 櫻田部　　鶴鳴渡　　年魚市方
sakurada pye　　*tadu naki-wataru ayutigata*
cherry.blossom.field toward crane cry-cross　Atutigata lagoon
塩干二家良之　　鶴鳴渡
sipo pwi-ni-kye rasi tadu naki-wataru
tide ebb would　　crane cry-cross
'Cranes flow singing to the field where cherry blossoms are planted. The tide seems to have ebbed away in the Atsuchigata Lagoon. Cranes flow singing.'
(*Man'yôshû*.3.271)

b. 阿里佐利底 能知毛相牟等　　於母倍許曾 都由能伊能知母
ari-sarite　*noti mo apa-mu to*　*omope koso tuyu no inoti mo*
pass.CON　late too meet would think even　dew GEN life GEN
都芸都追和多礼
tugitutu watare
succeed.while cross
'Because [I] want to meet [you] even after passing time in this way, my fragile life like a dew is kept.'
(*Man'yôshû*.17.3933)

(Yamaguchi 2004: 63)

According to Yamaguchi (2004), the undivided concept of space and time in ancient Japanese is valid for verbs at large and for adverbs such as *yagate* 'in due course.' It is assumed that the unclear division between space and time makes linguistic expressions less analytic at that time, and V-*yuk* 'V-go' in Old Japanese could have ambiguous meanings: movement and aspect.

4.2 Phase Ⅱ: The Emergence of V-*te-yuk* 'V-CON-go'

Let us move on to Phase Ⅱ, in which V-*te-yuk* 'V-CON-go' emerges. While previous research (Kojima 2001, Hyakutome & Hyakutome 2008) argues that the *-te* conjunctive form has gradually replaced V-*yuk* 'V-go' since Middle Japanese, (79a,b) suggest that the transition actually begins earlier, considering the examples found in *Man'yôshû*, a poetic text published during the period of Old Japanese.

(79) a. 於伎弖伊可婆　伊毛婆麻可奈之　　母知弖由久
oki-te-ika ba　*imo ba makanasi*　*moti-te-yuku*
put-CON-go if　you-TOP PRFX-sad　have-CON-go
安都佐能由美乃　　由都可爾母我毛
adusa no yumi no　　*yutuka ni moga mo*
Japanese.cherry.birch-GEN bow-GEN　handgrip PRTCL would

'I feel sorry for you, my wife, if I leave you here and go away. I wish you were the handgrip of bow, so you can go with me.'

(*Man'yôshû*.14.3567)

b. 出弖由伎斯 日乎可俗閇都都 家布家布等
ide-te-yuki si *pi wo kazwope tutu* *kyepukyepu to*
exit-CON-go PRTCL day-ACC count while today today PRTCL
阿袁麻多周良武 知知波波良波母
a wo mata-su ramu *titipapa pa mo*
I-ACC wait-HON would father.mother-TOP PRTCL

'My father and mother would have eagerly waited for me to come back, counting the days I have left and gone.'

(*Man'yôshû*.5.890a)

In (79a), *oki-te-ika ba* 'put-CON-go if' is to be construed as two events occurring in succession: the husband moves away after he left his wife behind. The role of *te* induces such an interpretation. Since *te* originates from the completive auxiliary *tu* (Nishida 1971, Nakamura, Okami, & Sakakura 1994), it functions as an event sequencer, which puts an end to the first event and introduces the second event (Yoshida 2012): the two events are arranged in chronological order ($e_1 < e_2$). Thus, with *yuk* 'go' behaving as a main verb, the *-te* conjunctive form in early use expresses a successive event: the subject moves after the event denoted by the preceding verb ends. For example, the successive interpretation of *oki-te-yuk* 'put-CON-go' in (79a) is compositionally computed as follows. In (80), v represents the object of putting and w the place where the object exists as a result of putting; more specifically, the former is the wife of the subject and the latter is where she is after her husband left (e.g. their home) in the case of (79a).

(80)
$$\left[\begin{array}{l} \textit{ok} \text{ '(lit.) put'} \\ \text{ARG} = \left[\ \text{ARG1: } x, \text{ ARG2: } v, \text{ ARG3: } w\ \right] \\ \text{QUALIA} = \left[\left[\left[\begin{array}{l} \textit{TS} \\ \text{FORMAL: } s = f \\ \text{CONST: CAUSE ([ACT ON } (x, v)], \\ \qquad\qquad\qquad\quad \text{[BE-AT-BY } (v, w)]) \end{array}\right]\right]\right] \end{array}\right]$$

(81)
$$\left[\begin{array}{l} \textit{yuk}\text{ 'go'} \\ \text{ARG} = \left[\begin{array}{l}\text{ARG1: } x, \text{ ARG2: } y, \text{ P-ARG: } p\end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \textbf{DIS}(p, \text{Loc}(e, s')) < \textbf{DIS}(p, \text{Loc}(e, f)), \\ \textbf{POV}(p) = \langle \textbf{POINT}(e) = \text{Loc}(e, s'), \\ \qquad\qquad \textbf{VIEW}(y) = \langle s, f\rangle\rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (x, \text{ VIA } (y)) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (x, z_{\text{place}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

(82)
$$\left[\begin{array}{l} \textit{oki-te-yuk}\text{ 'put-CON-go'} \\ \text{ARG} = \left[\begin{array}{l}\text{ARG1: } \textit{TP}\left[\begin{array}{l}\text{ARG1: } x, \text{ ARG2: } v, \text{ ARG3: } w\end{array}\right], \text{ ARG2: } p\end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s_1 = f_1 < s_2 < f_2, \\ \textbf{DIS}(p, \text{Loc}(e, s_2')) < \textbf{DIS}(p, \text{Loc}(e, f_2)), \\ \textbf{POV}(p) = \langle \textbf{POINT}(e) = \text{Loc}(e, s_2'), \\ \qquad\qquad \textbf{VIEW}(y) = \langle s_2, f_2\rangle\rangle \end{array}\right] \\ \text{CONST:} & \text{CAUSE } ([\text{ACT ON } (x, v)], \\ & \qquad [\text{BE-AT-BY } (v, w)]) \\ & \qquad \wedge \text{ GO } (x, \text{ VIA } (y)) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (x, z_{\text{place}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

In the semantic composition of *oki-te-yuk* 'put-CON-go', both *ok* '(lit.) put' and *yuk* 'go' behave as full verbs because they retain their lexical meaning; the former denotes an event which the subject leaves his wife behind and the latter denotes that the subject goes away. Thus, I give the same semantic representation for the motion verb in this verbal compound as the one for the lexical *yuk* 'go'. After the composition, the temporal feature of these two verbs involved is chronologically ordered like $s_1 = f_1 < s_2 < f_2$, by the effect of *te* which functions as an event-sequencer.

In addition to the event-succession reading, the *-te* conjunctive form expresses movement occurring simultaneously as V-*yuk* 'V-go' does in the same period. Previous research assumes that V-*te-yuk* 'V-CON-go' came to allow a simultaneous interpretation in Middle Japanese (Kojima 2001, Hyakutome & Hyakutome 2008, Aoki 2012). However, the examples as in (83a,b) suggest that the semantic change in V-*te-yuk* 'V-CON-go' had already begun in Old Japanese.

(83) a. 明闇之 朝霧隠 鳴而去 鴈者言戀
akegure no asagwiri gomori naki-te-yuku kari pa wa ga kwopwi
dawn-GEN morning.fog hide sing-CON-go goose-TOP I-NOM love
於妹告社
imo ni tuge-koso
you-DAT tell PRTCL

'I wish the goose flying away while singing would bring my secret crush to the girl.'

(*Man'yôsyû*.10.2129)

b. 戀死 戀死哉 我妹
kwopwi sina ba kwopwi mo sine to ka wagimokwo ga
love die if love also die PRTCL PRTCL I.you-NOM
吾家門 過行
wagipye no kadwo wo sugwi-te-yuku ramu
my.house-GEN gate-ACC pass-CON-go would

'My sweetheart will go passing the gate of my house as if she wishes to die even though she falls in love with me.'

(*Man'yôsyû*.11.2401)

A plausible interpretation of *sugwi-te-yuk* 'pass-CON-go' in (83b) is that the two events, *sugw* 'pass' and *yuk* 'go', occur simultaneously. I argue for a new function of *te* which enables V-*te-yuk* 'V-CON-go' to bear the simultaneous-movement interpretation, a similar meaning as the older form, V-*yuk* 'V-go'. In this interpretation, *te* functions as an event-connector which links the two events involved simultaneously ($e_1 = e_2$). This view of *te*'s function as an event-connector is roughly equivalent to "event-interlacing" proposed by Nakatani (2013: 92–98). Compositionally, the simultaneous-movement interpretation of *sugwi-te-yuk* 'pass-CON-go' in (83b) is computed as follows:

(84)
$$\left[\begin{array}{l} \textit{sugw} \text{ 'pass'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{l} \textit{TS} \\ \text{FORMAL: } s < f \\ \text{CONST: } \quad \text{GO } (x, \text{ VIA } (y)) \end{array}\right] \end{array}\right] \end{array}\right]$$

(85)
$$\left[\begin{array}{l} \textit{yuk}\text{ 'go'} \\ \text{ARG} = \left[\begin{array}{l}\text{ARG1: } x,\ \text{ARG2: } y,\ \text{P-ARG: } p\end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p,\ \text{Loc}(e, s')) < \mathbf{DIS}(p,\ \text{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}(e, s'), \\ \qquad\qquad \mathbf{VIEW}(y) = \langle s, f\rangle\rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (x,\ \text{VIA } (y)) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (x,\ z_{\text{place}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

(86)
$$\left[\begin{array}{l} \textit{sugwi-te-yuk}\text{ 'pass-CON-go'} \\ \text{ARG} = \left[\begin{array}{l}\text{ARG1: } \textit{TP}\left[\begin{array}{l}\text{ARG1: } x,\ \text{ARG2: } y\end{array}\right],\ \text{ARG2: } p\end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s_1 = s_2 < f_1 = f_2, \\ \mathbf{DIS}(p,\ \text{Loc}(e, s_2')) < \mathbf{DIS}(p,\ \text{Loc}(e, f_2)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}(e, s_2'), \\ \qquad\qquad \mathbf{VIEW}(y) = \langle s_2, f_2\rangle\rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (x,\ \text{VIA } (y)) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (x,\ z_{\text{place}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

A marked contrast in (86) to the semantics of the successive-movement interpretation represented by (82) lies in the temporal feature specified in the FORMAL quale. In the simultaneous-movement reading as in (86), the start time and the finish time of each verb involved in the compound is connected respectively, thereby the temporal feature of *sugwi-te-yuk* 'pass-CON-go' being represented like $s_1 = s_2 < f_1 = f_2$. I consider that having common temporal features as well as *te* functioning as an event-connector plays a key role in making V-*te-yuk* 'V-CON-go' express a simultaneous event; this even-interlacing interpretation is possible only when a continuous or activity verb, whose temporal feature is the same as that of *yuk* 'go' ($s < f$), precedes the *-te* conjunctive form.

Now, how will the syntax of V-*te-yuk* 'V-CON-go' be when the *-te* conjunctive form is construed as the successive or simultaneous movement? Let me take (87a,b) for example; *oi-te-ik* 'put-CON-go' in (87a) is to be read as successive movement and *hasit-te-ik* 'run-CON-go' in (87b) is as simultaneous movement. Note that I here give examples of present-day Japanese for the sake of expedience.

(87) a. *Ken-ga saihu-o oi-te-ik-u.*
Ken-NOM wallet-ACC put-CON-go-PRES

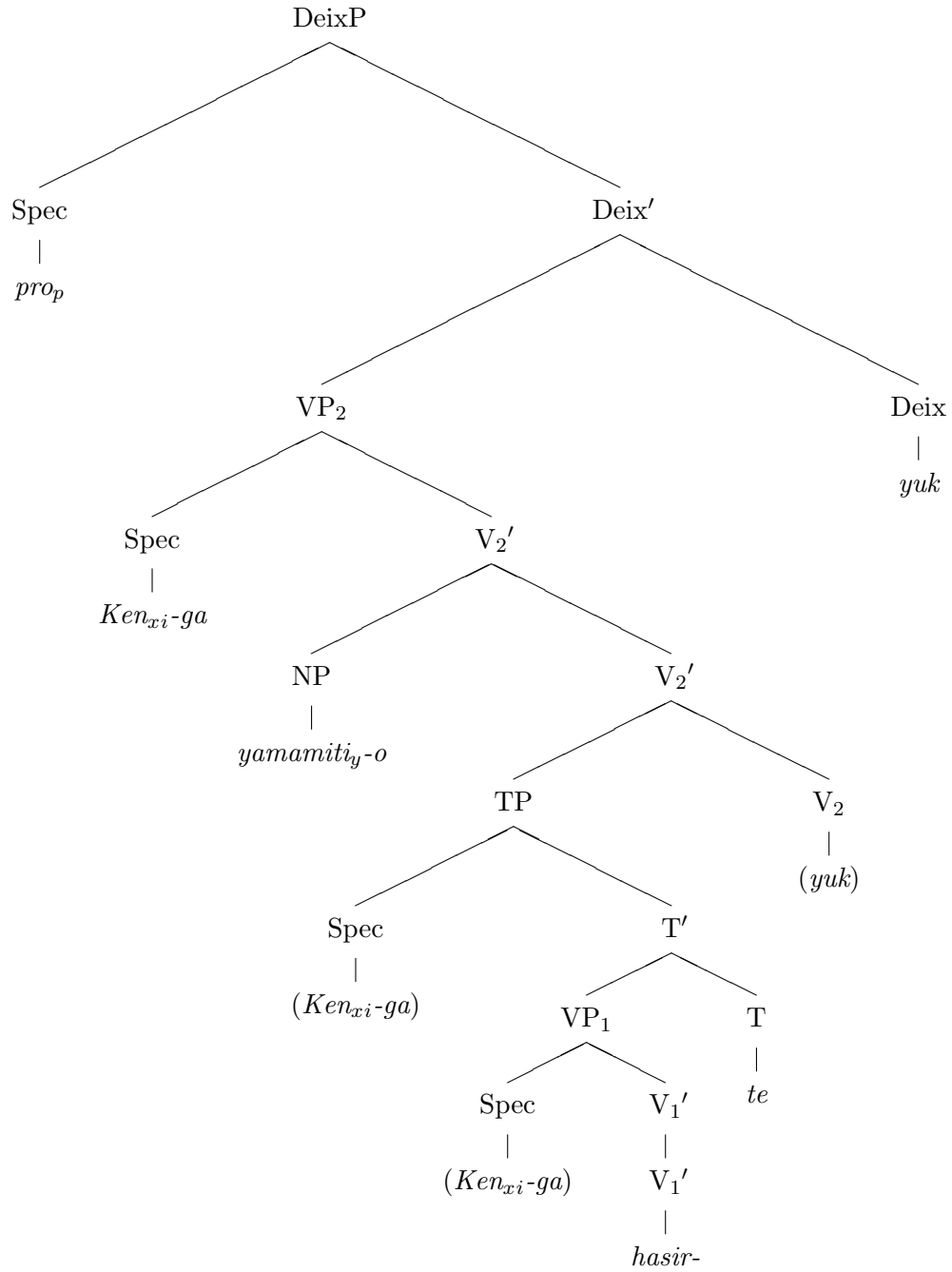
'Ken leaves his wallet.'

b. *Ken-ga yamamiti-o hasit-te-ik-u.*
Ken-NOM mountain.road-ACC run-CON-go-PRES

'Ken runs (and goes) along a mountain road.'

For these movement interpretations of V-*te-yuk* 'V-CON-go', the following structure is assumed. (88) illustrates the syntactic structure of (87b). To derive (88), firstly, V_1, *hasir* 'run', and the subject, *Ken*, form the lower VP (VP_1). On the assumption that *te* is an allomorph of a past-tense marker *ta* (Nakatani 2013), the conjunctive particle, *te*, is merged as the head of TP and the subject is raised to SpecTP from the SpecVP_1. Then, the motion verb *yuk* 'go' is merged as the head of the upper VP (VP_2) and the subject, *Ken*, is introduced to SpecVP_2; the subject sharing between the first verb, *hasir* 'run', and the second verb, *yuk* 'go', is indicated by co-indexation (Ken_{xi}-ga). The *path*-argument which *yuk* 'go' takes is introduced at the intermediate V_2' and the argument is marked with the accusative case assigned by the motion verb. Subsequently, *yuk* 'go' undergoes head-movement to the head of Deixis Phrase and accommodates the argument of point-of-view holder, which is represented by pro_p, in the specifier position of the functional projection. As a result that this pro_p is identified with the speaker or the speaker's empathy focus, the point-of-view holder (i.e. the person who looks at the event) is specified.

(88)



Consider (89a–d), for example. It is reasonable to assume that the point-of-view holder in (89a,c) is the speaker; however, it is Mary in (89b,d). Considering this contrast, postulating a pro_p in the specifier position of Deixis Phrase is crucial for explaining the syntax of the motion verb under discussion.

(89) a. *Ken-ga saihu-o oi-te-ik-u kookee-o mi-ta.*
Ken-NOM wallet-ACC put-CON-go-PRES scene-ACC watch-PAST

'[I] watched the scene that Ken went away, with his wallet left.'

b. *Mari-ga Ken-ga saihu-o oi-te-ik-u kookee-o mi-ta*
Mary-NOM Ken-NOM wallet-ACC put-CON-go-PRES scene-ACC watch-PAST
to it-ta.
COMP say-PAST
'Mary said that she watched the scene that Ken went away, with his wallet left.'

c. *Ken-ga yamamiti-o hasit-te-ik-u kookee-o mi-ta.*
Ken-NOM mountain.road-ACC run-CON-go-PRES scene-ACC watch-PAST
'[I] watched the scene that Ken ran (and went) along a mountain road.'

d. *Mari-ga Ken-ga yamamiti-o hasit-te-ik-u kookee-o*
Mary-NOM Ken-NOM mountain.road-ACC run-CON-go-PRES scene-ACC
mi-ta to it-ta.
watch-PAST COMP say-PAST
'Mary said that she watched the scene that Ken ran (and went) along a mountain road.'

4.3 Phase III: Reanalysis of V-*te-yuk* 'V-CON-go'

I propose that V-*te-yuk* 'V-CON-go' as a whole comes to bear aspectual meaning as a result of reanalysis illustrated in (90), and that the reanalysis is instigated by the historical development of Japanese V-V compounds. According to Hyakutome (2003) and Aoki (2012), genuine V-V compounds started to develop in Middle Japanese as the two verbs in the composite had semantically become more cohesive. Hyakutome (2003: 20) argues for semantic cohesiveness in verbal compounds in Middle Japanese, presenting quantitative evidence which shows that the total number of verbal compounds increases although verbs appearing in the second position diminish in number. This development of verbal compounds motivates semantic reduction of *te*. Specifically, the semantic strategy of simultaneous interpretation for verbal compounds penetrates into V-*te-yuk*, 'V-CON-go', which triggers the semantic bleaching of the conjunctive particle. Thus, the *-te* conjunctive form began to bear aspectual meaning exemplified by *tumat-te-yuk* 'shorten-CON-go' and *hik-are-te-yuk* 'attract-PSSV-CON-go', given in (91a,b).

(90) Reanalysis of V-*te-yuk* 'V-CON-go'

Before: [V-*te*] *-yuk* (event succession / event simultaneity)

After: V-[*te-yuk*] (aspect)

(91) a. その頃は　日の　詰つて行く　せわしない 秋に,
sono koro wa *hi no* *tumat-te-yuk-u* *sewasinai* *aki ni*
those days-TOP daytime-NOM shorten-CON-go-PRES busy autumn-by
誰も　注意を　惹かれる　肌寒の　季節であつた.
daremo *tyuui o* *hik-arer-u* *hadazamu no* *kisetu deat ta*
everyone attention-ACC attract-PSSV-PRES chilly season-be-PAST
'[It was when everyone was attracted] by the bustle of autumn, with daytime becoming shorter.'

(*Kokoro*)

b. 只　富岡の　脊の　高い 後姿に　心は
tada *Tomioka no* *se no* *takai* *usirosugata ni* *kokoro wa*
just Tomioka-GEN stature-GEN tall back-by heart-TOP
惹かれてゆく.
hik-are-te-yuk-u
attract-PSSV-CON-go-PRES
'I'm just attracted to Mr. Tomioka's tall back.'

(*Ukigumo*)

Here, one may question that the fact that V-*te-yuk* 'V-CON-go' acquired the simultaneous-movement interpretation *per se*, which is exemplified in (83a,b), suggests semantic bleaching of the conjunctive particle, *te*, not by the effect of the development of verbal compounds. If one takes this standpoint, the reanalysis illustrated in (90) will have a different outlook; as of V-*te-yuk* 'V-CON-go' denotes event simultaneity, *te* and *yuk* 'go' form a morphological unit as in the case of the aspectual use of the form, given below:

(92) Before reanalysis: [V-*te*] -*yuk* (event succession)
After reanalysis: V-[*te-yuk*] (event simultaneity / aspect)

I assume that this is not the case, however, considering a marked contrast which V-*te-yuk* 'V-CON-go' shows between the movement interpretations and the aspectual interpretation as to the syntactic tests to examine morphological integrity between *te* and *yuk* 'go' in the form (see Chapter 6 for details). Thus, I argue for the reanalysis of the -*te* conjunctive form for the aspectual use, as illustrated in (90), and that this morphological reconfiguration is induced by growing semantic cohesiveness in verbal compounds in Middle Japanese which in turn makes *te* semantically further bleached than the one in the event-simultaneity interpretation.

I give the same semantic representation as the semantics of aspectual V-*yuk* 'V-go' for the reanalyzed, aspectual V-*te-yuk* 'V-CON-go', as in (93). The correspondence in semantics between the two forms prompts the aspectual meaning of V-*yuk* 'V-go' to flow into V-*te-yuk* 'V-CON-go': *renewal* took place in transition from the former to the latter. Given

that renewal has been attested in the development of tense and aspect morphemes cross-linguistically (Smith 2006) and the newer form in the process usually undergoes morpho-phonological attrition, renewal is a reasonable scenario to explain the grammaticalization process of Japanese *yuk* 'go', in particular, the relationship between V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go'. For example, the compositional process of *tumat-te-yuk* 'shorten-CON-go' in (91a) proceeds as follows:

(93)
$$\left[\begin{array}{l} \textit{te-yuk} \text{ 'CON-go' (aspect)} \\ \text{ARG} = \left[\text{ ARG1: } \textit{VP}\left[\text{ ARG1: } x \text{ }\right], \text{P-ARG: } p \text{ }\right] \\ \text{QUALIA} = \left[\left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p, \text{Loc}(e, s')) < \mathbf{DIS}(p, \text{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}'(e, s'), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \phi \end{array}\right], \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (x, z_{\text{state}}) \end{array}\right]\right] \end{array}\right]$$

(94)
$$\left[\begin{array}{l} \textit{(hi-no) tumar} \text{ 'shorten'} \\ \text{ARG} = \left[\text{ ARG1: } x \text{ (= daytime) }\right] \\ \text{QUALIA} = \left[\left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & s < f < r \\ \text{CONST:} & \text{GO}_{\text{Ident}} (x, \text{VIA-TO } \textit{SHORT}) \end{array}\right]\right] \end{array}\right]$$

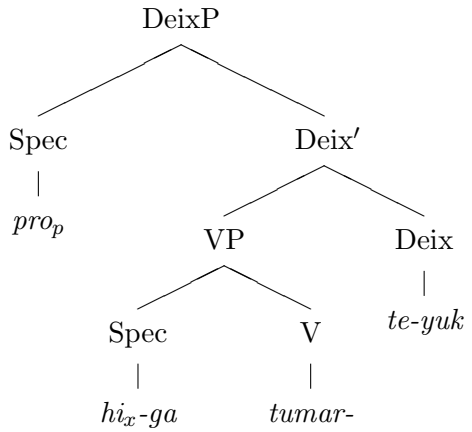
(95)
$$\left[\begin{array}{l} \textit{tumat-te-yuk} \text{ 'shorten-CON-go'} \\ \text{ARG} = \left[\text{ ARG1: } \textit{VP}\left[\text{ ARG1: } x \text{ }\right], \text{P-ARG: } p \text{ }\right] \\ \text{QUALIA} = \left[\left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s_1 = s_2 < f_1 = f_2 < r_1, \\ \mathbf{DIS}(p, \text{Loc}(e, s_2')) < \mathbf{DIS}(p, \text{Loc}(e, f_2)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}'(e, s_2'), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_{2e}, f_{2e} \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO}_{\text{Ident}} (x, \text{VIA-TO}) \end{array}\right], \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (x, \textit{SHORT}) \end{array}\right]\right] \end{array}\right]$$

As I have proposed for the aspectual V-*yuk* 'V-go', the argument structure of the reanalyzed V-*te-yuk* 'V-CON-go', represented in (93), suggests that the *-te* conjunctive form structurally

differs from the one before reanalysis. Similar to the aspectual V-*yuk* 'V-go', the reanalyzed V-*te-yuk* 'V-CON-go' takes a VP as a complement in addition to the argument of point-of-view holder.

(96) illustrates the syntactic structure which I propose for the reanalyzed form of V-*te-yuk* 'V-CON-go'. What is different from the syntax of the pre-reanalyzed V-*te-yuk* 'V-CON-go' is that *te-yuk* 'CON-go' as a whole, not *yuk* 'go' only, occupies the head of Deixis Phrase from the outset, with a pro_p, the argument of point-of-view holder, in SpecDeixP. In the syntactic derivation of the reanalyzed V-*te-yuk* 'V-CON-go', a TP projected by *te* no longer exists as a result of the morphological reconfiguration between *te* and *yuk* 'go', and no head-movement of *yuk* 'go', movement from V to Deix, is involved in the derivation. Here, I argue for the structural correspondence in the aspectual use between V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go' (cf. (96) versus (76b)). More discussion about syntactic evidence for the morphological reconfiguration in the aspectual use of V-*te-yuk* 'V-CON-go' will appear in Chapter 6.

(96)



4.4 Phase IV: Renewal from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go'

In the previous sections, I have presented a formal-semantic analysis of how *yuk* 'go' in Japanese has developed into the two grammaticalized forms—the infinitival form, V-*yuk* 'V-go', and the *-te* conjunctive form, V-*te-yuk* 'V-CON-go'—in the process of grammaticalization. With the lexical *yuk* 'go' remaining extant, the infinitival form and the *-te* conjunctive form have been in competition with each other; from a diachronic viewpoint, the former has been on the gradual decrease while the latter has been on the gradual increase (Lin 1996, Hyakutome 2003, Shibatani & Chung 2007). To explain the transition from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go', I proposed the reanalysis of the *-te* conjunctive form, shown in (90), which makes these two forms corresponding both in the semantic and the syntactic levels. This semantic-syntactic correspondence between them motivates the

renewal from the older, infinitival form to the newer, *-te* conjunctive form. A general tendency of the decline of the V_1[infinitive] + V_2 form in favor of the V_1-*te*-V_2 form in the same period being partly a reason as well, consequently, the latter has become predominant and driven the infinitival form into near-extinction in present-day Japanese.

Pieces of evidence for the fact that the infinitival form, V-*yuk* 'V-go', is on the verge of extinction are offered by Arai and Hidaka (2013a). They examine the characteristics of the form in present-day Japanese in terms of i) selectional restrictions on the preceding verbs, ii) meaning and environment where the form can occur, iii) co-occurrence with phrases denoting goal/resultative state, and iv) the point-of-view holder. Of these, the first two points specifically characterize the decline of the infinitival form nowadays.[4] Firstly, V-*yuk* 'V-go' in present-day Japanese has selectional restrictions on the preceding verbs in contrast to the *-te* conjunctive form, V-*te-yuk* 'V-CON-go'. Observe the following examples:

(97) a. *hasiri-yuk* 'run-go', *susumi-yuk* 'move-go', *nagare-yuk* 'flow-go', (*kawa-o*) *nobori-/kudari-yuk* 'up-/down-go (a river)', ?*aruki-yuk* 'walk-go', ?(*tooge-o*) *koe-yuk* 'cross-go (a mountain path)', ?**oyogi-yuk* 'swim-go', ?**hai-yuk* 'crawl-go', ?**sakebi-yuk* 'scream-go', ?**hataraki-yuk* 'work-go', ?**asobi-yuk* 'play-go', ?**warai-yuk* 'laugh-go', **mi-yuk* 'see-go', **kowasi-yuk* 'destroy-go', **nomi-yuk* 'drink-go', **tabe-yuk* 'eat-go', **utai-yuk* 'sing-go', etc.

b. *kare-yuk* 'die-go', *hukamari-yuk* 'deepen-go', *sugi-yuk* 'pass-go', *uturi-yuk* 'change-go', *nari-yuk* 'become-go', *otoroe-yuk* 'decay-go', *kure-yuk* 'darken-go', *ake-yuk* 'lighten-go', etc.

(Arai & Hidaka 2013a)

(98) a. *hasit-te-yuk/ik* 'run-CON-go', *susun-de-yuk/ik* 'move-CON-go', *nagare-te-yuk/ik* 'flow-CON-go', (*kawa-o*) *nobot-/kudat-te-yuk/ik* 'up-/down-CON-go (a river)', *arui-te-yuk/ik* 'walk-CON-go', (*tooge-o*) *koe-te-yuk/ik* 'cross-CON-go (a mountain path)', *oyoi-de-yuk/ik* 'swim-CON-go', *hat-te-yuk/ik* 'crawl-CON-go', *saken-de-yuk/ik* 'scream-CON-go', *hatarai-te-yuk/ik* 'work-CON-go', *ason-de-yuk/ik* 'play-CON-go', *warat-te-yuk/ik* 'laugh-CON-go', *mi-te-yuk/ik* 'see-CON-go', *kowasi-te-yuk/ik* 'destroy-CON-go', *non-de-yuk/ik* 'drink-CON-go', *tabe-te-yuk/ik* 'eat-CON-go', *utat-te-yuk/ik* 'sing-CON-go', etc.

[4] I will not look into the third and fourth points here, for I have mentioned the fourth points in previous sections, and the third point has no direct bearing on the present discussion. I refer the readers to Arai and Hidaka (2013a) for details about these points.

b. *kare-te-yuk/ik* 'die-CON-go', *fukamat-te-yuk/ik* 'deepen-CON-go', *sugi-te-yuk/ik* 'pass-CON-go', *utut-te-yuk/ik* 'change-CON-go', *nat-te-yuk/ik* 'become-CON-go', *otoroe-te-yuk/ik* 'decay-CON-go', *kure-te-yuk/ik* 'darken-CON-go', *ake-te-yuk/ik* 'lighten-CON-go', etc.

Comparison of acceptability between (97) and (98) illustrates the selectional restrictions which the infinitival form has on the preceding verbs. To be specific, it is evident that the infinitival form in present-day Japanese allows only a portion of unergative verbs and unaccusative verbs to precede it, but does not allow any transitive verbs to do so; in contrast, the *-te* conjunctive form accepts any of these verbs. Additionally, the fact that the infinitival form is more compatible with unaccusative verbs as in (97b) than with unergative or transitive verbs as in (97a) suggests that the infinitival form of transitional meaning—successive movement and simultaneous movement—is closer to extinction than the one of aspectual meaning.

Moreover, the environments where the infinitival form can occur are restricted; the form can only occur in adnominal clauses and cannot be used as the predicate of matrix clauses (Arai & Hidaka 2013a), which is exemplified below. Compare (99a–f) to (100a–f). As shown in (100a–f), the *-te* conjunctive form is acceptable as the predicate of matrix clauses as well as in adnominal clauses; however, the infinitival form in present-day Japanese is only acceptable in the latter, as shown in (99a–f). Such a contrast, too, demonstrates that the infinitival form is driven to the brink of extinction in presen-day Japanese.

(99) a. *Ken-ga kono miti-o hasiri-yuk-u kookee*
Ken-NOM this road-ACC run-go-PRES scene
'The scene of Ken running along this road'

b. *Zyooki-kikansya-ga tekkyoo-o hasiri-yuk-u kookee*
steam-locomotive-NOM iron.bridge-ACC run-go-PRES scene
'The scene of a steam locomotive going on the iron bridge'

c. *Hana-ga kare-yuk-u kookee*
flower-NOM die-go-PRES scene
'The scene of a flower going to die'

d. ?**Ken-ga kono miti-o hasiri-yuk-u.*
Ken-NOM this road-ACC run-go-PRES
'Ken runs along this road.'

e. **Zyooki-kikansya-ga tekkyoo-o hasiri-yuk-u daroo.*
steam-locomotive-NOM iron.bridge-ACC run-go-PRES will
'A steam locomotive will go on the iron bridge.'

f. **Huyu-ni-wa hana-ga kare-yuk-u.*
winter-in-TOP flower-NOM die-go-PRES
'Flowers go dying in the winter.'

(Arai & Hidaka 2013a)

(100) a. *Ken-ga kono miti-o hasit-te-yuk/ik-u kookee*
Ken-NOM this road-ACC run-CON-go-PRES scene
'The scene of Ken running along this road'

b. *Zyooki-kikansya-ga tekkyoo-o hasit-te-yuk/ik-u kookee*
steam-locomotive-NOM iron.bridge-ACC run-CON-go-PRES scene
'The scene of a steam locomotive going on the iron bridge'

c. *Hana-ga kare-te-yuk/ik-u kookee*
flower-NOM die-CON-go-PRES scene
'The scene of a flower going to die'

d. *Ken-ga kono miti-o hasit-te-yuk/ik-u.*
Ken-NOM this road-ACC run-CON-go-PRES
'Ken runs along this road.'

e. *Zyooki-kikansya-ga tekkyoo-o hasit-te-yuk/ik-u daroo.*
steam-locomotive-NOM iron.bridge-ACC run-CON-go-PRES will
'A steam locomotive will go on the iron bridge.'

f. *Huyu-ni-wa hana-ga kare-te-yuk/ik-u.*
winter-in-TOP flower-NOM die-CON-go-PRES
'Flowers go dying in the winter.'

(Arai & Hidaka 2013a)

It is assumed that the infinitival form is no longer used as the predicate of a matrix clause, because the past-tense marker *ki/keri*, which was once prevalent in the older Japanese (Chamberlain 1887, Suzuki 2009), has been replaced by *ta*, and thus the past-tense form of V-*te-ik* 'V-CON-go', V-*te-it-ta* 'V-CON-go-PAST', becomes predominant instead in present-day Japanese. Under this assumption, still, a question remains about why the infinitival form is restricted to adnominal clauses in present-day Japanese. The observation presented in Kageyama (2014) may be suggestive of this issue. He argues that N-V compounds undergo nominalization in adnominal clauses, a type of non-finite constructions; for example, *miti-yuk (hito)* '(lit.) a person who goes' cannot be used in a finite sentence, hence **Kare-wa isoi-de miti-yut/it-ta* '*He hurriedly road-went'. Assuming from his argument, the infinitival form may be perceived as a N-V compound in present-day Japanese, not as a kind of V-V compounds any longer; therefore, it is used in adnominal clauses but not as a matrix

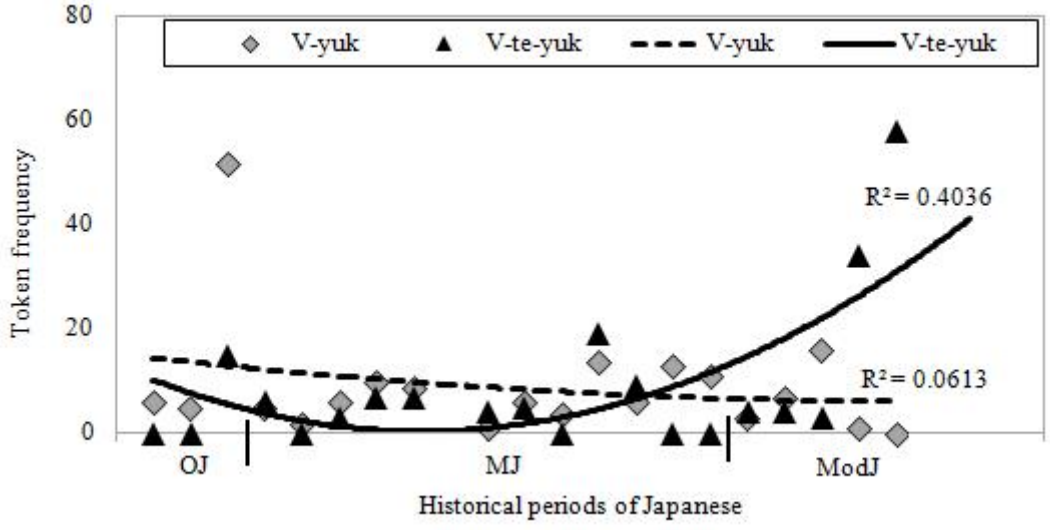


Figure 4: Chronological change from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go'.

predicate. In other words, the loss of erstwhile past-tense markers and nominalization in adnominal clauses may restrict the occurrence of V-*yuk* 'V-go' in present-day Japanese. I leave this question open for future research.

With regard to the replacement of the infinitival V-*yuk* 'V-go' by the *-te* conjunctive V-*te-yuk* 'V-CON-go', I present the result of a corpus-based survey to illustrate the transition diachronically. Observe Figure 4. Data for this survey is amassed from the historical corpora which I employed in the present study (see Section 3.4 in Chapter 3). Marks and lines in this figure represent the followings respectively. The diamonds in gray show the token frequency of (i.e. the number of) V-*yuk* 'V-go' in each text; the black triangles show the token frequency of V-*te-yuk* 'V-CON-go' in each text; the dotted line illustrates the chronological change of V-*yuk* 'V-go'; the solid line is for the chronological change of V-*te-yuk* 'V-CON-go'. Marks showing the token frequency of these two grammaticalized forms are arranged in chronological order according to the date of issue of each text. Figure 4 shows that V-*te-yuk* 'V-CON-go' is on the increase and V-*yuk* 'V-go' decreases to the contrary. This figure, in other words, is an empirical illustration of the renewal from the infinitival form to the *-te* conjunctive form.

4.5 Summary

This chapter has presented a formal-semantic analysis of the grammaticalization process of *yuk* 'go' in Japanese, focusing on elucidating the interrelationship among the three forms involved in the process, the lexical *yuk* 'go', the infinitival V-*yuk* 'V-go', and the *-te* conjunctive

Table 10: The grammaticalization process of *yuk* 'go' in Japanese.

Phase I Before OJ	Phase II OJ (–794)	Phase III MJ (–1600)	Phase IV ModJ (1600–)
yuk	⟶	⟶	***yuk***
↓			
V-*yuk* Movement after V Movement while V Aspect	⟶	*gradual decrease* ⟶	**V-*yuk*** (Movement after V) (Movement while V) Aspect
	V-*te-yuk* ⟶	*gradual increase* ⟶	**V-*te-yuk*** **[V-te]-yuk** Movement after V Movement while V
		REANALYSIS **V-[te-yuk]** Aspect	**V-[te-yuk]** Aspect
		↑ bleaching of *te*	
	V-V compounds ⟶	(V_1 & V_2 becoming cohesive) ⟶	

V-*te-yuk* 'V-CON-go'. Having hypothesized that the historical development of the motion verb has passed through four phases, as shown in Table 9, I elucidated the three forms under discussion from a perspective of Generative Lexicon (Pustejovsky 1995, Kageyama 2005, Hidaka 2012), in chronological order from Phase I through Phase IV.

To conclude, I submit that the grammaticalization process of Japanese *yuk* 'go' is as shown in Table 10. I discussed that *yuk* 'go' in V-*yuk* 'V-go' had already converbalized in as early as Phase I and the infinitival form has aspectual meaning as well as two movement meanings: event-sequential movement and simultaneous movement, which are determined exclusively by context. V-*te-yuk* 'V-CON-go' later emerges in Phase II. At its earliest use, I proposed that *te* functions as an event-successor, which induces an event-sequential interpretation of the *-te* conjunctive form. I demonstrated that the form is to be construed as simultaneous movement when the aspectual properties of the two verbs involved coincide. In Phase III, V-*te-yuk* 'V-CON-go' acquires the aspectual meaning which V-*yuk* 'V-go' has originally denoted. The aspectual intepretation is added to V-*te-yuk* 'V-CON-go' as *te* semantically bleached in tandem with the development of verbal compounds in Japanese,

which causes the *-te* conjunctive form to be reanalyzed: [V-*te*]-*yuk* > V-[*te-yuk*]. I argued that the difference in productivity between V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go' in diachrony is the consequence of renewal from the infinitive form to the *-te* conjunctive form, thereby motivating the latter to be used more productively in wider environments afterwards. The renewal process instigates V-*te-yuk* 'V-CON-go' to be used in wider environments; it makes the *-te* conjunctive form more productive and frequent, the infinitival form becomes less productive and falls into decline in the meantime. It is assumed that the diffusion of the *-te* conjunctive form seems to be further promoted by *Genbun Icchi*, unification of the written and spoken Japanese, which was begun in the late 1800s.

With regard to the renewal from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go', I argued that the reanalysis of the latter, in which the semantic bleaching of both *te* and *yuk* 'go' is involved, instigates the semantic-syntactic correspondence between these forms, and that the aspectual meaning is taken on by the newer, *-te* conjunctive form. Syntactically speaking, I argued that the head-movement of *yuk* 'go' (i.e. V-to-Deix movement) is suppressed in the reanalyzed V-*te-yuk* 'V-CON-go' denoting aspectual meaning, and *te-yuk* 'CON-go' as a whole is base-generated as the head of Deixis Phrase from the outset. Provided that the Deixis Phrase is a functional category (Nishigauchi 2009, 2014), the scenario which I presented in this chapter should corroborate the syntactic change as a result of grammaticalization, which is maintained by Roberts and Roussou (2003, 2010): the formely-moved elements are first generated in a higher position in the syntactic structure. As for the category change which a verb undergoes in the grammaticalization process, they state that the verb changes into a head of functional category, which can be realized as one category of Cinque's (1999) hierarchy of functional categories. What needs to be examined further is whether the category change in V-*te-yuk* 'V-CON-go' as a result of reanalysis—*te-yuk* 'CON-go' as a whole becomes the Deix head in the aspectual case—is valid for explaining the renewal process in the grammaticalization of the motion verb in question. In other words, the reanalysis of V-*te-yuk* 'V-CON-go' discussed in this chapter is semantics-based, proposing the parallel structure between V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go' for reasoning the renewal process from the former to the latter; this hypothesis needs to be supported by syntactic evidence. I will discuss this issue more in Chapter 6.

Chapter 5 Corpus-based Analysis of Phonetic Reduction of V-*te-yuk* 'V-CON-go'

In the previous chapter, I have given formal accounts of the first and the second problems which I raised for the present research, that is, the interrelationship among the three forms appearing in the grammaticalization process of Japanese *yuk* 'go'—the full-verb *yuk* 'go', the infinitival V-*yuk* 'V-go', and the *-te* conjunctive V-*te-yuk* 'V-CON-go'—as well as the characteristics of the infinitival form. Now in this chapter, I am going to address the third question remaining in the literature: a question of why the *-te* conjunctive form, V-*te-yuk* 'V-CON-go', undergoes phonetic reduction, whereby the form varies between V-*te-ik* and V-*te-k*, without changing its referential value. I give (101a,b) for an illustration.

(101) a. *Ensoku-e takusan okasi-o mot-te-ik-u.*
excursion-DAT many snack-ACC have-CON-go-PRES
'I am going to bring a lot of snacks on school excursion.'

b. *Ensoku-e takusan okasi-o mot-te-k-u.*
excursion-DAT many snack-ACC have-CON-go-PRES
'I am going to bring a lot of snacks on school excursion.'

The point is that the sentential meaning does not change in (101b) even though *mot-te-ik-u* phonetically reduces to *mot-te-k*. In light of the definition of a linguistic variable held in Variationist Sociolinguistics (e.g. Weinreich et al. 1968, Tagliamonte 2006), I consider phonetic reduction of the *-te* conjunctive form to be an instance of language variation. Additionally, according to the grammaticalizationist point of view, phonetic reduction is a salient phenomenon showing a certain morpheme being in the course of grammaticalization; reductive changes are usually observed in a form which is at the advanced stage of the historical process. This suggests that V-*te-yuk* 'V-CON-go' manifests the advancement of the grammaticalization of the Japanese motion verb in question, and it thus implies that the *-te* conjunctive form is at a more advanced stage in the process than the infinitival form, V-*yuk* 'V-go' (see also Shibatani and Chung (2007)). Therefore, it is meaningful to look into the reductive change in V-*te-yuk* 'V-CON-go' in the context of the grammaticalization of Japanese *yuk* 'go', which I have explored thus far in this dissertation.

In examining the reductive change in question, I employ the methodology of Variationist Sociolinguistics as I have introduced in Section 3.3 in Chapter 3, and data amassed from

Corpus of Spontaneous Japanese, which contains speech data of modern spoken Japanese with rich annotation (see Section 3.4.2 in Chapter 3 for more details about the present data). A more detailed procedure for data collection as well as for defining the environments in which the reductive change occurs will be explained in Section 5.1. Section 5.2 introduces the linguistic and social factors which are to be examined in the present analysis. The results of analyses are to be shown in two ways. Section 5.3 discusses the results of factor-by-factor analyses, the analyses looking at the effect of each factor individually. I will present the result of a multivariate analysis in Section 5.4 and discuss which factor exert their influences on causing the phonetic reduction of V-*te-yuk* 'V-CON-go', as well as the effect magnitude of significant factors. Summary of this chapter will appear in Section 5.5.

5.1 Data Collection and Variable Environments

Figure 5 illustrates the procedure which I took for collecting data for the present research.

Step 1

Collect all V-*te-ik* and V-*te-k* tokens in Simulated Public Speaking (SPS) from Corpus of Spontaneous Japanese (5,564 tokens).

↓

Step 2

Eliminate tokens which lack part of information on speaker's attributes or speech.

↓

Step 3

Circumscribe the variable contexts by excluding the four environments:

1. V-*te-ik* in which a particle or filler exists between *-te* and *ik*.
2. Both V-*te-ik* and V-*te-k* which ends with an honorifix suffix *-masu*.
3. Both V-*te-ik* and V-*te-k* to which a desiderative suffix *-tai* attaches.
4. V-*te-yuk* instances.

↓

Step 4

Eliminate tokens whose token frequency is less than three times when V-*te-ik* and V-*te-k* combined.

↓

Step 5

Eliminate tokens whose preceding verbs are not listed in the frequency dictionary.

Figure 5: The process of data collection.

I first collected all tokens of V-*te-ik* 'V-CON-go' and its reduced form, V-*te-k*, which are tagged as *teiku* in SPS, together with information on the speaker's attributes (birth year, birthplace, etc.) and on her speech (e.g. speech spontaneity, formality, etc.). The sample at this stage contains 5,564 instances of the *-te* conjunctive form in question (Step 1). Of the first sample, 107 records were excluded because part of the information on the speaker's attributes or on her speech is not fully available, which is marked by 'nr' or '–' in the corpus (Step 2). I further examined the remaining 5,457 instances of V-*te-ik* and V-*te-k* in order to define the genuine environments in which the concerning variable phenomenon occurs, what are called *the envelope of variation* in Variationist Sociolinguistics (see Tagliamonte (2006)) (Step 3). Specifically, I avoid including the following four environments: i) V-*te-ik* 'V-CON-go' in which a particle or filler exists between the *-te* conjunctive particle and *ik* 'go', ii) both V-*te-ik* and V-*te-k* which ends with an honorifix suffix *-masu*, iii) the desiderative forms such as V-*te-iki-tai* '-CON-go-DESI' and their reduced forms V-*te-ki-tai*, and iv) the *-te* conjunctive form which is pronounced as V-*te-yuk*. These environments are excluded from the present analysis for the following reasons.

In the present study, I assume that the phonetic reduction concerned appears only when the two vowels, /e/ at the end of the *-te* conjunctive particle and the initial vowel /i/ of *ik* 'go', are adjacent. In other words, any elements such as a particle or filler within such a vowel sequence may hinder the variation from occurring. Thus, V-*te-ik* 'V-CON-go' of this type, as exemplified in (102a,b), is not examined in the present analysis.

(102) a. *Nooto-o mot-te-wa-it-ta ga, pen-o wasure-te-simat-ta.*
notebook-ACC bring-CON-TOP-go-PAST but pen-ACC forget-CON-EVAL-PAST
'Although I brought a notebook, I forgot bringing a pen.'

b. *Nooto-o mot-te-ee-it-ta ga, pen-o wasure-te-simat-ta.*
notebook-ACC bring-CON-filler-go-PAST but pen-ACC forget-CON-EVAL-PAST
'Although I brought a notebook, I forgot bringing a pen.'

The second and the third cases, as exemplified in (103a,b), are gotten rid of, because it is hard to tell the reduced forms of these types, V-*te-ki-masu* 'V-CON-go-HON' and V-*te-ki-tai* 'V-CON-go-DESI', from the honorified and desiderative form of V-*te-ku* 'V-CON-come', V-*te-ki-masu* 'V-CON-come-HON' and V-*te-ki-tai* 'V-CON-come-DESI', due to their morphological

resemblance. Including the honorified and desiderative forms of V-*te-ik* 'V-CON-go' would not raise any problems as long as analyses are conducted by using corpora such as CSJ, since annotation given in corpora enables us to identify the target forms correctly. From a scientific viewpoint, however, research should be replicable when someone uses other data; thus, I decide to include neither the unreduced nor the reduced forms of V-*te-iki-masu* 'V-CON-go-HON' and V-*te-iki-tai* 'V-CON-go-DESI'.

(103) a. *Taroo-wa gakkoo-ni bentoo-o mot-te-{iki/ki}-masi-ta.*
Taro-TOP school-DAT lunch box-ACC bring-CON-go-HON-PAST
'Taro brought his lunch box to school.'

b. *Daigaku-de-wa gengogaku-o manan-de-{iki/ki}-tai.*
university-CON-TOP linguistics-ACC study-CON-go-DESI
'[I] want to study linguistics at university.'

Lastly, the *-te* conjunctive form pronounced as V-*te-yuk* is excluded from the present analysis, since the initial vowel /i/ of *ik* 'go' is replaced by /yu/, as exemplified in (104). Although this phonological alternation seems to be another interesting topic to investigate, the vowel sequence is assumed to be the prerequisite for the phonetic reduction concerned; therefore, V-*te-yuk* are removed from the present data.

(104) *Kono toori-o arui-te-yuk-u to, eki-ni tuki-mas-u.*
this street-ACC walk-CON-go-PRES if station-DAT reach-HON-PRES
'If you walk along this street, you can reach the station.'

After circumscribing the variable environments, I pay attention to the token frequency in terms of a verb which precedes the *-te* conjunctive form, in order to examine whether the frequency effect plays any roles in choosing one variant from the other in the reductive change under discussion. For this purpose, I remove the tokens of with low frequency; specifically, removed are the ones whose total number of the unreduced form (V-*te-ik*) and the reduced form (V-*te-k*) is less than three times in the sample (Step 4). Of the remaining 4,538 instances, with 563 different verbs, 361 verbs are subject to further elimination at this step. This is because approximately 65% of the verbs (= 361/563×100) in the remaining sample (near-)categorically select one of the variants in question; in other words, they virtually do not show any linguistic variation and may skew the result when the verb frequency is taken into consideration. Additionally, as the final step (Step 5), the tokens whose preceding verbs are not listed in *A Frequency Dictionary of Japanese* (Tono, Yamazaki, & Maekawa 2013), the frequency dictionary which I refer to, are also removed from the sample for the present analysis. As a result of delimiting the variable environments based on these methodological

criteria, the final sample, consisting of 523 speakers (290 females and 233 males) and 189 verbs, contains 4,029 tokens of the unreduced form (V-*te*-*ik*) and the reduced form (V-*te*-*k*) in total, with 2,972 instances of the former and 1,057 instances of the latter (Table 11).

Table 11: The overall distribution of variants in the present data.

V-*te*-*ik*	V-*te*-*k*	N
73.8% (2,972/4,029)	26.2% (1,057/4,029)	100.0% (4,029/4,029)

5.2 Factors

For the final sample summarized in Table 11, I conduct a variationist analysis in order to identify by what effect the phonetic reduction is caused in V-*te*-*ik* 'V-CON-go'. There are few previous studies which have explored this question. Studies such as Shibatani (2007a) and Shibatani and Chung (2007) suggest that contraction of V-*te*-*ik* 'V-CON-go' depends on semantic congruity between *ik* 'go' and the verb which precedes the -*te* conjunctive form (Shibatani 2007a: 31). As for a similar reductive change, studies such as Ishikawa (1958), Sakanashi (2002), and Miyajima (2006) argue that the phonological length of the preceding verb plays a role when V-*te*-*ir* 'V-CON-be' reduces to V-*te*-*r*. Considering these previous studies, it may be assumed that the phonetic reduction in V-*te*-*ik* 'V-CON-go' may be affected by linguistic factors, and that linguistic factors may uniquely exert their influences on such a reductive change. However, it is unlikely that a variable phenomenon is constrained by a single factor, be it linguistic or not, because it has widely been verified that linguistic variation is caused not only by linguistic environments in which a concerning linguistic variable appears but also by extralinguistic properties such as speaker's gender, educational backgrounds, socioeconomic class, and so forth, according to research in the framework of Variationist Sociolinguistics, as Chambers (2009: 17) puts: "The occurrence of one or another of the variants may thus correlate with some linguistic factor in the environment, [...] Non-linguistic factors may also be found to correlate." (I also refer the readers to the series of studies by William Labov (Labov 1994, 2001, 2010)).

Thus, from a variationist viewpoint, it is reasonable to assume that the phonetic reduction in V-*te*-*ik* 'V-CON-go' is influenced by multiple factors, not by a single semantic factor as suggested by Shibatani (2007a) and Shibatani and Chung (2007). In what follows, I introduce the linguistic and social factors which are taken into consideration in the

present analysis. For linguistic factors, I assume the following four properties: verb length, context, verb frequency, and meaning of *ik* 'go'. For social factors, I assume the following eight properties: speaker's years of birth, speaker's gender, geography, education, speech spontaneity, speech style, speech skillfulness, and speech experience.

5.2.1 Verb Length

The first linguistic factor assumed is the length of the preceding verb in V-*te-ik* 'V-CON-go'. I take this factor, because it has been observed that i) the verb length exerts an influence on a similar reductive change occurring in V-*te-ir* 'V-CON-be' (Ishikawa 1958, Sakanashi 2002, Miyajima 2006), and ii) it is one of the principal linguistic factors conditioning morphological variation and change in Japanese (e.g. Matsuda 1993, Sano 2009). The former studies argue that contraction of V-*te-ir* 'V-CON-be' is more likely to occur when bimoraic verbs precede the *-te* conjunctive form. According to the latter studies, for example, the *ra*-deletion in the potential suffix *-rare* in Japanese, where *tabe-rare* 'eat-can' reduces to *tabe-re*, is said to have started at one-mora or two-mora verbs and gradually permeates to longer verbs of three or four mora long. A similar tendency is also found in language change in the Japanese causative morpheme.

Based on these observations, I assume that that the phonetic reduction in V-*te-ik* 'V-CON-go' could also be conditioned by the length of preceding verbs. In the present analysis, the effect of verb length is examined by categorizing the stem of preceding verbs into four different types of length: one-mora type (1m), two-mora type (2m), three-mora type (3m), and more-than-four-mora type (4m+). While there are substantial tokens for the first three groups, the number of verbs longer than four mora is quite small in the present sample. Thus, I combined verbs longer than four mora into one group so as to be sufficient for quantitative statistical profiling. Examples of each type are shown in (105).

(105) a. One-mora type (1m):

ki 'put on', *su* 'do', *de* 'exit', *mi* 'see'

b. Two-mora type (2m):

ori 'descend', *koe* 'across', *kime* 'decide', *sar* 'leave', *nom* 'drink', *mot* 'have', *yar* 'do', etc.

c. Three-mora type (3m):

oboe 'memorize', *kaer* 'return', *kuwae* 'add', *sugos* 'pass', *sodat* 'grow', *hakob* 'transport', *hazime* 'begin', *mituke* 'find', *motome* 'demand', etc.

d. More-than-four-mora type (4m+):

oikake 'chase', *kangae* 'think', *kurikaes* 'repeat', *tatakaw* 'fight', *tunagar* 'link', *totonoe* 'organize', *norikoe* 'overcome', *hirogar* 'expand', etc.

5.2.2 Context

Whether V-*te-ik* 'V-CON-go' appears in the affirmative context or in the negative context may affect the choice of variants in the concerning reductive change. According to Givón (1979), language change is more conservative in the negative context than in the affirmative context. Such a contextual difference has been observed in variable phenomena in Japanese (e.g. the nominative/genitive conversion in NP (Nambu 2007), the *sa*-insertion in causative suffix (Sano 2009)). I take the contextual effect into account for the reductive change in V-*te-ik* 'V-CON-go', under the assumption that the likelihood of reduction could be higher in the affirmative context than in the negative context, if the phenomenon follows suit.

In the present analysis, the negative marker *nai* 'not' following the *-te* conjunctive form is used as the benchmark for identifying the negative context. One thing to be noted here is that the examples such as (106a,b) are not in the negative context but identified as in the affirmative context, because these examples denote denotic meaning even though *nai* 'not' appears.[1]

(106) a. *Nikki igai-ni bunboogu-mo mot-te-ik-anai to ikenai-n-desu*
diary except stationery-also have-CON-go-NEG COMP must-be
keredo-mo
although-PRTCL
'I should bring stationery in addition to a diary.'

(S07F1355)

b. *Muzintoo-de taeuru yoona sooyuu mono-o mot-te-ik-anai*
unmanned.island-at endurable like such thing-ACC have-CON-go-NEG
to ikenai-n-zyanaikana to omot-te
COMP must COMP think-CON
'I think that I must bring items which can be endurable in an unmanned island.'

(S07M1441)

[1]The alphabets and numbers in parentheses given in (106a,b) indicate the identification code of speech data recorded in Corpus of Spontaneous Japanese. From left to right, they signify: i) speech type (S: Simulated Public Speaking), ii) the topic of Simulated Public Speaking, iii) speaker's gender (F: female, M: male), and iv) the serial number given to files within each speech type. (S07F1355), for example, indicates that it is the 1355th file in Simulated Public Speaking, whose speaker is female and she talks about the topic No.7.

5.2.3 Verb Frequency

The third linguistic factor assumed in the present analysis is the frequency effect, since word frequency remains a controversial issue in studies on language change (Wang 1969, Chen 1972, Chen & Wang 1975, Hooper [Bybee] 1976, Bybee 2002b; 2003, Sano 2012, among others). It has been argued that linguistic changes—reductive sound changes in particular—start from high-frequency words and diffuse to low-frequency words (Hooper [Bybee] 1976, Bybee & Thompson 1997, Bybee 2002b; 2003, among others). For the present case, it is hypothesized, under this assumption, that the phonetic reduction of V-*te-ik* 'V-CON-go' could be more likely to occur with high-frequency words but less likely with low-frequency words. I examine whether or not this hypothesis holds true of the phenomenon in question.

The frequency effect in the present study is measured on the basis of the token frequency of preceding verbs in V-*te-ik* 'V-CON-go'. In other words, what I examine is whether or not frequency of preceding verbs plays any roles in choosing one variant from another in the linguistic variation concerned. I refer to *A Frequency Dictionary of Japanese* (Tono et al. 2013), because, to my knowledge, this is the most up-to-date frequency dictionary of Japanese and it is based on two large corpora now available for studies of the language, Corpus of Spontaneous Japanese (NINJAL et al. 2004) and Balanced Corpus of Contemporary Written Japanese (NINJAL 2011).

5.2.4 Meaning of V-*te-ik* 'V-CON-go'

The last linguistic factor to be considered is meaning of V-*te-ik* 'V-CON-go'. I take this factor into account in order to ascertain whether contraction in the *-te* conjunctive form behaves differently according to semantic congruity between the preceding verb and the motion verb in the form (Shibatani 2007a, Shibatani & Chung 2007). As has been reviewed in Chapter 2, these researchers show that contraction is more likely to occur as the preceding verb and *ik* 'go' become semantically less congruous along the cline of grammaticalization they propose: Manner-of-motion + *ik* 'go' (e.g. *arui-te-ik* 'walk-CON-go', *hasit-te-ik* 'run-CON-go', etc.) > Location-change + *ik* 'go' (e.g. *de-te-ik* 'exit-CON-go', *hait-te-ik* 'enter-CON-go', etc.) > Action + *ik* 'go' (e.g. *tabe-te-ik* 'eat-CON-go', *non-de-ik* 'drink-CON-go', etc.). They argue that phonetic reduction is most compatible with the third pattern, while it becomes less compatible with the first and second patterns.

Looking differently, this implies that phonetic reduction of V-*te-ik* 'V-CON-go' could be more compatible with the pattern where the motion verb denotes aspectual meaning than with the one where the verb is construed as spatial movement. Thus, in the present study, the effect of meaning of V-*te-ik* 'V-CON-go' is examined on the basis of dichotomy of *ik* 'go'

between movement meaning and aspectual meaning.

5.2.5 Speaker's Years of Birth

I hereafter introduce the social factors which are to be examined in the present analysis.

Firstly, I examine whether or not the choice of variants in the phonetic reduction of V-*te-ik* 'V-CON-go' is affected by the speaker's years of birth. On the assumption that the reduced form, V-*te-k*, is the innovation in the concerning variable phenomenon, it is speculated that the reduced form appears in the speeches made by younger speakers at a higher likelihood than in the ones by older generations. To check the age difference in the reductive change concerned, I divide speakers in the present data into six age-groups at intervals of ten years: 1930s, 1940s, 1950s, 1960s, 1970s, and 1980s.

5.2.6 Speaker's Gender

It has been observed that speaker's preference for a particular variant is conditioned by the gender; generally in linguistic variation, females tend to avoid using non-standard/non-prestigious forms (e.g. Trudgill 1983, Cameron & Coates 1988, among others). Given this gender difference, it is hypothesized that the innovative, reduced form, V-*te-k*, would be more likely to occur in male speech rather than the speeches by female speakers. Whether or not this hypothesis holds true of the phenomenon in question is to be explored in the present study.

5.2.7 Geography

The geographical difference is also assumed to exert an influence on the choice of variants in the reductive change under discussion. In analyzing the geographical effect, I group speaker's birthplace into four areas—North, East, West, and Other—by reorganizing information about speaker's place of birth, which is provided in the corpus. In the corpus, speaker's birthplace is originally coded by prefecture where she was born. Using this original coding system is abandoned in the present analysis for the following two reasons: first, the result turns out to be too complex to interpret if the original annotation is used; second, the purpose of the analysis is to show an outlook of geographical diffusion of the linguistic variation in question. Therefore, I employ the aforementioned four-way distinction instead of the original annotation. (107a–d) show speaker's place of birth in the respective area.

(107) a. North:
Hokkaido, *Aomori*, *Akita*, *Yamagata*, *Iwate*, *Miyagi*, *Fukushima*

b. East:
Niigata, *Nagano*, *Gunma*, *Tochigi*, *Ibaraki*, *Chiba*, *Saitama*, *Tokyo*, *Kanagawa*, *Yamanashi*, *Shizuoka*, *Aichi*, *Gifu*, *Ishikawa*, *Toyama*, *Fukui*

c. West:
Mie, *Osaka*, *Hyogo*, *Kyoto*, *Shiga*, *Nara*, *Wakayama*, *Okayama*, *Hiroshima*, *Tottori*, *Yamaguchi*, *Tokushima*, *Kagawa*, *Ehime*, *Kochi*, *Fukuoka*, *Saga*, *Oita*, *Kumamoto*, *Nagasaki*, *Kagoshima*, *Okinawa*

d. Other:
Gaikoku (speakers who were born in foreign countries)

5.2.8 Speech Spontaneity

The next two predictors, speech spontaneity and speech style, are taken from impressionistic rating data which is given to speeches recorded in Corpus of Spontaneous Japanese. Impressionistic rating data show what impression the concerned speech gives to listeners; the rating is based on the subjective evaluation by one of the recording members who listens to the speeches. Speeches are evaluated in terms of several criteria (spontaneity, speed, style, etc.) based on a scale of one to five (see Maekawa (2004) and Kagomiya, Yamazumi, and Maki (2004) for more details).

Speech spontaneity shows how spontaneous a speech is and it is assessed based on how much a speaker relies on the script prepared ahead of her talk. The more spontaneous a speech is, the higher mark the speech gets; a higher rating will be given if the speaker talks without looking at the prepared script, whereas the rating becomes lower when a speaker is more dependent on her script. In other words, speech spontaneity indicates whether or not the concerned speech is close to spoken language or to written language.

In the present study, I convert the original five-rank rating into the three-rank rating system for convenience: Low, Mid, and High. Speeches originally rated by 1 or 2, which means relatively less spontaneous, are summed up to "Low". "Mid" corresponds to 3 (normal) in the original rating system. "High" includes speeches rated by 4 or 5 (relatively more spontaneous) in the original system.

5.2.9 Speech Style

Speech style is selected as one of the possible predictors in the present analysis, because it has been observed that style noticeably conditions variable phenomena (see, for example,

Labov (1972)).[2]

As in the case of speech spontaneity, I reorganize the original five-scale annotation into the three-scale system for simplification. Speech style is originally rated as what follows: 1 = informal, 2 = slightly informal, 3 = normal, 4 = slightly formal, and 5 = formal. In the present study, 1 and 2 are marked with "Informal"; 3 with "Normal"; 4 and 5 with "Formal" respectively.

5.2.10 Speaker's Educational Background

The next three social predictors, speaker's educational background, speech skillfulness, and speech experience, are based on the questionnaire which each speaker filled out before her speech (Kagomiya 2004). These predictors are taken into consideration in order to check whether the speaker's psychological attitude affects her choice of one variant from another concerning the phonetic reduction of V-*te-ik* 'V-CON-go'.

Speaker's educational background indicates the final academic records of each speaker. It is based on the following two-way distinction in the present study: "Junior-/Senior-high school" and "Under-/Post-graduate". The former includes those who finished education of the junior and senor high school levels, whereas the latter includes those who finished the undergraduate and postgraduate levels of education.

5.2.11 Speech Skillfulness

Speech skillfulness is speaker's self-evaluation of whether or not she is confident in delivering a speech in front of the audience. Evaluation is based on a four-scale rating: *tokui* (skillful), *yaya tokui* (slightly skillful), *yaya huete* (slightly unskillful), and *huete* (unskillful).

In the present study, the original annotation is converted to two distinct categories for convenience: "Skillful" (incl. the first two ratings) and "Unskillful" (incl. the latter two ratings).

5.2.12 Speech Experience

Speech experience refers to how many times a speaker have made speeches in the past. This is taken into account in the present study, because it is speculated that the reduced form, V-*te-k*, should be more preferred by an experienced speaker than by an inexperienced

[2]Note that speech style in the present analysis differs from the one examined by Labov (1972). In his study, Labov observes that the pronunciation of the postvocalic *r*, for example in *floor*, is patterned differently in i) casual speech, ii) careful speech, iii) reading style, iv) word lists, and v) minimal pairs. In the present analysis, in contrast, I look into the difference within the first type, casual speech, in Labov's (1972) study. Although data recorded in other styles similar to Labov's (1972) study are also available in Corpus of Spontaneous Japanese, I will not use them due to insufficiency of data by contrast to Simulated Public Speaking.

speaker, under the assumption that the more speech experiences a speaker has, the more relaxed the speaker feels at the time of speaking, and thus, she may show preferences for the reduced form, the linguistic variant presumably to be more likely in informal circumstances.

For the present analysis, I reorganize speech experience into the following two categories: "Less than 5" and "More than 6". The former means that the speaker's past speech experience is less than 5 times or none, which are marked with 5 (less than five times) or *hazimete* (the first time) in the original annotation. "More than 6" is given to speeches marked with 10 (less than ten times), 20 (less than twenty times), and 21 (more than twenty-one times).[3]

5.3 Results of Factor-By-Factor Analyses

In this section, I present the results of the factor-by-factor analyses in order to find out how each factor constrains the use of a particular variant (Tagliamonte 2006: 193)—in the present case to see how linguistic and social factors assumed condition the occurrence of the reduced form, V-*te-ik*. For the present study, R version 2.14.1 (R Development Core Team 2011) is employed to calculate χ^2 statistics for checking statistical significance of each factor on the variable phenomenon in question.[4]

5.3.1 Verb Length

Table 12 shows the distribution of the two variants in question by verb length. It suggests that the linguistic variation concerned behaves slightly differently from other variable phenomena observed in Japanese. As has been reviewed in introducing factors, it is verified that language change diffuses from shorter verbs to longer ones (see, for instance, Matsuda (1993) for *ra*-deletion and Sano (2008) for *sa*-insertion). Table 12 reveals that the phonetic reduction of V-*te-ik* 'V-CON-go' is most compatible with bimoraic verbs, the second shortest ones, not the shortest one-mora verbs.

[3] I referred to Sano (2008: fn.16) for the conversion in this way.

[4] In what follows, statistical significance based on χ^2 statistics is shown with the following three elements: i) χ^2 showing the value of χ^2 statistics, ii) *df* (degrees of freedom) indicating the number of values in a calculation that is free to vary, and iii) p indicating probability. When *n.s* is given to a result, instead of probability, it indicates that the distribution of variants is not statistically significant.

Table 12: Distribution of the two variants by verb length.

	1m	2m	3m	4m+	N
V-*te-ik*	82.1% (746/909)	62.6% (1,178/1,881)	82.8% (755/912)	89.6% (293/327)	73.8% (2,972/4,029)
V-*te-k*	17.9% (163/909)	37.4% (703/1,881)	17.2% (157/912)	10.4% (34/327)	26.2% (1,057/4,029)
N	22.6% (909/4,029)	46.7% (1,881/4,029)	22.6% (912/4,029)	8.1% (327/4,029)	100.0% (4,029/4,029)

$\chi^2 = 233.7051$, $df = 3$, $p < 2.2e\text{-}16$

5.3.2 Context

The phonetic reduction concerned behaves in a similar way as has been hypothesized by Givón (1979): language change is more conservative in the negative context than in the affirmative context. As Table 13 shows, the innovative variant, V-*te-k*, is preferred in the affirmative context to in the negative context. Since χ^2 statistics ($\chi^2 = 4.0291$) is statistically significant at 5% level, I assume that the phonetic reduction of V-*te-ik* 'V-CON-go' conforms to a universal constraint on language change; the affirmative context facilitates language change.

Table 13: Distribution of the two variants by context.

	Affirmative context	Negative context	N
V-*te-ik*	73.4% (2,821/3,841)	80.3% (151/188)	73.8% (2,972/4,029)
V-*te-k*	26.6% (1,020/3,841)	19.7% (37/188)	26.2% (1,057/4,029)
N	95.3% (3,841/4,029)	4.7% (188/4,029)	100.0% (4,029/4,029)

$\chi^2 = 4.0291$, $df = 1$, $p = 0.04472$

5.3.3 Verb Frequency

The procedure of examining the frequency effect on the phonetic reduction of V-*te-ik* 'V-CON-go' is as follows; i) the probability of reduced form, V-*te-ik*, for each verb (there are 189 different verbs in the present data set) is calculated, ii) the word frequency provided

in *A Frequency Dictionary of Japanese* (Tono et al. 2013) for each verb is assigned,[5] and iii) the correlation between the probability of reduced form and the word frequency of each verb is calculated; the correlation is measured by Kendall's rank correlation tau. Notice the following two points in the present analysis of the frequency effect. Firstly, I excluded verbs whose word frequency is not available in Tono et al. (2013): *sas* 'bite/stab', *toke-kom* 'blend', *kanae* 'fulfill', *hataraki-kake* 'lobby', and *yakudate* 'harness'. Secondly, verbs whose word frequency in Tono et al. (2013) are exceptionally high in contrast to the mean frequency (309) are also excluded from the present analysis: *su* 'do' (7,644), *nar* 'become' (5,977), and *iw* 'say' (8,549). These steps are for avoiding the result from being skewed (see also Sano (2012)).

Table 14 is a partial presentation of the probability of the reduced form and the word frequency of the verbs which precede V-*te-ik* 'V-CON-go'.

Table 14: Probability of the reduced form, V-*te-ik*, and the word frequency of each verb.

Verb	Probability of the reduced form (%)	Word frequency
hak 'step into'	100.00	32
nayam 'distress'	100.00	52
tobi-kom 'jump in'	100.00	20
tume 'compress'	100.00	19
ok 'put'	94.12	280
nor 'ride'	80.00	326
ture 'take'	79.49	150
ori 'descend'	78.57	86
tob 'fly'	76.47	77
nom 'drink'	75.00	241
ki 'put on'	71.43	101
ik 'go'	66.67	2,746
kaer 'return'	60.00	392
kik 'hear'	60.00	811
kuw 'eat'	60.00	48
hair 'enter'	55.36	913
nobor 'climb'	52.94	108
mot 'have'	51.32	1,106
sugi 'pass'	50.00	100
dekake 'go out'	50.00	80

$\tau = 0.209$, $p = 7.272e\text{-}05$

[5]Tono et al. (2013) offers the per-million-word word frequency.

Recall the hypothesis about the frequency effect in the present analysis: the more frequent the preceding verb is, the higher the probability of phonetic reduction becomes. I observe a statistically significant positive correlation between the probability of phonetic reduction and the word frequency of the preceding verbs ($\tau = 0.209$), although it is weak. A weak correlation seems to be due to the effects of other significant factors; thus, the effect of word frequency is counterbalanced.

5.3.4 Meaning of V-*te-ik* 'V-CON-go'

Next, let us see the distribution of the two variants in terms of meaning of V-*te-ik* 'V-CON-go'. Under the assumption in the cline of grammaticalization that phonological reduction occurs in a morpheme at the advanced stage of grammaticalization, the phonetic reduction concerned could be observed in a higher probability as to V-*te-ik* 'V-CON-go' where the motion verb denotes aspectual meaning. Consider Table 15.

However, what I observed is quite the contrary; the probability of the phonetic reduction concerned turns out to be higher for the *-te* conjunctive form in which the motion verb expresses movement. This unexpected result may be unique to the present data. Further research needs to be done on the connection between the phonetic reduction and the meaning of V-*te-ik* 'V-CON-go', and for this reason I did not include this factor in a multivariate analysis to be presented in Section 5.4.

Table 15: Distribution of the two variants by meaning of V-*te-ik* 'V-CON-go'.

	Movement meaning	Aspectual meaning	N
V-*te-ik*	45.9% (475/1,034)	83.4% (2,497/2,995)	73.8% (2,972/4,029)
V-*te-k*	54.1% (559/1,034)	16.6% (498/2,995)	26.2% (1,057/4,029)
N	25.7% (1,034/4,029)	74.3% (2,995/4,029)	100.0% (4,029/4,029)

$\chi^2 = 562.2344$, $df = 1$, $p < 2.2e\text{-}16$

5.3.5 Speaker's Years of Birth

Now, I turn to the factor-by-factor analyses of social factors. To begin with, I present the distribution of the two variants in question in terms of speaker's years of birth. Figure 6 illustrates the chronological distribution of the phonetic reduction of V-*te-ik* 'V-CON-go', where black squares show the rate of the conservative, unreduced form, V-*te-ik*, and black

triangles show the rate of the innovative, reduced form, V-*te-k*, respectively.

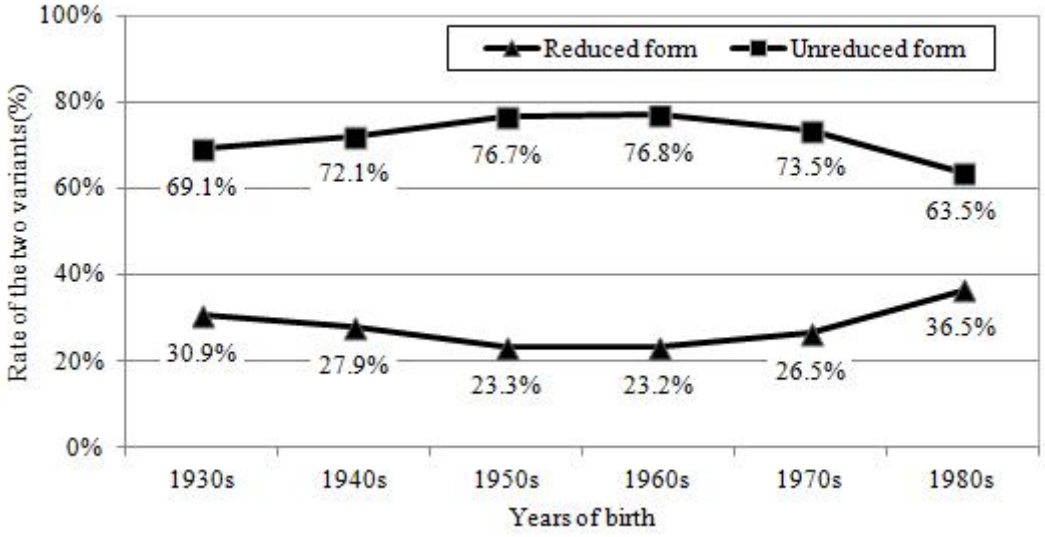


Figure 6: Chronological distribution of the phonetic reduction of V-*te-ik* 'V-CON-go'.

As shown in Figure 6, the rate of the unreduced form remains higher than the reduced form in every generation. This implies that the phonetic reduction of V-*te-ik* 'V-CON-go' is not used extensively in present-day Japanese, even though studies such as Matsumura (1998) suggest the emergence of the reduced form in the Edo era.[6] In other words, we can assume that the use of reduced form, V-*te-k*, has not progressively been extended since its inception; if it were the case, the reduced form could have been favored by speakers from every generation in the present-day Japanese.

Having a closer look at Figure 6, I raise the following two points as to the chronological distribution of the phonetic reduction in question. Firstly, the rate of the two variants in the youngest generation (1980s) is suggestive of the displacement of the conservative variant by the innovative variant in years to come; the rate of the former variant falls into a decline, whereas that of the latter variant is on the increase at this time. Questions such as whether there will be a preponderance of the reduced form in the future or the reduced form undergoes cliticization are interesting to be explored. I leave these issues for future research. Secondly, the slightly u-shaped curve in the distributional pattern of the reduced

[6]Matsumura (1998) observes that phonetic reduction was common in forms such as V-*te-ik* 'V-CON-go' and V-*te-ir* 'V-CON-be', already in the so-called *Edogo*, the dialect on which modern Tokyo Japanese is based, hence his suggestion for the conjugation system of the reduced forms, independent of the unreduced forms.

form across generation, where the probability of reduced form becomes lower in the speeches by the middle-aged speakers (1950–60s) while it becomes higher in speeches by the older or the younger speakers, can be accounted for if we follow Holmes (1992) and Cheshire (2005). According to these researchers, the middle-aged speakers are more sensitive to peer group pressure, so that they become more conservative about using the nonstandard linguistic form and thus tends to prefer the standard form. In contrast, people in old or younger age feel more relaxed in using the nonstandard form, being free of societal pressure; consequently, the nonstandard form becomes more likely to appear in their utterance (Holmes 1992: 184ff, Cheshire 2005: 1555). To put it differently, sensitivity to peer group pressure (or social pressure) for preferring the standard form to the nonstandard form causes the different generational trend in linguistic variation. Based on these previous studies, it is assumed that the speakers in middle age avoid using the reduced form, V-*te-k*, which is considered to be nonstandard, and instead show an inclination toward the standard, unreduced form, V-*te-ik*. In contrast, the speakers in older and younger age, who are assumed to be less sensitive to peer group pressure, are not concerned about using the nonstandard, reduced form when talking; therefore, the phonetic reduction becomes more likely in their speech.

5.3.6 Speaker's Gender

Speaker's gender turns out to be a significant social factor that plays a role in constraining the reductive change in question. As shown in Table 16, male speakers prefer the reduced form, V-*te-k*, by comparison to female speakers, as I hypothesized in light of the previous arguments on gender differentiation in linguistic variation (e.g. Trudgill 1983, Cameron & Coates 1988, among others), which advocate women's conservative behavior on the use of nonstandard forms.

Table 16: Distribution of the two variants by speaker's gender.

	Male	Female	N
V-*te-ik*	70.1% (1,054/2,144)	77.9% (1,468/1,885)	73.8% (2,972/4,029)
V-*te-k*	29.9% (640/2,144)	22.1% (417/1,885)	26.2% (1,057/4,029)
N	53.2% (2,144/4,029)	46.8% (1,885/4,029)	100.0% (4,029/4,029)

$\chi^2 = 30.5637$, $df = 1$, $p = 3.231e\text{-}08$

5.3.7 Geography

The geographical effect is observed on the phonetic reduction of V-*te-ik* 'V-CON-go', with statistical significance at 0.1% level. Observe Table 17. Except from the fact that no variation is found in the speeches by the foreign-born speakers, where the unreduced form is categorically used, a noticeable difference can be observed between those from the eastern and northern parts of the country and those from the western area. To be specific, the speakers coming from the western area tends to use the conservative, unreduced form, V-*te-ik*, whereas the speakers originated from the eastern and northern areas prefer using the innovative, reduced form, V-*te-k*. As far as the informants from the respective area whom I inquire about their intuition are concerned, the observed tendency as shown in Table 17 seems to be the case.

Table 17: Distribution of the two variants by speaker's place of birth.

	North	East	West	Other	N
V-*te-ik*	79.7% (286/359)	70.7% (2,044/2,893)	82.3% (628/763)	100.0% (14/14)	73.8% (2,972/4,029)
V-*te-k*	20.3% (73/359)	29.3% (849/2,893)	17.7% (135/763)	0.0% (0/14)	26.2% (1,057/4,029)
N	8.9% (359/4,029)	71.8% (2,893/4,029)	18.9% (763/4,029)	0.3% (14/4,029)	100.0% (4,029/4,029)

$\chi^2 = 54.6794$, $df = 3$, $p = 8.037e\text{-}12$

Why does such a geographical difference arise as to the reductive change in question? A dialectal contrast between vowel preference and consonant preference can give an account of this geographical difference. As for Japanese, it is widely acknowledged that vowels are preferred in the western dialect whereas consonants are preferred in the eastern dialect (e.g. Yanagida 1994)—vowel devoicing, for instance. It has been said that vowel devoicing is more likely to occur in the Kanto dialect, a dialect spoken in Tokyo and the surrounding areas, than in the Kinki dialect, a dialect spoken in Osaka and the surrounding areas (Shibata 1955, Okumura 1975, Sugito 1996, among others). Following the arguments, held by Mase (1977) and Hirayama (1985), that vowels are pronounced carefully in the Kinki dialect while in the Kanto dialect consonants receive careful pronunciation, it is likely that vowels are devoiced in the latter dialect, resulting in a relatively lower probability of the unreduced form, V-*te-ik*, where the initial vowel /i/ is kept. On the other hand, in the speeches by the western speakers, vowels are retained as a realization of a preferential treatment for

vowels; this results in a relatively higher probability of the unreduced form in the speeches by people coming from the western area of the country.

5.3.8 Speech Spontaneity

When it comes to speech spontaneity, I observed a clear-cut tendency toward the choice of variants in question. Observe Table 18. The more spontaneous a speech becomes, the more likely the reduced form, V-*te-k*, is to occur. In other words, the reductive change in V-*te-ik* 'V-CON-go' seems to be more likely in colloquial language than in written language, given that speech spontaneity in CSJ is measured based on to what extent that a speaker relies on the script prepared ahead of speech.

Table 18: Distribution of the two variants by speech spontaneity.

	Low	Mid	High	N
V-*te-ik*	83.1% (197/237)	79.6% (491/617)	71.9% (2,284/3,175)	73.8% (2,972/4,029)
V-*te-k*	16.9% (40/237)	20.4% (126/617)	28.1% (891/3,175)	26.2% (1,057/4,029)
N	5.9% (237/4,029)	15.3% (617/4,029)	78.8% (3,175/4,029)	100.0% (4,029/4,029)

$\chi^2 = 26.9813$, $df = 2$, $p = 1.384e\text{-}06$

5.3.9 Speech Style

Speech style is another social factor which controls the occurrence of the phonetic reduction of V-*te-ik* 'V-CON-go'. As Table 19 shows, the reduced form is preferred in a more informal setting than in a formal setting because the likelihood of contraction becomes higher as speeeh style becomes more informal (36.6% for Informal; 22.5% for Normal; 11.5% for Formal). Therefore, it is evident that the phonetic reduction of V-*te-ik* 'V-CON-go' is sensitive to style when a speech is made.

Table 19: Distribution of the two variants by speech style.

	Informal	Normal	Formal	N
V-*te*-*ik*	63.4% (991/1,563)	77.5% (1,412/1,823)	88.5% (569/643)	73.8% (2,972/4,029)
V-*te*-*k*	36.6% (572/1,563)	22.5% (411/1,823)	11.5% (74/643)	26.2% (1,057/4,029)
N	38.8% (1,563/4,029)	45.2% (1,823/4,029)	16.0% (643/4,029)	100.0% (4,029/4,029)

$\chi^2 = 171.5897$, $df = 2$, $p < 2.2e\text{-}16$

5.3.10 Speaker's Educational Background

The choice of variants in the present case is constrained by a speaker's educational background as well. Consider Table 20. It shows that the reduced form, V-*te*-*k*, is more likely to occur in the speeches made by people who completed education of the junior-/senior-high school level, whereas people who finished the undergraduate/postgraduate level of education prefer using the unreduced form, V-*te*-*ik*, when they talk in public. With statistical significance at 0.1% level, I assume that the phonetic reduction of V-*te*-*ik* 'V-CON-go' is in part conditioned by speaker's educational background.

Table 20: Distribution of the two variants by speaker's educational background.

	Junior/Senior High School	Under/Postgraduate	N
V-*te*-*ik*	69.6% (947/1,360)	75.9% (2,025/2,669)	73.8% (2,972/4,029)
V-*te*-*k*	30.4% (413/1,360)	24.1% (644/2,669)	26.2% (1,057/4,029)
N	33.8% (1,360/4,029)	66.2% (2,669/4,029)	100.0% (4,029/4,029)

$\chi^2 = 17.799$, $df = 1$, $p = 2.455e\text{-}05$

5.3.11 Speech Skillfulness

Based on Table 21, speech skillfulness does not constrain the phonetic reduction of V-*te*-*ik* 'V-CON-go'. Speakers use the reduced form, V-*te*-*k*, almost equally, be they skillful or not.

Table 21: Distribution of the two variants by speech skillfulness.

	Unskillful	Skillful	N
V-*te-iku*	73.1% (2,262/3,096)	76.1% (710/933)	73.8% (2,972/4,029)
V-*te-ku*	26.9% (834/3,096)	23.9% (223/933)	26.2% (1,057/4,029)
N	76.8% (3,096/4,029)	23.2% (933/4,029)	100.0% (4,029/4,029)

$\chi^2 = 3.261$, $df = 1$, $n.s.$

5.3.12 Speech Experience

Lastly, I present the result of distributional analysis of the effect of speech experience. According to Table 22, the inexperienced speakers use the reduced form, V-*te-k*, at a higher rate than the experienced speakers (27.2% for Less than 5 times; 20.2% for More than 6 times). It is assumed that the result seems to come into being this way, because the experienced speakers may choose the form more suitable to the situation where they deliver their speeches. They may select the unreduced form, V-*te-ik*, which seems to be more appropriate for public speaking, even though it is a simulated one in the corpus.

Table 22: Distribution of the two variants by speech experience.

	Less than 5 times	More than 6 times	N
V-*te-ik*	72.8% (2,515/3,456)	79.8% (457/573)	73.8% (2,972/4,029)
V-*te-k*	27.2% (941/3,456)	20.2% (116/573)	26.2% (1,057/4,029)
N	85.8% (3,456/4,029)	14.2% (573/4,029)	100.0% (4,029/4,029)

$\chi^2 = 12.0289$, $df = 1$, $p = 0.0005238$

5.3.13 Section Summary

As a result of the factor-by-factor analysis of the assumed factors, except for speech skillfulness, all linguistic and social factors have statistically significant contributions to the phonetic reduction of V-*te-ik* 'V-CON-go'. As for the frequency effect of preceding verbs,

the present analysis shows that the likelihood of the concerning phonetic reduction and the word frequency of preceding verbs are correlated; the reductive change becomes more likely to occur as more frequent verbs precede the *-te* conjunctive form. When it comes to the distribution of the two variants, V-*te-ik* and V-*te-k*, in terms of speaker's years of birth, it is found that the middle-aged speakers prefer the unreduced form, whereas the speakers in the older and younger generations tends to use the reduced form at a higher probability. I have ascribed this generational difference to peer group pressure that people feel in making a speech in public occasions; it is assumed that the speakers feel societal pressure, even though the data gathered from CSJ for the present analysis are entitled "Simulated" Public Speaking.

However statistically significant a given factor is individually, two questions still remain at this point when the argumentation held by Poplack and Tagliamonte (2001) over *three lines of evidence* are considered (see the citation from their research in Section 5.4); that is, we need to address the questions of i) whether or not the factors truly constrain the phonetic reduction of V-*te-ik* 'V-CON-go', when other things being equal, and ii) which significant factor has the strongest influence on the concerning phenomenon and which the weakest. In the next section, I present the result of a multivariate analysis which enables us to address these remaining issues.

5.4 Result of a Multivariate Analysis

Let us look into the phonetic reduction of V-*te-ik* 'V-CON-go' more closely, in order to find out not only statistical significant factors but also the relative strength of factors which constrain the occurrence of the reduced form in the concerning phenomenon. For this purpose, I employ a multivariate analysis, the logistic regression analysis. As has been introduced in Chapter 3, from the perspective of Variationist Sociolinguistics, it is of necessity to examine how powerful the factors are and which factor exerts the strongest or weakest influence on the language variation concerned, as Poplack and Tagliamonte (2001) put:

> "Three lines of evidence deriving from variable rule analysis may be adduced in interpreting its results: (statistical) significance of effect (at the .05 level), *magnitude* of effect, as determined by the *range* between the highest and lowest factor weight in a factor group, and *hierarchy of constraints*, or ordering of factor weights within a factor group."
>
> (Poplack & Tagliamonte 2001: 92–93)

One thing to be noted in conducting a multivariate analysis with a large sample is that variability in the number of tokens among speakers may become an obstacle to interpret its result. It is commonplace that some of the speakers in the sample provide many tokens, for instance, one hundred or more records, whereas others only give a small number of tokens, say, five or ten records. Variability in the number of tokens among words can be problematic in research on linguistic variation as well, according to Tagliamonte and Baayen (2012); some particular words appear with substantial numbers, whereas others appear only a few times in a given sample. These potential sources of problem in the sample can hinder a researcher from making statistical predictions about the occurrence of a variable phenomenon under study.

These data-related problems which a researcher faces can successfully be managed by using the generalized mixed-effect model (Bates 2005, Baayen 2008).[7] What is meant by "mixed-effect" is that two different types of effect are taken into the statistic modeling, and they are called *fixed effect* and *random effect*. A crucial distinction between these two types of effect is that the former, *fixed effect*, refers to a factor which is repeatable within a set of possible (i.e. fixed) levels, whereas the latter, *random effect*, refers to factors with levels randomly sampled from a much larger population (Baayen 2008: 241–242). In the present study, speakers and verbs are random effects, and both linguistic and social factors assumed are fixed effects.

Multicollinearity and interaction among a set of factors (*aka* independent variables) are also to be noted in conducting a multivariate analysis. If strong multicollinearity exists, identifying which factor best explains the linguistic variation becomes impossible. On the other hand, if interaction exists among two or more independent variables, they may constrain the occurrence of a particular variant as a combined factor, even if they do not do so individually. Checking the correlation coefficients between independent variables is a measure of multicollinearity and interaction. Following Taromaru (2005) and Sano (2011), I used Pearson product-moment correlations to calculate the correlation coefficients; the threshold for a correlation to be valid is $\pm 0.4 < |r| \leq \pm 0.7$. Table 23 shows the correlation coefficients among independent and dependent variables which I assumed for the present study. The correlation coefficients do not exceed the threshold in every combination, except for one combination: between Verb Length and Verb Frequency. As I checked two different models, in which one of these independent variables is included respectively, the model including Verb Frequency turns out to be better than the one including Verb Length, hence

[7] To conduct the mixed-effect modeling, I used the *lmer* function in the LME4 package in R.

Table 23: Correlation matrix among independent and dependent variables.

	Variant	Verb frequency	Verb length	Context	Gender	Birth year
Variant	1.000	-.033	-.070	-.033	.089	-.030
Verb frequency	-.033	1.000	-.718	-.011	.065	.027
Verb length	-.070	-.718	1.000	-.027	-.018	-.016
Context	-.033	-.011	-.027	1.000	.003	-.028
Gender	.089	.065	-.018	.003	1.000	-.065
Birth year	-.030	.027	-.016	-.028	-.065	1.000
Geography	.095	-.025	-.001	.011	-.110	-.005
Education	.066	-.038	.028	.029	-.037	-.041
Spontaneity	-.072	.032	-.014	-.018	-.116	.061
Style	.022	.023	-.031	-.001	-.007	.045
Skillfulness	.031	-.026	-.003	.002	-.082	-.113
Experience	-.052	-.020	.027	-.038	.064	-.170

	Geography	Education	Spontaneity	Style	Skillfulness	Experience
Variant	.095	.066	-.072	.022	.031	-.052
Verb frequency	-.025	-.038	.032	.023	-.026	-.020
Verb length	-.001	.028	-.014	-.031	-.003	.027
Context	.011	.029	-.018	-.001	.002	-.038
Gender	-.110	-.037	-.116	-.007	-.082	.064
Birth year	-.005	-.041	.061	.045	-.113	-.170
Geography	1.000	.114	.112	-.049	.038	-.145
Education	.114	1.000	.026	-.065	.106	-.171
Spontaneity	.112	.026	1.000	-.043	.063	-.018
Style	-.049	-.065	-.043	1.000	.024	-.096
Skillfulness	.038	.106	.063	.024	1.000	-.219
Experience	-.145	-.171	-.018	-.096	-.219	1.000

the model shown in Table 24. When it come to interaction effects, there exists a weak correlation between Speech Skillfulness and Speech Experience (-.219); still, the mixed-effect model shown in Table 24 remains the best model predicting the phonetic reduction of V-*te-ik* 'V-CON-go'. Thus, I conclude that no multicollinearity and interaction among a set of independent and dependent variables is observed in the present case.

In the balance of this section, I will discuss what factors condition the phonetic reduction of V-*te-ik* 'V-CON-go', based on the best statistical model for the concerning phenomenon, which is shown in Table 24. To begin with, I introduce terminology in Table 24. *Intercept* is the baseline of the model. If the value is positive, the model estimates the likelihood of phonetic reduction as high; otherwise, its likelihood is low in the sample. For the present case, the value of intercept is negative, which amounts to the low likelihood of the reduced form, V-*te-ik*, in the current data (see also Table 11). *Estimate* ($=\beta$) shows the estimated coefficients; the positive value indicates a favoring effect of phonetic reduction, whereas it turns to be negative if the effect is disfavoring (0 is neutral). *Std. Error* (standard error) is sampling fluctuation. *Wald Z* (Z (= standard error) values in Wald statistics) indicates

the divergence in the results, and *Prob. of Z* (probability of Z values) shows the level of significance. The asterisk, '*', in the next column shows that the factor turns out to be significant in conditioning the phonetic reduction of V-*te-ik* 'V-CON-go', with significance levels at .001 (***) or at .01 (**). *Lower CI* and *Upper CI* are the lower bound and the upper bound of 95% confidence interval, respectively.[8] The goodness of fit of the model is calculated by *Somers2 Dxy* (Baayen 2008); the higher the value is, the more reliable the statistical modeling is.[9]

[8] I refer the readers to Tagliamonte (2012) and also Norman and Streiner (2003) for details about terminology in statistics.

[9] The value of Somers2 Dxy ranges from -1 to $+1$ (Colman 2008).

Table 24: Logistic regression of linguistic and social factors conditioning the phonetic reduction of V-*te-ik* 'V-CON-go'.

	Estimate (=β)	Std. Error	Wald Z	Prob. of Z		Lower CI	Upper CI
(Intercept)	-3.403	12.598	-.270	.787		-28.095	21.289
Verb frequency	.710	.220	3.223	.001	**	.278	1.142
Context (reference level: Affirmative)							
Negative	-.910	.263	-3.806	.000	***	-1.515	-.485
Speaker's Gender (reference level: Female)							
Male	.729	.188	3.870	.000	***	.360	1.099
Birth year	-.000	.006	-.112	.911		-.013	.012
Geography (reference level: East)							
North	-.204	.331	-.615	.538		-.853	.445
West	-.943	.258	-3.650	.000	***	-1.449	-.437
Speaker's Educational Background (reference level: Junior/Senior High school)							
Under/Postgraduate	-.257	.196	-1.312	.190		-.640	.127
Speech Spontaneity (reference level: High)							
Mid	-.126	.203	-.620	.535		-.524	.272
Low	-.445	.333	-1.338	.181		-1.098	.207
Speech Style (reference level: Formal)							
Normal	1.137	.231	4.926	8.39e-07	***	.685	1.590
Informal	1.600	.251	6.346	1.96e-10	***	1.107	2.093
Speech Skillfulness (reference level: Skillful)							
Unskillful	.035	.231	.152	.880		-.418	.489
Speech Experience (reference level: Less than 5 times)							
More than 6	-.041	.307	-.135	.893		-.643	.561

(The goodness of fit of the model: Somers2 Dxy = 0.93)

Now, let us consider the result of the multivariate analysis shown in Table 24. It shows that the phonetic reduction of V-*te-ik* 'V-CON-go' is constrained by five linguistic and social factors: verb frequency, context, speaker's gender, geography, and speech style. To understand the way each of these factors constrain the variable phenomenon in question,

I present the odds-ratio of estimate (Exp(β)), which shows the relative strength of the factor on the likelihood of phonetic reduction, and discuss the result below. The baseline of Exp(β) is 1 and one of the factors in a factor group is taken as reference in calculation. In other words, Exp(β) will be above 1 if the factor is favorable to the reduced form, V-*te-ik*, whereas the factor is unfavorable if Exp(β) is below 1.

Firstly, Table 25 singles out the effect of verb frequency on the phenomenon in question. Recall that verb frequency refers to the frequency of preceding verbs, and notice that verb frequency is taken into the statistical modeling as a continuous variable. The odds-ratio of estimate (Exp(β) = 2.03) indicates that the phonetic reduction concerned doubles with frequently-used verbs. This shows that the reductive change in question follows the Reduction Effect (Hooper [Bybee] 1976, Bybee & Thompson 1997), a hypothesis which predicts that reductive sound changes erode frequent forms first.

Table 25: Frequency effect on the phonetic reduction of V-*te-ik* 'V-CON-go'.

	Estimate (= β)	Std. Error	Wald Z	Prob. of Z	Exp(β)
Verb frequency	.710	.220	3.223	.001	2.03

It is assumed that higher compatibility of the reduced form, V-*te-k*, with frequent verbs can be accounted for by the ideas of "chunk", which is held by Bybee (2002a, 2011). By the term "chunk", Bybee (2002a, 2011) argues that frequently-used sequences of words are recognized as if it is a monomorpheme (i.e. a chunk); thus, those sequences become less analyzable and morphologically more integrated, as Phillips (2001) proposes as Frequency-Implementation Hypothesis. Given this, the fact that the phonetic reduction in question is more likely to occur when a frequently-used verb precedes the *-te* conjunctive form is as a result that the sequence of 'frequent verb + *-te-ik*' is recognized as morphologically more integrated, hence a higher probability of the reduced form.

Secondly, Table 26 presents that the reduced form is not favored in the negative context, with the odds-ratio of estimate .37. As for the contextual effect, the odds-ratio of estimate for the negative context is calculated by taking the affirmative context as reference; in short, the reduced variant, V-*te-k*, is .37 times less common in the negative context than in the affirmative context. This tendency conforms to a universal constraint on language change maintained by Givón (1979): language change is conservative in the negative context.

Thirdly, it is found out that speaker's gender plays a role in conditioning the phonetic reduction of V-*te-ik* 'V-CON-go'. Consider Table 27. With female speakers taken as reference,

Table 26: Contextual effect on the phonetic reduction of V-*te-ik* 'V-CON-go'.

	Estimate (= β)	Std. Error	Wald Z	Prob. of Z	Exp(β)
Context					
Negative	-.910	.263	-3.806	.000	.37

the odds-ratio of estimate for male speakers (Exp(β) = 2.07) illustrates that male speakers show a particular preference for using the reduced form, V-*te-k*, when delivering speeches. The reductive change is twice as common in male speech. Such a tendency indicates that women are sensitive to using the innovative, reduced variant, similar to the general gender differentiation in linguistic variation (Trudgill 1983, Cameron & Coates 1988, among others).

Table 27: Gender effect on the phonetic reduction of V-*te-ik* 'V-CON-go'.

	Estimate (= β)	Std. Error	Wald Z	Prob. of Z	Exp(β)
Speaker's Gender					
Male	.729	.188	3.870	.000	2.07

Additionally, the present analysis reveals the geographical effect on the reductive change in question. As shown in Table 28, the reduced form, V-*te-ik*, is less common in speeches delivered by people coming from the western areas of the country; they disfavor the reduced form (Exp(β) = .39). In contrast, the speakers from the northern part use the reduced form as often as the people from the eastern areas of the country, since its odds-ratio of estimate (Exp(β) = .82) is close to 1, which amounts to the odds-ratio of estimate for people coming from the eastern part of the country (NB: East is reference).

Table 28: Geographical effect on the phonetic reduction of V-*te-ik* 'V-CON-go'.

	Estimate (= β)	Std. Error	Wald Z	Prob. of Z	Exp(β)
Geography					
North	-.204	.331	-.615	.538	.82
West	-.943	.258	-3.650	.000	.39

The last factor conditioning the phonetic reduction of V-*te-ik* 'V-CON-go' is speech style. As for this effect, it is revealed that the reduced form is particularly favored in informal style of speech; the concerning phonetic reduction is five times more likely to occur in informal speech than in formal speech (Exp(β) = 4.95). Taking a similarly higher likelihood of the phonetic reduction in normal speech into consideration as well, it is evident that the variable phenomenon in question is noticeably sensitive to speech style; the more informal the speech becomes, the more likely the phonetic reduction is to occur.

Table 29: Stylistic effect on the phonetic reduction of V-*te-ik* 'V-CON-go'.

	Estimate (= β)	Std. Error	Wald Z	Prob. of Z	Exp(β)
Speech Style					
Informal	1.600	.251	6.346	1.96e-10	4.95
Normal	1.137	.231	4.926	8.39e-07	3.12

Thus far, I have identified the linguistic and social factors which have statistical significance for conditioning the phonetic reduction of V-*te-ik* 'V-CON-go': verb frequency, context, speaker's gender, speaker's place of birth (geography), and speech style. Now, which of these five factors does exert the strongest influence on the reductive change in question and which the weakest? Figure 7 shows the effect magnitude of the five significant factors. Notice that verb frequency is not included in the figure because it is taken as a continuous variable into the present analysis. The effect magnitude is a direct illustration of the relative strength among the five factors; it is calculated by the range between the highest and lowest factor weight in a factor group.[10]

[10] *Factor weight* in a factor group shows the relative strength of factors within a factor group, and *range* is calculated by subtracting the lowest factor weight from the highest factor weight (see Tagliamonte (2006, 2012)). Factor weight is calculated by using the *inv.logit* function provided in R, the function which takes the inverse logits of the estimated coefficients given as *Estimate* (=β) in Table 24 (see Johnson (2008: 179—180) for details).

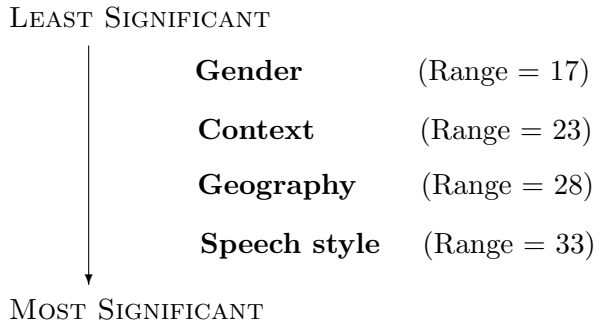


Figure 7: Effect magnitude of significant factors.

Putting verb frequency aside, speech style exercises the strongest influence on the phonetic reduction of V-*te*-*ik* 'V-CON-go', and geography (i.e. speaker's place of birth), context, and speaker's gender follows in this order. This implies that the reductive change in question is largely constrained by social factors rather than linguistic factors; more specifically, a speaker is sensitive to the circumstances in which she stands when selecting one variant from the other in the case of the concerning linguistic variation.

5.5 Summary

In this chapter, I have explored the third problem remaining in the literature on the grammaticalization of *yuk* 'go' in Japanese: in what environments V-*te*-*ik* 'V-CON-go', a form which is at the most advanced stage of the grammaticalization process, undergoes phonetic reduction, whereby V-*te*-*ik* changes into V-*te*-*k*. To address this problem, having put a focus on present-day Japanese, I employed the framework of Variationist Sociolinguistics and analyzed the variable phenomenon in question by assuming several linguistic and social factors possibly constraining the reductive change under discussion.

The present corpus-based analysis of the phenomenon (the factor-by-factor analysis and the multivariate analysis) has revealed that the phonetic reduction of V-*te*-*ik* 'V-CON-go' is conditioned by i) word frequency of the verbs which precede the *-te* conjunctive form, ii) the context in which the form appears (i.e. affirmative versus negative), iii) speaker's gender, iv) speaker's place of birth, and v) speech style. Not only having identified what factors constrain the reductive change, but the present study has also demonstrated the relative strength of these five significant factors; consequently, speech style exercises a relatively stronger influence on the reductive change in question. Additionally, I have argued that the higher compatibility of the reduced form, V-*te*-*k*, with frequently-used preceding verbs can be accounted for in terms of the idea that frequent patterns can be recognized as a monomorpheme, or "chunk", following Bybee (2002a, 2011) and Phillips (2001). In this

respect, I consider word frequency to be a facilitator of the phonetic reduction of V-*te-ik* 'V-CON-go' as well (Bybee 2003).

Together with Chapter 4, I have elucidated the grammaticalization process of Japanese *yuk* 'go'. By virtue of the formal and corpus-based analysis which I have presented in these two chapters, I believe that the remaining issues in the literature which I raised in Chapter 2 have been elucidated. The formal analysis is advantageous to demonstrating the interrelationship among the three forms involved in the grammaticalization process of the Japanese motion verb—the full-verb *yuk* 'go', the infinitival V-*yuk* 'V-go', and the -*te* conjunctive V-*te-yuk* 'V-CON-go'—from a semantic perspective as well as from a syntactic perspective. The corpus-based analysis is beneficial in that it enables us to look into the phonological reduction which grammaticalized forms usually undergo as the grammaticalization process advances, as in the case of the reductive change in V-*te-ik* 'V-CON-go' that I have explored in this chapter. Given this, the formal and corpus-based analysis should bring a new light on the studies on grammaticalization.

Chapter 6 Semantic Bleaching and Reanalysis in Grammaticalization of *yuk* 'go'

The purpose of this chapter is to revisit my assumption that the reanalysis of the *-te* conjunctive form, V-*te*-*yuk* 'V-CON-go', in effect, caused this form to take the place of V-*yuk* 'V-go', the infinitival form which is older in the grammaticalization process of Japanese *yuk* 'go'. In Chapter 4, I proposed the reanalysis of V-*te*-*yuk* 'V-CON-go', as shown in (108), and that this morphological reconfiguration triggers the renewal from V-*yuk* 'V-go', thereby the infinitival form becoming unproductive in Modern and in present-day Japanese.

(108) Reanalysis of V-*te*-*yuk* 'V-CON-go'

Before:	[V-*te*] *-yuk*	(movement after V / movement while V)
After:	V-[*te*-*yuk*]	(aspect)

I proposed this transitional process for the concerning phenomenon in consideration with the argument that renewal is observed universally in the development of tense and aspect morphemes in languages throughout the world (Smith 2006). Renewal, defined as the refilling of a semantic domain with a new phonetic material (Gabelentz 1891, Meillet 1912), is implied by the overlap or layering between older and newer expressions at a given synchronic stage (Hopper 1991). Given this, it is reasonable to assume that the older V-*yuk* 'V-go' has been displaced by the newer V-*te*-*yuk* 'V-CON-go' because these two forms, which are similar in meaning, have coexisted in the grammaticalization process. I have demonstrated the renewal process quantitatively and qualitatively (For quantitative evidence, see Figure 4 in Chapter 4; for more intuitive evidence, see Section 4.4 in the same chapter). Thus, in Chapter 4, I have elucidated the historical development of the Japanese motion verb.

What remains in my exploration is to corroborate the present discussion; in particular, it is needed to reconsider the very starting point of the renewal process: the reanalysis of V-*te*-*yuk* 'V-CON-go'. Since the analysis which I have presented in Chapter 4 is semantics-based, one may question whether or not the morphological reconfiguration of the *-te* conjunctive form is grounded in syntactic evidence as well. Thus, this chapter aims to present syntactic evidence for the reanalysis of the form, intended to be an extension of the present study to other *-te* conjunctive constructions in Japanese.

This chapter is organized as follows. To begin with, Section 6.1 reviews the key notions in the present study—semantic bleaching, reanalysis, and renewal—in the grammaticalization studies as premises for further discussion. Section 6.2 considers the associations between semantic bleaching and reanalysis and introduces a working hypothesis which I take. Section 6.3 clarifies the remaining problems which are to be addressed in this chapter. Section 6.4 reviews the tests proposed in the literature on the simplex and complex characteristics of the V_1-*te*-V_2 predicates in Japanese. Section 6.5 discusses the validity of the reanalysis of V-*te*-*yuk* 'V-CON-go' on the basis of the observed results by applying those tests to the form. Section 6.6 discusses the motivation behind head-movement of *yuk* 'go' assumed for the verb in transitional meaning as well as its suppression when the verb turns to an aspectual auxiliary in the case of V-*yuk* 'V-go' and *te-yuk* 'CON-go' of the *-te* conjunctive form, by making a proposal for syntactic features of the motion verb. Section 6.7 presents an attempt to relate these syntactic features to the qualia in semantic representation. With an interim summary provided in Section 6.8, I will discuss theoretical consequences of the present study in an attempt to extend the present analysis to other *-te* conjunctive constructions in Japanese (Section 6.9). Section 6.10 summarizes this chapter.

6.1 Semantic Bleaching, Reanalysis, and Renewal

6.1.1 Semantic Bleaching

Since the beginning of research on grammaticalization (e.g. Gabelentz 1891, Meillet 1912), it has been acknowledged that grammaticalization involves the loss of semantic content.[1] The weakening of meanings of a lexical item, together with the loss of phonetic substance and syntactic freedom, suggests that a lexical item is turning to a grammatical item (Heine & Reh 1984). It is obvious that meanings become weakened or bleached in the grammaticalization process; however, meaning change is not a sudden loss but a shift of meaning: "one meaning is demoted, another promoted" (Hopper & Traugott 2003: 94–96). Meaning change is considered a shift, because the original lexical meanings, which become abstract during grammaticalization, are reflected in meanings of a grammatical form and constrain the distribution of the grammatical form (a phenomenon called "persistence" in Hopper 1991).

Let us take the development (or metaphorical extension) of *go*-verbs for example. Cross-linguistically, the original sense of physical movement of *go*-verbs becomes abstract and their grammatical forms express temporal continuative or future meaning (Sweetser 1988, Heine,

[1] The term *semantic bleaching* is originally used by Talmy Givón (Givón 1979); however, the forerunners of grammaticalization studies hinted the loss of semantic content during the process (e.g. "verbleichen" 'to grow pale' by Gabelentz or "affaiblissement" 'weakening' by Meillet).

Claudi, & Hünnemeyer 1991, Lichtenberk 1991). Such a semantic shift (i.e. SPACE > TIME) is common when spatial terms evolve into temporal particles and auxiliaries (e.g. Bybee, Perkins, & Pagliuca 1994). In addition to the semantic abstraction, the increase of subjectivity is observed when *go*-verbs are used as an auxiliary. As a lexical verb, the directionality of *go* is anchored to both the subject's and the speaker's point of view, while as an auxiliary it is only anchored to the speaker's subjective point of view (Langacker 1990, Hopper & Traugott 2003). To summarize, grammaticalizationists have acknowledged, to some extent, a semantic link between a lexical item and a form which has grammaticalized from the lexical item, with some aspects of original meaning being lost in the link. Such a change in meaning is called *semantic bleaching* by these researchers.

In contrast, having argued that semantic bleaching is an intuitive characterization of meaning change involved in grammaticalization, Roberts and Roussou (2003) and Roberts (2010) propose that what is lost in semantic bleaching is non-logical meaning of an lexical item and logical meaning remains intact in the process (see also von Fintel (1995)).

6.1.2 Reanalysis

Reanalysis is defined as "change in the structure of an expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation" (Langacker 1977: 58). Harris and Campbell (1995: 61) argue that in reanalysis "a change in constituency, hierarchical structure, category labels, grammatical relations, and cohesion" are involved.

On the other hand, from the Minimalist framework, Roberts and Roussou (2003) and Roberts (2010) identify the two different types of reanalysis—the downward reanalysis and the upward reanalysis—as a result of observing a number of grammaticalization phenomena. With regard to the upward reanalysis, these researchers argue that this type of reanalysis involves the change of a lexical verb into a functional element, with the loss of argument structure, and that the upward path corresponds to Cinque's (1999, 2004) functional hierarchy of clausal categories.

6.1.3 Renewal

Renewal, a process whereby existing meanings take on new forms (which are often periphrastic), has been observed in a variety of phenomena (see Hopper and Traugott (2003) and the references therein). It is a historical process which has already been identified as early as genesis of the grammaticalization studies (e.g. Gabelentz 1891, Meillet 1912). According to Hopper (1991), the overlap or layering between older and newer expressions at a given synchronic stage is an indication of the renewal process.

For instance, the development of Latin and French future tense forms of *we will sing* as shown in (109) illustrates the process.

(109)

Pre-Latin		**Latin**		**French**
**kanta bʰumos*	>	*canta-bimus*		
sing be-2Pl.pres.		sing-2Pl.fut.		
		cantare habemus	>	*chante-rons*
		sing have-2Pl.pres.		sing-2Pl.fut.
				allons chanter > ?
				go-2Pl.pres sing

(Eckardt 2007)

In this process, the Pre-Latin form **kanta bʰumos* evolves into *canta-bimus* in Latin; the Latin form is displaced by *cantare habemus*, which develops into *chante-rons* in French; this form is further replaced by *allons chanter*. Such a cyclic historical transition has widely been observed in the emergence of tense or aspect forms, according to Smith (2006).

6.2 Association between Semantic Bleaching and Reanalysis

The grammaticalization process of Japanese *yuk* 'go' is similar to the renewal process in that the infinitival V-*yuk* 'V-go' and the *-te* conjunctive V-*te-yuk* 'V-CON-go' have overlapped in meaning and are still in coexistence in present-day Japanese. Given the difference in productivity of these forms, I assume that we in present-day Japanese observe the very transition from the older, infinitival form to the newer, *-te* conjunctive form, and the transition is close to the end. As the trigger of this displacement, I proposed the reanalysis of the *-te* conjunctive form, which has allowed the form to have aspectual meaning in addition to the transitional meaning. I have argued for the reanalysis in tandem with the development of the verbal compounds in Japanese as well as the change in *te*'s role, as a result of which, syntactically speaking, *te-yuk* 'CON-go' as a whole base-generates as the head of Deixis Phrase, a functional phrase proposed by Nishigauchi (2009, 2014). Being a functional head means that the motion verb loses its lexical meaning, that is, the verb no longer denotes movement; to put it another way, the motion verb is semantically bleached as well. Consequently, the categorial change makes the two forms in question structurally equivalent and aspectual meaning can take on the newer, *-te* conjunctive form.

A question that arises here is whether or not semantic bleaching and reanalysis are mutually (in)dependent in the grammaticalization process of Japanese *yuk* 'go'; for instance, semantic bleaching always underlies reanalysis, or the former has nothing to do with the latter, or vice versa. Regarding the association between semantic bleaching and reanalysis, four possibilities could be thought of, as shown in Table 30. What I will pursue in this chapter is to identify which of these four patterns best describes the renewal process from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go'.

Table 30: Associations between semantic bleaching and reanalysis in grammaticalization.

Pattern	Semantic bleaching	Renalysis
A	No	No
B	No	Yes
C	Yes	No
D	Yes	Yes

The first two patterns (Patterns A and B) postulate that no semantic bleaching is involved in the grammaticalization process while reanalysis may or may not take place. I assume that grammaticalization cannot take place by these two patterns because a lexical item is never grammaticalized without semantic bleaching; if lexical meaning remains intact, a grammatical form never arises. Following Longobardi (2001) and Roberts and Roussou (2003), reanalysis (i.e. syntactic change) should not arise unless it is motivated by other types of change in a lexical item (e.g. phonological changes and semantic changes). Therefore, the first two patterns can be ruled out from the following discussion.

In contrast, Patterns C and D will be disputable for the present study. Pattern C assumes that a lexical item can evolve into a grammatical form as a result of semantic bleaching but reanalysis is not necessarily involved in the process. Pattern D assumes that grammaticalization is the consequence of semantic bleaching and reanalysis of a lexical item; both of them are indispensable for the historical process. Which of these two patterns—Pattern C or Pattern D—is more plausible for explaining the renewal process (V-*yuk* 'V-go' > V-*te-yuk* 'V-CON-go') which I assume in the grammaticalization of Japanese *yuk* 'go'?

A crucial difference between these two patterns is whether or not reanalysis is postulated. In the literature on grammaticalization, a number of researchers are in agreement with the view that grammaticalization is manifested in reanalyses (Heine & Reh 1984, Heine et al. 1991, Hopper & Traugott 2003, among others); Hopper and Traugott (2003: 69) state that

"reanalysis is the dominant mechanism driving it [grammaticalization]." On the contrary, Haspelmath (1998) and De Smet (2012) challenge this mainstream view; Haspelmath (1998) argues that various syntactic changes instantiate grammaticalization but should not be explained in terms of reanalysis, saying that "Grammaticalization and reanalysis are disjoint classes of phenomena" (p. 315). With reference to Japanese *yuk* 'go', Miyagawa (1987) proposes restructuring for the verb when it appears as what he calls the Purpose Expression which is exemplified in (110). According to his observation, *kai-ni ik* 'buy-for go' in (110) undergoes restructuring, whereby behaving as a simplex structure rather than a complex structure. He demonstrates such a structural change by means of the semantic interpretation of an instrumental postposition, contrasting (111a) and (111b). In (111), an instrumental postposition is *zitensya-de* 'by bicycle' and this must be construed with the matrix verb *ik* 'go'.

(110) [*Taroo-ga* [PRO *hon-o* *kai-ni*] *it-ta*].
Taro-NOM book-ACC buy-for go-PAST
'Taro went to buy a book.'

(Miyagawa 1987: 273)

(111) a. *Taroo-ga Kanda-ni hon-o zitensya-de kai-ni it-ta.*
Taro-NOM Kanda-to book-ACC bicycle-by buy-for go-PAST
'Taro went to Kanda by bicycle to buy a book.'

b. **Taroo-ga hon-o zitensya-de kai-ni Kanda-ni it-ta.*
Taro-NOM book-ACC bicycle-by buy-for Kanda-to go-PAST

(Miyagawa 1987: 275)

When *zitensya-de* 'by bicycle' is placed inside the infinitival clause, (111a) is acceptable whereas (111b) is not. According to Miyagawa (1987), (111b) becomes unacceptable because it is impossible for the instrumental postposition to be interpreted with the matrix verb; instead, it is construed with the infinitival (i.e. " *Taro went to Kanda to buy a book by bicycle."). The instrumental postposition is construed with the matrix verb to the contrary in (111a). Miyagawa (1987) attributes this constrast in interpretation of instrumental postposition to the structural difference between these two sentences, and argues that (111a) has a simplex structure as a result of restructuring, given in (112).

(112) [$_S$ NP [$_{VP}$ [$_{S'}$ [$_S$ NP [$_{VP}$ NP *kai-ni*]]] *ik*]]
→ [$_S$ NP [$_{VP}$ NP [$_V$ *kai-ni ik*]]]

A question is whether or not restructuring proposed by Miyagawa (1987) takes place in V-*te-yuk* 'V-CON-go' as well (the *-te* conjunctive form is not examined in his paper).[2] Although V-*te-yuk* 'V-CON-go' is a different construction from the purposive expression, V-*ni ik* 'V-for go', the *-te* conjunctive form too may undergo restructuring because the same verb is used in these constructions. Additionally, it is problematic that restructuring is limited to a portion of verbs, as Cinque (2001: 47) questions: "[. . .] why it should exist at all, and why it should exist with those particular verb classes (modal, aspectual and motion)." In light of these arguments, I start examining the associations between semantic bleaching and reanalysis in the grammaticalization process of Japanese *yuk* 'go', specifically in the renewal from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go', by taking Pattern D as a preliminary hypothesis.

6.3 Remaining Problems

Before embarking upon verifying the aforementioned hypothesis, let me remind the readers here what problems remain in the present study. In this chapter, I will address the following three problems:

1. The semantics-based assumption about the reanalysis of V-*te-yuk* 'V-CON-go' as in (108) is not grounded in syntactic evidence at this stage; the syntactic description given thus far seems to be hypothesized only to conform to Roberts and Roussou's (2003) syntactic approach to grammaticalization. Is there any evidence which shows that *te-yuk* 'CON-go' behaves like one lexical item in the reanalyzed case?

2. Provided that there is syntactic evidence supporting the reanalysis of V-*te-yuk* 'V-CON-go', then what is the motivation behind movement of *yuk* 'go' in the transitional V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go'? Why do the motion verb and *te-yuk* 'CON-go' in aspectual use base-generate as the head of Deixis Phrase, a functional phrase?

3. If one takes the framework of the Minimalist Program (Chomsky 1995), the second problem can be accounted for in terms of feature-checking. Then, how can the features assumed for *yuk* 'go' be related to the qualia in semantics?

6.4 Tests in the Literature

The main task in this chapter is to prove whether or not the semantics-based assumption about the reanalysis of V-*te-yuk* 'V-CON-go', which I have discussed in Chapter 4, is

[2]Shigeru Miyagawa pointed out the possibility of restructuring in V-*te-yuk* 'V-CON-go' which expresses aspectual meaning, when Toshio Hidaka and I presented a version of this study at the 23rd Japanese/Korean Linguistics Conference (Arai & Hidaka 2013b). I thank Shigeru Miyagawa for his comments.

grounded syntactically as well. To put it briefly from a syntactic perspective, I assume that *te-yuk* 'CON-go' forms one lexical item as a result of reanalysis; the conjunctive particle and the motion verb are lexically more integrated than its counterpart before reanalysis, where *te* and *yuk* 'go' base-generate in different syntactic positions. In other words, what to be proven is that the reanalyzed *te-yuk* 'CON-go' behaves like a simplex predicate rather than a complex one. For this purpose, I employ various tests previously proposed in the literature about the complex and simplex property of the V_1-*te*-V_2 predicates in Japanese. Let me review those tests before applying them to V-*te-yuk* 'V-CON-go'.

6.4.1 Tests on Complexity of the V_1-*te*-V_2 Predicates

The V_1-*te*-V_2 predicates in Japanese have been considered as a complex predicate because they show the following properties summarized in (113a–c).

(113) a. Particles can intervene between *-te* and V_2 (Martin 1975: 510ff).

b. V_1 alone can be negated (Nakatani 2013: 109).

c. The *o*-V-*ni nar* honorification is not allowed (Kageyama 1993: 360).

Firstly, Martin (1975: 510ff) observes that a variety of contrastive or focus particles can intervene between the conjunctive particle *te* and the secondary verb in the V_1-*te*-V_2 predicates in Japanese, as exemplified in (114) and (115). The particles listed in Martin (1975) are *-sae*, *-nado*, *-nanzo*, *-nanka*, *-nante*, *-gurai*, *-bakari*, *-dakewa*, *-made*, *-demo*, *-wa*, and *-mo*. Although the acceptability of the intervention of these particles varies, the fact that particles can intervene inside the V_1-*te*-V_2 predicates indicates that they are not lexically formed (Nakatani 2013: 109). In fact, the intervention of particles inside the lexically-formed compound verbs is impossible, as shown in (116). The contrast in grammaticality between (114–115) and (116) illustrates the complex characteristics of the V_1-*te*-V_2 predicates.

(114) *Taroo-wa sono hon-o gakkoo-ni mot-te-wa-it-ta ga, ...*
Taro-TOP the book-ACC school-DAT have-CON-PRTCL-go-PAST but
'Taro did bring the book to school, but ...'

(Matsumoto 1996: 242)

(115) a. *Kare-wa nanimo kat-te-wa ko-nakat-ta.*
he-TOP anything buy-CON-PRTCL come-NEG-PAST
'He did not buy anything (but did something, such as checking the price tags).'

b. *Watasi-wa sonna koto omot-te-mo mi-nakat-ta.*
I-TOP such thing think-CON-PRTCL see-NEG-PAST

'I didn't even think about it.'

(Nakatani 2013: 109)

(116) a. *tobi-agar* 'jump-up', *naki-sakeb* 'cry-scream', *aruki-mawar* 'walk-round', *tabe-tuduke* 'eat-continue', *syaberi-makur* 'speak-continue', *tabe-kake* 'eat-begin'

b. **tobi-mo-agar*, **naki-mo-sakeb*, **aruki-mo-mawar*, **tabe-mo-tuduke*, **syaberi-mo-makur*, **tabe-mo-kake*

(Kageyama 1993: 76)

Secondly, the fact that it is possible for the first verb of the V_1-*te*-V_2 predicates to be negated suggests the complex property of the verbal composites as well. Consider (117a,b). Since a negative marker, *nai* 'not', is considered to be introduced in syntax, putting the negative marker between the first verb and *te* is assumed to be impossible if the V_1-*te*-V_2 predicates are lexically-formed. They, in fact, undergo such a syntactic operation, and thus the verbal composites are like a complex predicate which are formed syntactically (Nakatani 2013: 109–110).

(117) a. *Taroo-wa atoato-no tameni teki-o tukura-nai-de oi-ta.*
Taro-TOP future-GEN for.the.sake enemy-ACC create-NEG-CON put-PAST
'For the sake of the future, Taro didn't make enemies.'

b. *Taroo-ga Ziroo-o sikara-nai-de yat-ta.*
Taro-NOM Jiro-ACC scold-NEG-CON give-PAST
'Taro didn't scold Jiro (to Jiro's benefit).'

(Nakatani 2013: 109)

Whether or not the V_1-*te*-V_2 predicates are compatible with the *o*-V-*ni nar* honorification is another test to examine the complex property of the verbal composites. According to Kageyama (1993: 360), the V_1-*te*-V_2 predicates are incompatible with the *o*-V-*ni nar* honorification in contrast to V-V compounds which allow this type of honorification. Based on this observation, he argues that the V_1-*te*-V_2 predicates is not lexically-formed; they behave as complex predicates. The contrast in grammaticality of (b)-sentences in (118) and (119) illustrates this point.[3]

(118) a. *Yamada-sensee-ga sore-o tabe-te mi-ta.*
Yamada-teacher-NOM that-ACC eat-CON see-PAST
'Professor Yamada tried eating it.'

[3]I refer the readers to Kuno (1983: chap. 1) for more details about two types of honorification for the V-*hazime* 'V-begin' compound, given in (119).

b. * *Yamada-sensee-ga sore-o o-*[*tabe-te mi*]*-ni nat-ta.*

(cf. *Yamada-sensee-ga sore-o o-*[*tabe ni nat*]*-te mit-ta.*)

(Nakatani 2013: 110)

(119) a. *Yamada-sensee-ga sore-o tabe hazime-ta.*
Yamada-teacher-NOM that-ACC eat begin-PAST
'Professor Yamada began to eat it.'

b. *Yamada-sensee-ga sore-o o-*[*tabe hazime*]*-ni nat-ta.*

(cf. *Yamada-sensee-ga sore-o o-*[*tabe-ni nari*]*hazime-ta.*)

(Nakatani 2013: 110)

6.4.2 Tests on Simplicity of the V_1-*te*-V_2 Predicates

Pieces of evidence for showing the simplex characteristics of the V_1-*te*-V_2 predicates have been presented in the literature from syntactic, phonological, and psycholinguistic perspectives, summarized in (120a–c).

(120) a. Syntactic evidence:

i. NPI-licensing across the *te*P boundary is allowed when the *te*-clause is concatenated (McCawley & Momoi 1986, Matsumoto 1996, and others).[4]

ii. Internal arguments of an adjunct clause and the matrix clause can be cross-scrambled in the concatenated cases (McCawley & Momoi 1986, Miyagawa 1987).

iii. In concatenated cases, an adjunct modifier cannot selectively modify V_2 (McCawley & Momoi 1986, Matsumoto 1996).

b. Phonological evidence: contraction occurs if V_2 begins with a vowel (Nakatani 2013).

c. Psycholinguistic evidence (Nakatani 2006, 2013)

Of these tests, this section mainly reviews syntactic evidence because it highlights the simplex property of the V_1-*te*-V_2 predicates more than phonological and psycholinguistic evidence. I refer the readers to the respective studies for details about the latter.

[4] Nakatani (2013) calls the clause headed by the conjunctive particle *te* *te*P for convenience. Syntactically, he argues that *te*P is a TP (tense phrase) based on his view that *te* is an allomorph of the past-tense marker, *ta*. Additionally, according to Nakatani (2013: 2), in the concatenated case the two predicates involved in the V_1-*te*-V_2 predicates jointly form a single complex predicate.

Firstly, McCawley and Momoi (1986), Matsumoto (1996), and others discuss the NPI-licensing across the *te*-headed phrase boundary and argue that the V_1-*te*-V_2 predicates allow this syntactic operation as if they behave as a simple predicate. In general, a negative polarity item (NPI) must be locally licensed by a Neg head. In addition, an adjunct clause is an island: a NPI in an adjunct clause cannot be licensed by a Neg outside the adjunct clause (see, for example, Kato (1991)). These conditions on NPI-licensing explain the contrast in grammaticality between (121a) and (121b). In (121a), the NPI *nanimo* 'anything' and a Neg head *nai* 'not' locate inside an adjunct clause headed by *kara* 'because', thus, the sentence is grammatical in conformity with the NPI-licensing condition and the adjunct islandhood constraint. On the contrary, (121b) is ungrammatical in violation of those conditions.

(121) a. *Taroo-wa* [*nanimo hosiku-nakat-ta kara*] *sat-ta.*
Taro-TOP [anything want-NEG-PAST because] leave-PAST
'Taro left because he didn't want anything.'

b. **Taroo-wa* [*nanimo hosikat-ta kara*] *sara-nakat-ta.*
Taro-TOP [anything want-PAST because] leave-NEG-PAST

(Nakatani 2013: 111)

Nakatani (2013) applies this test to diagnose the degree of concatenation of the V_1-*te*-V_2 predicates. According to Nakatani (2013: 111), assuming *te* in these predicates to be the head of an adjunct clause, *te* phrases constitute a barrier for the NPI-licensing in the non-concatenated cases; in consequence, (122b) is ungrammatical because the NPI *dokonimo* 'anywhere' inside the *te* phrase cannot be licensed by the Neg *nai* 'not' outside the phrase. However, the NPI-licensing across *te* phrases becomes grammatical in the concatenated cases like (122c,d).[5] This fact, in other words, indicates that the V_1-*te*-V_2 predicates behave as a simplex predicate.

(122) a. *Taroo-wa* [*dokonimo ika-nai-de*] *ringo-o tabe-ta.*
Taro-TOP [anywhere go-NEG-CON] apple-ACC eat-PAST
'Taro didn't go anywhere and ate an apple.'

b. **Taroo-wa* [*dokonimo it-te*] *ringo-o tabe-nakat-ta.*
Taro-TOP [anywhere go-CON] apple-ACC eat-NEG-PAST

c. *Boku-wa nanimo tabe-te ko-nakat-ta.*
I-TOP anything eat-CON come-NEG-PAST

d. *Boku-wa dokonimo it-te ko-nakat-ta.*
I-TOP anywhere go-CON come-NEG-PAST

[5](122d) is added by the author for clarification.

(Nakatani 2013: 111)

Secondly, the fact that it is allowed to cross-scramble the internal arguments of V_1 and V_2 in the V_1-*te*-V_2 predicates suggests that they are a simple predicate (Nakatani 2013: 14, 112–114). In general, a sentence becomes ungrammatical when the internal arguments of an adjunct clause and the matrix clause are cross-scrambled (McCawley & Momoi 1986, Miyagawa 1987), as exemplified by (123a,b).

(123) a. *Taroo-wa ofisu-ni hon-o mot-te toozyoosi-ta.*
Taro-TOP office-DAT book-ACC hold-CON show_up-PAST
'Taro showed up at the office carrying a book.'

b. ??*Taroo-wa hon-o ofisu-ni mot-te toozyoosi-ta.*
Taro-TOP book-ACC office-DAT hold-CON show_up-PAST

(Nakatani 2013: 14)

Similarly, it is unacceptable to cross-scramble the internal arguments of the *te* phrase and the matrix verb when the verbs in the V_1-*te*-V_2 predicates are not concatenated (Nakatani 2013: 113). (124a–c) illustrate this point. In (124a–c), the internal arguments of the *te* phrase and the matrix verb are *hon-o* 'book-ACC' and *gakkoo-ni* 'school-DAT', respectively. Cross-scrambling these arguments generates an ungrammatical sentence like (124c).

(124) a. *Taroo-wa [hon-o mot-te] zitensya-de gakkoo-ni it-ta.*
Taro-TOP [book-ACC hold-CON] bicycle-with school-DAT go-PAST
'Taro went to school by bicycle, holding a book in his hand.'

b. *Taroo-wa gakkoo-ni [hon-o mot-te] zitensya-de it-ta.*
Taro-TOP school-DAT [book-ACC hold-CON] bicycle-with go-PAST

c. **Taroo-wa [hon-o gakkoo-ni mot-te] zitensya-de it-ta.*
Taro-TOP [book-ACC school-DAT hold-CON] bicycle-with go-PAST

(Nakatani 2013: 113)

In contrast, the fact that crossed scrambling is possible in (125a–c) shows that the verbs in these examples are concatenated, thus *mot-te-ik* 'hold-CON-go' behaving as a single predicate (Nakatani 2013: 113).

(125) a. *Taroo-wa zitensya-de gakkoo-ni hon-o mot-te it-ta.*
Taro-TOP bicycle-with school-DAT book-ACC hold-CON go-PAST
'Taro brought a book to school with a bicycle.'

b. *Taroo-wa zitensya-de hon-o gakkoo-ni mot-te it-ta.*
Taro-TOP bicycle-with book-ACC school-DAT hold-CON go-PAST

c. *Taroo-wa hon-o zitensya-de gakkoo-ni mot-te it-ta.*
Taro-TOP book-ACC bicycle-with school-DAT hold-CON go-PAST

(Nakatani 2013: 113)

Thirdly, McCawley and Momoi (1986), Matsumoto (1996) and Nakatani (2013) observe that an adjunct modifier does not selectively modify the secondary verb of the V_1-*te*-V_2 predicates when they are concatenated. Consider (126a–c). According to Nakatani (2013: 114), the awkwardness of (126b) is because in the concatenated case it is unnatural to interpret that the adjunct *faasuto-kurasu-de* 'with a first class ticket' modifies the means of the documents' transportation as well as of the agent *Tanaka-san*'s traveling; the adjunct only modifies the latter. In contrast, the adjunct *kuruma-de* 'by a car' in (126c) is relevant to the way of both transporting documents and the agent's traveling; it modifies the whole of the V_1-*te*-V_2 predicate. According to Nakatani (2013), the fact that (126b) is less acceptable than (126c) suggests a simplex aspect of the V_1-*te*-V_2 predicates in the concatenated cases like (126c).[6]

(126) a. *Tanaka-san-wa syorui-o mot-te faasuto-kurasu-de ki-ta.*
Tanaka-Mr-TOP document-ACC hold-CON first-class-with come-PAST
'Mr. Tanaka held the documents and came using a first-class ticket.'

b. ?*Tanaka-san-wa faasuto-kurasu-de syorui-o mot-te ki-ta.*
Tanaka-Mr-TOP first-class-with document-ACC hold-CON come-PAST

c. *Tanaka-san-wa kuruma-de syorui-o mot-te ki-ta.*
Tanaka-Mr-TOP car-by document-ACC hold-CON come-PAST
'Mr. Tanaka brought the documents by car.'

(Nakatani 2013: 114)

6.4.3 Section Summary

Tables 31 and 32 summarize the result of the tests reviewed above. Owing to these observed results, the V_1-*te*-V_2 predicates in Japanese have been considered as a simplex predicate on the one hand and as a complex one on the other in the literature.

[6] As Takao Gunji (p.c.) points out, the difference in acceptability between (126b) and (126c) seems to be infinitesimal. It seems that the difference in acceptability is largely dependent on what adjuncts to be used to modify the V_1-*te*-V_2 predicates. When an adjunct explicitly indicates a means of transportation such as *kuruma-de* 'by car' or *hikooki-de* 'by airplane', it is acceptable for the adjunct to modify both of the two verbs in the predicates, whether they are concatenated or not. On the other hand, the primary reading of an adjunct such as *faasuto-kurasu-de* 'with a first class ticket' is a type of classes within transportation; the interpretation of such adjuncts as a means of transportation arises secondarily. The subtle difference in acceptability between (126b) and (126c) may be in part for this reason.

Table 31: Tests of complexity.

Intervention of particles	Ok
Negation of V_1	Ok
o-V-*ni nar* honorification	No

Table 32: Tests of simplicity.

NPI-licensing	Ok
Crossed scrambling	Ok
Adjunct modification of V_2	No

6.5 Testing the Morphological Integrity of V-*te-yuk* 'V-CON-go'

Now, I employ the tests reviewed in the previous section in order to examine the difference in the morphological integrity of V-*te-yuk* 'V-CON-go', before and after the reanalysis. The expected results as to the present case are as follows.

As for the tests on complexity, I expect that V-*te-yuk* 'V-CON-go' should show a complementary distribution; the pre-reanalyzed V-*te-yuk* 'V-CON-go' allows the negation of V_1 but disallows the *o*-V-*ni nar* honorification, whereas the reanalyzed one should behave in the opposite way (Table 33).

Table 33: The expected result as to the tests on complexity.

	Before reanalysis: [V-*te*]-*yuk*	After reanalysis: V-[*te-yuk*]
Negation of V_1	Ok	No
o-V-*ni nar* honorification	No	Ok

As for the tests on simplicity, NPI-licensing and crossed scrambling should be unacceptable as to the pre-reanalyzed V-*te-yuk* 'V-CON-go' but the adjunct modification of V_2 will be acceptable; in contrast, the first two are allowed in the reanalyzed V-*te-yuk* 'V-CON-go' while the last one is not (Table 34).

Table 34: The expected result as to the tests on simplicity.

	Before reanalysis: [V-*te*]-*yuk*	After reanalysis: V-[*te-yuk*]
NPI-licensing across boundary	No	Ok
Crossed scrambling	No	Ok
Adjunct modification of V_2	Ok	No

Note that I consider particle intervention to be ineffective in examining the morphological integrity of V-*te-yuk* 'V-CON-go'. This is because, as Nakatani (2013) mentions,

acceptability of intervention is largely dependent on particles, as given in (127) and (128), and the following discussion will not be severely affected even if I refrain from using this test. Therefore, particle intervention is not employed in the present case.

(127) Before reanalysis: [V-*te*] -*yuk* (movement after/while V)

Siken ni-mo-kakawarazu, Ken-wa gakkoo-ni enpitu-o
exam in spite of Ken-TOP school-DAT pencil-ACC
mot-te-{sae / nado / nanka / nante / wa / mo}-ik-anakat-ta.
have-CON-PRTCL-go-NEG-PAST

'Ken did not bring any pencils to school in spite of an exam.'

(128) After reanalysis: V-[*te-yuk*] (aspect)

Kaze-o hii-te-mo, Ken-no syokuyoku-wa
cold-ACC catch-in.spite.of Ken-GEN appetite-TOP
nakunat-te-{sae / nado / nanka / nante / wa /?mo}-ik-anakat-ta.
disappear-CON-PRTCL-go-NEG-PAST

'Ken did not lose his appetite even after he caught a cold.'

Note also that, in what follows, I represent V-*te-yuk* 'V-CON-go' as V-*te-ik*, by using *ik* instead of *yuk*, for the sake of expedience in giving examples in present-day Japanese.

6.5.1 Negation of V_1

Firstly, let me examine how V-*te-yuk* 'V-CON-go' behaves as to the first test, negation of V_1. Consider (129) and (130). In (129a,b), it is allowed to negate only the first verb in the -*te* conjunctive form, hence *mot-anai-de-it-ta* 'have-NEG-CON-go-PAST' and *kaw-anai-de-it-ta* 'buy-NEG-CON-go-PAST' are both grammatical. On the contrary, negating only the first verb makes (130a,b) ungrammatical but negating V-*te-yuk* 'V-CON-go' as a whole is acceptable. This contrast in grammaticality as to negation of the first verb illustrates that the conjunctive particle and the motion verb become lexically more integrated in aspectual use, which in turn shows that *te-yuk* 'CON-go' should be recognized as one lexical item as a result of reanalysis.

(129) Before reanalysis: [V-*te*] -*yuk* (movement after/while V)

a. *Ken-wa siken kaizyoo-ni enpitu-o mot-anai-de-it-ta.*
Ken-TOP exam site-DAT pencil-ACC have-NEG-CON-go-PAST
'Ken went to the venue of examination without any pencils.'

b. *Ken-wa baabekyuu paatii-ni syokuzai-o kaw-anai-de-it-ta.*
Ken-TOP barbecue party-DAT food-ACC buy-NEG-CON-go-PAST
'Ken went to the barbecue party without buying any food.'

(130) After reanalysis: V-[*te-yuk*] (aspect)

a. *Osanai toki-no omoide-wa Ken-no atama-kara nanihitotu*
childhood-GEN memory-TOP Ken-GEN head-from anything
{**kie-nai-de-it-ta* / *kie-te-ik-anakat-ta*}.
disappear-NEG-CON-go-PAST / disappear-CON-go-NEG-PAST
'Memories of his childhood did not disappear from Ken's mind.'

b. *Kaze-o hii-te-mo, Ken-no syokuyoku-wa*
cold-ACC catch-in.spite.of Ken-GEN appetite-TOP
{**nakunar-anai-de-it-ta* / *nakunat-te-ik-anakat-ta*}.
disappear-NEG-CON-go-PAST / disappear-CON-go-NEG-PAST
'Ken did not lose his appetite even after he caught a cold.'

6.5.2 The *o*-V-*ni nar* Honorification

Secondly, V-*te-yuk* 'V-CON-go' behaves differently between transitional meaning and aspectual meaning in the case of the *o*-V-*ni nar* honorification, and acceptability of this type of expression suggests a stronger lexical integrity of the conjunctive particle and the motion verb in the latter case. Consider (131) and (132). As (131) shows, the *o*-V-*ni nar* honorification is not acceptable in the case of V-*te-yuk* 'V-CON-go' which expresses transitional meaning. For example, *mot-te-ik* 'have-CON-go' in (131a) only accepts *mot-te-o-iki-ni nar* but not **o-moti-ni nat-te-ik*, given in (131a′).

(131) Before reanalysis: [V-*te*] -*yuk* (movement after/while V)

a. *Yamada sensee-ga kyoositu-ni sore-o mot-te-it-ta.*
Yamada professor-NOM classroom-DAT it-ACC have-CON-go-PAST
'Professor Yamada brought it to the classroom.'

a′ ... *sore-o* {*mot-te-o-iki-ni nat-ta* / **o-moti-ni nat-te-it-ta* }.

b. *Yamada sensee-ga gakusei-to-no baabekyuu paatii-ni gyuuniku-o*
Yamada professor-NOM student-with-of barbecue party-DAT beef-ACC
kat-te-it-ta.
buy-CON-go-PAST
'Professor Yamada bought beef to the barbecue party with his students.'

b′ ... *gyuuniku-o* {*kat-te-o-iki-ni nat-ta* / **o-kai-ni nat-te-it-ta*}.

In contrast, the *o*-V-*ni nar* honorification is acceptable in V-*te-yuk* 'V-CON-go' denoting aspect. As given in (132a′,b′), *o-huyasi-ni nat-te-ik* and *o-sodate-ni nat-te-ik* are acceptable; however, **huyasi-te-o-iki-ni nar* and **sodate-te-o-iki-ni nar* are unacceptable. The contrast in acceptability of the *o*-V-*ni nar* honorification thus suggests that *te* and *yuk* 'go' are

lexically more integrated when V-*te-yuk* 'V-CON-go' expresses aspectual meaning.[7]

(132) After reanalysis: V-[*te-yuk*] (aspect)

a. *Hitode busoku-nanode, ooku-no syatyoo-ga zyuugyooin-o*
labor shortage-because many-of president-NOM laborer-ACC
huyasi-te-it-ta.
increase-CON-go-PAST
'Owing to labor shortages, presidents of many companies have increased the number of laborers.'

a′ ... {**huyasi-te-o-iki-ni nat-ta* / *o-huyasi-ni nat-te-it-ta*}.

b. *Yamada sensee-wa zaisyoku tyuu ooku-no yuusyuu-na gakusee-o*
Yamada professor-TOP in.position during many-of excellent student-ACC
sodate-te-it-ta.
develop-CON-go-PAST
'Professor Yamada developed many excellent students while he was in the position.'

b′ ... {**sodate-te-o-iki-ni nat-ta* / *o-sodate-ni nat-te-it-ta*}.

---

[7] Takao Gunji (p.c.) raised peculiarities as to the *o*-V-*ni nar* honorification in the case of the reanalyzed, aspectual V-*te-yuk* 'V-CON-go'. In terms of morphological integrity, V-*te-yuk* 'V-CON-go' as a whole should be honorified such as ?**o-huyasi-te-iki-ni nar* and ?**o-sodate-te-iki-ni nar*, instead of the ones given in (132a′,b′); in fact, the *o*-V-*te-iki-ni nar* form is less acceptable than the *o*-V-*ni nat-te-ik* form. Still, I observe the *o*-V-*te-iki-ni nar* form is unacceptable for the pre-reanalyzed case but is grudgingly allowed for the reanalyzed case. Observe the following examples:

(i) a. **Yamada sensee-ga kyoositu-ni sore-o o-mot-te-iki-ni nat-ta.*
Yamada professor-NOM classroom-DAT it-ACC HON-have-CON-go-HON-PAST
'Professor Yamada brought it to the classroom.'

b. ? **Yamada sensee-wa zaisyoku tyuu ooku-no yuusyuu-na gakusee-o*
Yamada professor-TOP in.position during many-of excellent student-ACC
o-sodate-te-iki-ni nat-ta.
HON-develop-CON-go-HON-PAST
'Professor Yamada developed many excellent students while he was in the position.'

Though the contrast is subtle, (ia,b) demonstrate that a stronger morphological integrity of *te-yuk* 'CON-go' in the aspectual use. Based on the improvement of acceptability of the *o*-V-*ni nat-te-ik* form and the *o*-V-*te-iki-ni nar* form, *te* and *yuk* 'go' in the reanalyzed, aspectual V-*te-yuk* 'V-CON-go' is morphologically more integrated than in the pre-reanalyzed, transitional case.

Takao Gunji (p.c.) also points out that *o-huyasi-ni nat-te-ik* and *o-soda-te-ni nat-te-ik* as in (132a′,b′) become acceptable for a semantic reason. For these aspectual cases, what the subjects do is not the event denoted by *yuk* 'go' but the event which the preceding verb denotes; therefore, what the subjects do can be honorified. For the transitional case, on the other hand, the subject acts as the agent of not only the first event but also the movement denoted by *yuk* 'go', hence the acceptability of *mot-te-o-iki-ni nar* and *kat-te-o-iki-ni nar*, as given in (131a′,b′). Still, for this case, a question why **o-moti-ni nat-te-ik* and **o-kai-ni nat-te-ik* become unacceptable remains unresolved. I express gratitude to Takao Gunji for his insightful comments on these points. These issues are to be explored in future research.

6.5.3 NPI-licensing

Thirdly, V-*te-yuk* 'V-CON-go' behaves differently as to the NPI-licensing test. In specific, the NPI-licensing across *te* is not allowed when the *-te* conjunctive form denotes movement after the event denoted by the preceding verb ends or movement in tandem, while it is allowed when the form denotes aspect. Consider the following examples. (133a,b) exemplify V-*te-yuk* 'V-CON-go' of transitional meaning and their behaviors as to the NPI-licensing is tested in (134) and (135) respectively.

(133) Before reanalysis: [V-*te*] *-yuk* (movement after/while V)

a. *Ken-wa syokuba-ni yakkyoku-de kusuri-o morat-te-it-ta.*
Ken-TOP office-DAT pharmacy-at medicine-ACC receive-CON-go-PAST
'Ken went to his office after having received medicine at a pharmacy.'

b. *Ken-wa gakkoo-ni yukimiti-o hasit-te-it-ta.*
Ken-TOP school-DAT snow.road-ACC run-CON-go-PAST
'Ken went running along the snowy road to school.'

(134) a. *Ken-wa syokuba-ni yakkyoku-de* [*nanimo moraw-anai-de*]*-it-ta.*
anything receive-NEG-CON-go-PAST

b. **Ken-wa syokuba-ni yakkyoku-de* [*nanimo morat-te*]*-ik-anakat-ta.*
anything receive-CON-go-NEG-PAST

(135) a. *Ken-wa gakkoo-ni* [*dokomo hasir-anai-de*]*-it-ta.*
anywhere run-NEG-CON-go-PAST

b. **Ken-wa gakkoo-ni* [*dokomo hasit-te*]*-ik-anakat-ta.*
anywhere run-CON-go-NEG-PAST

(134b) and (135b) are both unacceptable and this is because that the NPIs such as *nanimo* 'anything' and *dokomo* 'anywhere' and the Neg, *nai* 'not', are placed across *te*. Putting an NPI and a Neg within the same clause headed by *te*, on the other hand, produces grammatical sentences, which is exemplified in (134a) and (135a).

Now, let me examine the case of the aspectual V-*te-yuk* 'V-CON-go' as in (136). (137b) and (138b) illustrate that the aspectual V-*te-yuk* 'V-CON-go' accepts an NPI to be licensed across *te*; however, placing an NPI and a Neg within the *te* clause is ungrammatical as (137a) and (138a) demonstrate. This contrast in grammaticality as to NPI-licensing also suggests a tighter morphological integrity between *te* and *yuk* 'go' in the aspectual use.

(136) After reanalysis: V-[*te-yuk*] (aspect)

a. *Yoru ni-nat-te, kion-ga sagat-te-it-ta.*
night PRTCL-become-CON temperature-NOM fall-CON-go-PAST

'The temperature has fallen as the night approaches.'

b. *Gyooseki-ga kaihuku-si, sono kigyoo-no kabuka-wa*
business.performance-NOM recover-do that company-GEN stock.price-TOP
agat-te-it-ta.
rise-CON-go-PAST
'As a result of recovery of business performance, the stock price of the company has risen.'

(137) a. **Yoru ni-nat-temo, kion-ga [mattaku sagar-anai-de]-it-ta.*
never fall-NEG-CON-go-PAST

b. *Yoru ni-nat-temo, kion-ga [mattaku sagat-te]-ik-anakat-ta.*
never fall-CON-go-NEG-PAST

(138) a. *... *kabuka-wa [mattaku agar-anai-de]-it-ta.*
never rise-NEG-CON-go-PAST

b. ... *kabuka-wa [mattaku agat-te]-ik-anakat-ta.*
never rise-CON-go-NEG-PAST

6.5.4 Crossed Scrambling

Availability of crossed scrambling in the case of the aspectual V-*te-yuk* 'V-CON-go' suggests that *te* and *yuk* 'go' in this case become morphologically more cohesive than the one in the *-te* conjunctive form which has transitional meaning. Consider the following examples:

(139) Before reanalysis: [V-*te*] *-yuk* (movement after/while V)

a. *Ken-wa gyuuniku-o kat-te densya-de baabekyuu paatii-ni it-ta.*
Ken-TOP beef-ACC buy-CON train-by barbecue party-DAT go-PAST
'Ken went to the barbecue party after having bought some beef.'

i. **Ken-wa [gyuuniku-o baabekyuu paatii-ni kat-te] densya-de it-ta.*

ii. ?**Ken-wa densya-de [baabekyuu paatii-ni gyuuniku-o kat-te] it-ta.*

iii. **Ken-wa [gyuuniku-o densya-de baabekyuu paatii-ni kat-te] it-ta.*

b. *Ken-wa ie-ni sumaatofoon-o oi-te densya-de gakkoo-ni it-ta.*
Ken-TOP house-DAT smartphone-ACC put-CON train-by school-DAT go-PAST
'Ken went to school by train, with his smartphone left at home.'

i. **Ken-wa [ie-ni sumaatfoon-o gakkoo-ni oi-te] densya-de it-ta.*

ii. **Ken-wa denysa-de [gakkoo-ni ie-ni sumaatfoon-o oi-te] it-ta.*

iii. **Ken-wa [ie-ni sumaatfoon-o densya-de gakkoo-ni oi-te] it-ta.*

(140) After reanalysis: V-[*te-yuk*] (aspect)

a. *Yoru-ni-nat-te* *kion-ga* *zyuudo-ni*
night-PRTCL-become-CON temperature-NOM ten.degrees.Celsius-to
sagat-te-it-ta.
fall-CON-go-PAST
'The temperature fell to ten degrees Celsius as at night.'

i. *Kion-ga zyuudo-ni yoru-ni-nat-te sagat-te-it-ta.*

b. *Gan-ni okas-are-te* *Ken-no taizyuu-ga yonzyukkiro-ni*
cancer-by suffer-PSSV-CON Ken-GEN weight-NOM forty.kilogram-to
het-te-it-ta.
reduce-CON-go-PAST
'Ken lost his weight to forty kilograms because of cancer.'

i. *Ken-no taizyuu-ga yonzyukkiro-ni gan-ni okas-are-te het-te-it-ta.*

As shown in (139), crossed scrambling is unacceptable for V-*te-yuk* 'V-CON-go' of transitional meaning; on the other hand, it becomes acceptable for the aspectual case of the *-te* conjunctive form, as shown in (140). A contrast in acceptability of crossed scrambling is another evidence for morphological integrity between *te* and *yuk* 'go' when the *-te* conjunctive form expresses aspectual meaning.

6.5.5 Adjunct Modification of V_2

The fact that *yuk* 'go' cannot selectively be modified by an adjunct in the case of aspectual V-*te-yuk* 'V-CON-go' illustrates morphological cohesiveness between *te* and *yuk* 'go' in the form, as exemplified in (142). Notice that the adjunct modification of *yuk* 'go' is acceptable when the *-te* conjunctive form expresses transitional meaning, as shown in (141).

(141) Before reanalysis: [V-*te*] *-yuk* (movement after/while V)

Ken-ga *gakkoo-ni* *hasit-te* {*kinoo/yukkuri-to/nombiri-to/isoi-de/awate-te*}
Ken-NOM school-DAT run-CON {yesterday/slowly/leisurely/hurriedly/hastily}
it-ta.
go-PAST
'Ken went to school {yesterday/slowly/leisurely/hurriedly/hastily}.'

(142) After reanalysis: V-[*te-yuk*] (aspect)

a. **Kabuka-ga* *agat-te*
stock.price-NOM rise-CON
{*kinoo/saikin/zyozyo-ni/kyuugeki-ni/oohaba-ni/kakosaikoo-ni*} *it-ta.*
{yesterday/recently/gradually/drastically/vastly/record-high} go-PAST

'Stock prices went up {yesterday/recently/gradually/drastically/vastly/to a record-high}.'

b. *Kabuka-ga {kinoo/saikin/zyozyo-ni/kyuugeki-ni/oohaba-ni/kakosaikoo-ni} agat-te-it-ta.*

6.5.6 Results of Observation

To summarize, the results of observation as to the syntactic tests markedly show that *-te* and *yuk* 'go' is morphologically integrated in the reanalyzed V-*te-yuk* 'V-CON-go', which expresses aspectual meaning (Table 35). Regarding to the complexity tests, the reanalyzed case does not allow negating only the first verb of the verbal compound, whereas honorification of the compound as a whole is allowed. As for the simplicity tests, the *-te* conjunctive form allows NPI-licensing across boundary and crossed scrambling while it does not allow the selective modification of the second verb, *yuk* 'go'.

Table 35: The results of observation as to the tests on simplicity and on complexity.

	Before reanalysis: [V-*te*]-*yuk*	After reanalysis: V-[*te-yuk*]
Negation of V_1	Ok	No
o-V-*ni nar* honorification	No	Ok
NPI-licensing across boundary	No	Ok
Crossed scrambling	No	Ok
Adjunct modification of V_2	Ok	No

Consequently, these observed results from a syntactic perspective corroborate the semantics-based assumption about the reanalysis of V-*te-yuk* 'V-CON-go', repeated below in (143).

(143) Reanalysis of V-*te-yuk* 'V-CON-go'

Before: [V-*te*] -*yuk* (movement after V / movement while V)

After: V-[*te-yuk*] (aspect)

6.5.7 Section Summary

To summarize, these observed results suggest that the motion verb in question undergoes meaning change in the process of morphological reconfiguration; the verb behaves as a lexical verb before reanalysis whereas it turns into an auxiliary after reanalysis. Owing to its full-verb property, *yuk* 'go' in V-*te-yuk* 'V-CON-go' *per se* can syntactically require the two arguments—the subject and the path of movement—for the transitional meanings. For

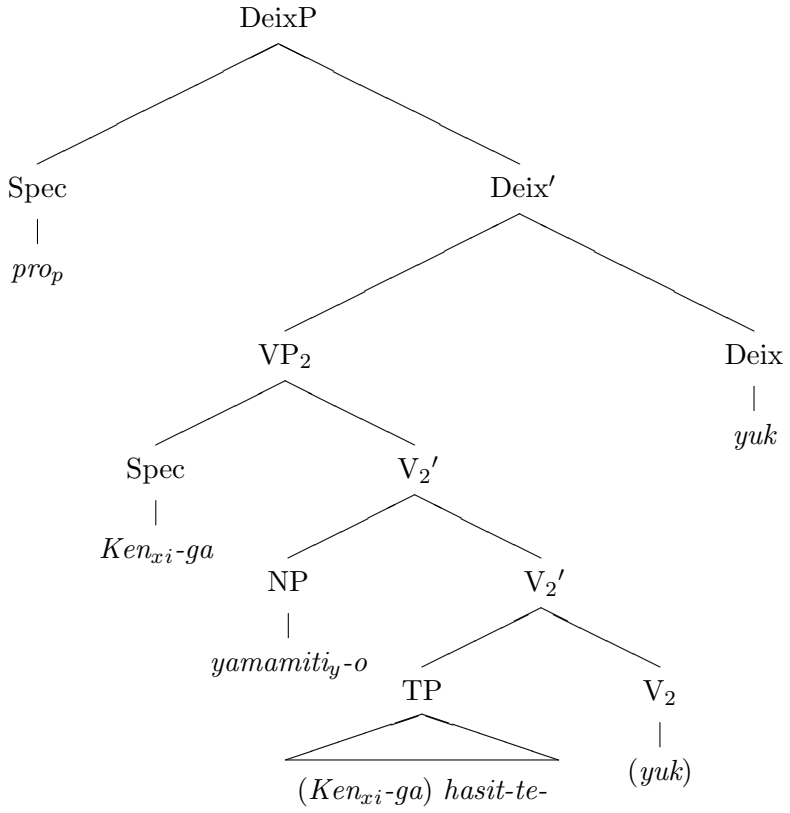
the aspectual meaning, however, the motion verb no longer takes these arguments because the verb turns into an auxiliary; rather, it takes a proposition, denoted by the VP headed by the preceding verb, as a complement. I repeat the semantic representations for the lexical *yuk* 'go' and the reanalyzed, aspectual *te-yuk* 'CON-go' below in (144) and in (145) for convenience.

(144)
$$\left[\begin{array}{l} \textit{yuk}\text{ 'go'} \\ \text{ARG} = \left[\ \text{ARG1: } x,\ \text{ARG2: } y,\ \text{P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p,\ \text{Loc}(e, s')) < \mathbf{DIS}(p,\ \text{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}(e, s'), \\ \qquad\qquad \mathbf{VIEW}(y) = \langle s, f \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (x,\ \text{VIA } (y)) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (x,\ z_{\text{place}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

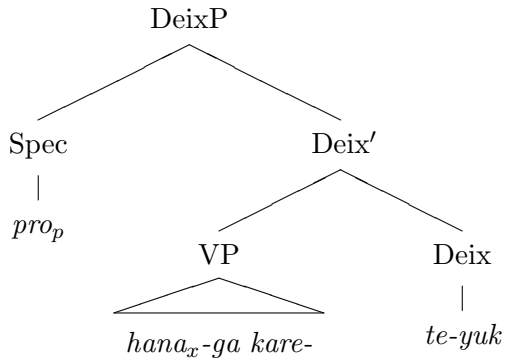
(145)
$$\left[\begin{array}{l} \textit{te-yuk}\text{ 'CON-go' (aspect)} \\ \text{ARG} = \left[\ \text{ARG1: } \textit{VP}\left[\ \text{ARG1: } x\ \right],\ \text{P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p,\ \text{Loc}(e, s')) < \mathbf{DIS}(p,\ \text{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}'(e, s'), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \phi \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (x,\ z_{\text{state}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

As a result of change in semantics as shown above, the syntactic structure of V-*te-yuk* 'V-CON-go' differs between the pre-reanalyzed, transitional meaning and the reanalyzed, aspectual meaning, repeated below for convenience. Compare (146) and (147). Notice that the argument of point-of-view holder (pro_p) remains consistently in SpecDeixP regardless of reanalysis, for it to be a syntactic realization of the deictic property of *yuk* 'go'. The subscripts like x and y indicate the correspondence of arguments between semantics and syntax.

(146) Syntax of V-*te-yuk* 'V-CON-go' as movement (before reanalysis)



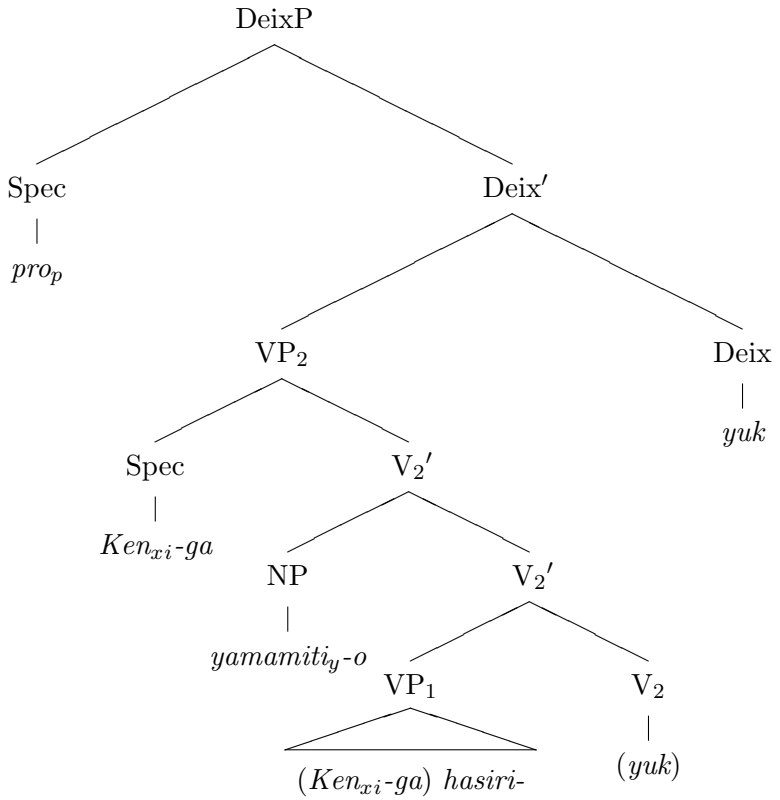
(147) Syntax of V-*te-yuk* 'V-CON-go' as aspect (after reanalysis)



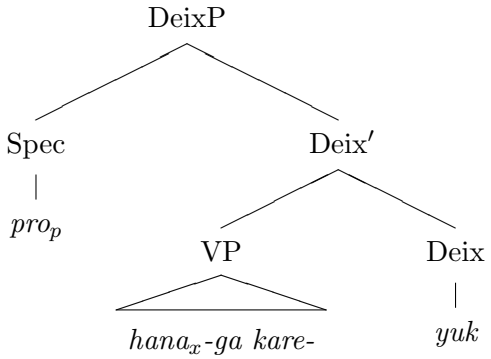
What is crucial to the grammaticalization process of Japanese *yuk* 'go' is that the reanalysis of V-*te-yuk* 'V-CON-go', in consequence of semantic bleaching of *te* and auxiliarization of *yuk* 'go', makes the *-te* conjunctive form corresponding to V-*yuk* 'V-go' not only in semantics but also in syntax. I repeat below in (148) the semantic representation of the aspectual *yuk* 'go' which I proposed for V-*yuk* 'V-go' as aspectual meaning. Recall that I give the same semantic representation to the motion verb for the transitional meaning of V-*yuk* 'V-go' as the one in (144).

(148)
$$\left[\begin{array}{l} \textit{yuk} \text{ 'go' (aspect)} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } \textit{VP}\left[\begin{array}{l}\text{ARG1: } x\end{array}\right], \text{P-ARG: } p \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p, \text{Loc}(e, s')) < \mathbf{DIS}(p, \text{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}'(e, s'), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \phi \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (x, z_{\text{state}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

(149) Syntax of V-*yuk* 'V-go' as movement



(150) Syntax of V-*yuk* 'V-go' as aspect



See (149) and (150) for the syntactic structures of V-*yuk* 'V-go' and compare them to (146) and (147). Notice that the complement which *yuk* 'go' takes when the verb base-generates as the head of VP_2 differs between the transitional V-*te-yuk* 'V-CON-go' and its infinitival counterpart: the motion verb takes a TP in the former whereas it takes a VP in the latter, depending on the existence of the conjunctive particle, *te*. The whole structure is equivalent between these two cases.

Consequently, the gate was opened up for the *-te* conjunctive form to inherit the aspectual meaning from the infinitival form. This process is, what I call, the renewal in the grammaticalization phenomena under discussion. Based on the observation which I have discussed in this section, I argue for Pattern D in Table 30 to be the most plausible association between semantic bleaching and reanalysis as to the grammaticalization of Japanese *yuk* 'go'. In other words, I am in agreement with Longobardi (2001) and Roberts and Roussou (2003) in that structural change such as reanalysis and semantic change are interconnected in the development of a grammatical morpheme. Moreover, what I have discussed in this section as to the difference in a syntactic behavior of V-*te-yuk* 'V-CON-go' between before and after reanalysis suggests that restructuring, as proposed by Miyagawa (1987) for the purposive construction in which the motion verb involves, V-*ni ik* 'V-to go', is the case for V-*te-yuk* 'V-CON-go' as well.

6.6 Motivation behind Movement of *yuk* 'go' and its Suppression

In the previous section, I have addressed the first problem which I raised in Section 6.3: proving the semantics-based assumption about the reanalysis of V-*te-yuk* 'V-CON-go'. I consider the second problem, repeated below in (151), in this section.

(151) Provided that there is syntactic evidence supporting the reanalysis of V-*te-yuk* 'V-CON-go', then what is the motivation behind movement of *yuk* 'go' in the transitional

V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go'? Why do the motion verb and *te-yuk* 'CON-go' in aspectual use base-generate as the head of Deixis Phrase, a functional phrase?

When it comes to the motivation behind movement during a syntactic derivation, feature-checking plays a key role if one takes the framework of the Minimalist Program (Chomsky 1995), which is formally defined as in (152).

(152) K ATTRACTS F if F is the closest feature that can enter into a checking relation with a sublabel of K.

(Chomsky 1995: 297)

Feature-checking is applied to formal features involved in syntactic computation, and there exist two different dichotomies as to these features: i) intrinsic versus optional and ii) interpretable versus uninterpretable. Intrinsic features are part of the nature of the lexical item, whereas optional features are introduced depending on a given syntactic derivation. Specific features which a lexical item has vary according to the grammatical category to which the lexical item belongs. The distinction between an interpretable feature and an uninterpretable feature refers to LF-interpretation, the interface with the Conceptual-Intentional system. The former remains throughout a derivation in need of semantic interpretation at LF, while the latter is to be deleted by feature-checking in order for the convergence of the derivation due to its LF-uninterpretability (Nakamura, Kaneko, & Kikuchi 2001). Table 36 gives an illustration of formal features of *We build airplanes*, taken from Nakamura et al. (2001). The case features of *we* and *airplanes* undergo checking and are to be deleted, as well as ϕ-features specified in *build*. The ϕ-features of *we* are LF-interpretable and they are not subject to deletion (*ibid.*).

Regarding to movement involved in grammaticalization phenomena, Roberts and Roussou (1999, 2003) postulate the following:

(153) "[...] under the *move* option one lexical item realizes (spells out) more than one feature, that is, two syntactic positions, while under *merge* a given lexical item spells out one feature."

(Roberts & Roussou 1999: 1021)

Based on the framework of Roberts and Roussou (1999, 2003), it is assumed that the motion verb under discussion, *yuk* 'go', should have more than one feature when it undergoes head-movement which I propose (i.e. V-to-Deix movement), whereas the verb spells out one feature when no such movement is posited. To paraphrase, I assume the motion verb to

Table 36: Formal features of *We build airplanes.*

	Interpretable features	Uninterpretable features
we	category [nominal] ϕ-features {[plural], [neuter], [1st person]}	case [nominative Case]
build	category [verbal]	case-assignment [assign accusative Case] ϕ-features {[plural], [neuter], [1st person]}
airplanes	category [nominal] ϕ-features {[plural], [neuter], [3rd person]}	case [accusative Case]

(Nakamura et al. 2001: 160)

have features to be checked at both VP and DeixP when it behaves as a lexical verb, which is the case of the full-verb *yuk* 'go' and the transitional V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go'; on the contrary, the verb no longer has a feature to be checked at VP but retains a feature to be checked at DeixP when it appears in the aspectual V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go', the cases where no head-movement of *yuk* 'go' and *te-yuk* 'CON-go' is involved. What features should we assume for the motion verb to account for head-movement and its suppression as the verb evolves from a lexical verb to the transitional V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go', and to the aspectual V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go'?

6.6.1 Motivation behind Movement: Case-Assignment and Point of View

As far as features crucial to the present discussion are concerned, I propose that *yuk* 'go' lexically has two features: a feature as to case-assignment and a feature as to the point-of-view holder, as given in (154).

(154) *Yuk* 'go' lexically has i) case-assignment [assign accusative Case/dative Case] and ii) point-of-view [POV], where the accusative case (marked by *o*) is to be assigned to a *path*-argument, and the dative case (marked by *ni*/*e*) to a *goal*-argument.

Under this assumption, *yuk* 'go' lexically has two options for case-assignment, the accusative case or the dative case. I give this optionality to the motion verb, considering the following examples. In (155a), *yuk* 'go' takes *miti* 'road' as a path and the accusative case is assigned to the *path*-argument. (155b) is an exemplification of assignment of the dative case to a

goal-argument, *gakkoo* 'school'. Observe (155c) for a case where *yuk* 'go' does not assign both the accusative case and the dative case at the same time; notice that *kono miti-o gakkoo-ni/-e* 'this road-ACC school-toward' is acceptable if *ni/e* is interpreted not as dative-case markers but as the ones denoting directionality of movement as in *gakkoo-e-to* 'toward school', for example.

(155) a. *Ken-ga kono miti-o it-ta.*
Ken-NOM this road-ACC go-PAST
'Ken went along this road.'

b. *Ken-ga gakkoo-ni/-e it-ta.*
Ken-NOM school-DAT go-PAST
'Ken went to school.'

c. ?*Ken-ga kono miti-o gakkoo-ni/-e it-ta.*
Ken-NOM this road-ACC school-DAT go-PAST
'Ken went along this road to his school.'

The same shall apply to the transitional case of V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go'. Consider (156a,b). As in the case of the full-verb *yuk* 'go' given in (155), the accusative case and the dative case cannot be assigned to the *path*-argument and the *goal*-argument *at the same time* when the infinitival form and the *-te* conjunctive form express spatial movement of the subject. Again, if we interpret *ni/e* as indicating directionality (i.e. *toward*), *kono miti-o gakkoo-ni/-e* will be acceptable in (156a,b). Notice that I consider V-*yuk* 'V-go' to be incompatible with a *goal*-argument (for some semantic reasons), hence the unacceptability of **Ken-ga gakkoo-ni/-e hasiri-yuk-u kookee* as in (156a) if *gakkoo-ni/-e* 'school-DAT' is read as the goal of the subject's movement (see also Arai and Hidaka (2013a)).

(156) a. *Ken-ga* {*kono miti-o/ *gakkoo-ni/-e/ ?*kono miti-o gakkoo-ni/-e*}
Ken-NOM {this road-ACC/school-DAT/this road-ACC school-DAT}
hasiri-yuk-u kookee.
run-go-PRES scene
'The scece of Ken go running {along this road/to school/along this road to school}.'

b. *Ken-ga* {*kono miti-o/gakkoo-ni/-e/ ?*kono miti-o gakkoo-ni/-e*}
Ken-NOM {this road-ACC/school-DAT/this road-ACC school-DAT}
hasit-te-it-ta.
run–CON-go-PAST
'Ken went running {along this road/to school/along this road to school}.'

In this respect, I regard any elements denoting the goal of movement as an adjunct when it co-occurs with the *path*-argument in a given sentence; in other words, I assume that the two alternatives as to case-assignment are in complementary distribution. Here, one may raise a question about the assumption about the optionality of case-assignment of *yuk* 'go': a question of how the optionality relates to the semantic representation which I propose for the motion verb. Recall the discussion I have maintained in Chapter 4 and the verb's semantics of movement meaning, repeated as (144) in this chapter. The question that may arise concerns, in particular, the temporal feature and the *path*-orientation of the motion verb. I first assume that *yuk* 'go' has a temporal feature such as $s < f$, which characterizes the temporal interval between the start time and the finish time of movement. Additionally, I assume *yuk* 'go' to be a *path*-oriented verb in light of Kageyama and Yumoto (1997: 128–136), and that the motion verb linguistically denotes movement and the arriving event is not lexically entailed by the verb, following the discussion held by Nakatani (2008, 2013). On this assumption, I set the movement meaning in the FORMAL quale while the arrival meaning in the TELIC quale in semantics. Since the former meaning and the temporal feature are posited as the ones which directly links to the truth-conditionality of a given sentence, *yuk* 'go' can associate with an adjunct denoting temporal duration such as *hatizikan* 'eight hours', and with a *path*-argument such as *yamamiti-o* 'mountain.road-ACC', an argument to which the motion verb gives the accusative case. Consider (157).

(157) *Ken-wa kono yamamiti-o hatizikan it-ta.*
Ken-TOP this mountain.road-ACC eight.hour go-PAST
'Ken went along this mountain road for eight hours.'

In contrast, the fact that a *path*-argument and a *goal*-argument cannot co-occur can be accounted for as follows. Consider (158) for an illustration. The arrival meaning specified as the TELIC quale of the semantics of *yuk* 'go' shows that this meaning is an implication by the motion verb, not a linguistic entailment as in the case of the transitional meaning, since I assume that the arrival event does not have a direct link to the truth-conditionality of a given sentence (see also Nakatani (2008, 2013)). Thus, even if *yuk* 'go' takes an element such as *santyoo* 'mountaintop', the verb does not assign the dative case to the *goal-like* element; in consequence, (158) becomes unacceptable if *santyoo-ni/-e* 'mountaintop-DAT' is dative-marked. It is acceptable if *santyoo-ni/-e* is understood as the direction of the movement: *toward the mountaintop*. In short, as I have already mentioned, a *goal-like* element which co-occurs with the *path*-argument is not an argument to which *yuk* 'go' assigns the dative case, rather it is an adjunct denoting the direction of the movement. It is assumed that a *goal-like* element can be assigned the dative case by *yuk* 'go' when it solely occurs with the

motion verb, as shown in (159); this is the case where the arrival meaning is more focused.

(158) ?*Ken-wa kono yamamiti-o santyoo-ni/-e hatizikan it-ta.
Ken-TOP this mountain.road-ACC mountaintop-DAT eight.hour go-PAST
'Ken went along this mountain road to the mountaintop for eight hours.'

(159) Ken-wa santyoo-ni/-e it-ta.
Ken-TOP mountaintop-DAT go-PAST
'Ken went to the mountaintop.'

Turning to another feature assumed for *yuk* 'go', the point-of-view feature ([POV]), this feature is of necessity for *yuk* 'go' to determine its deicticity, to identify from whose perspective a given sentence with the motion verb is being uttered. As I have discussed in Chapter 4, the point-of-view holder of *yuk* 'go' alters between the speaker herself and the individual with whom the speaker empathizes, as has been argued by Kuno and Kaburaki (1977) and Kuno (1978, 1987). I give the following examples for an illustration:

(160) a. Ken-ga yamamiti-o hasiri-yuk-u-kookee-o mi-ta.
Ken-NOM mountain.road-ACC run-go-PRES-scene-ACC look-PAST
'[I] looked at the scene of Ken running along a mountain road.'

b. Mari-ga Ken-ga yamamiti-o hasiri-yuk-u-kookee-o mi-ta
Mary-NOM Ken-NOM mountain.road-ACC run-go-PRES-scene-ACC look-PAST
to it-ta.
COMP say-PAST
'Mary said that she looked at the scene of Ken running along a mountain road.'

(= (70a,b) in Chapter 4)

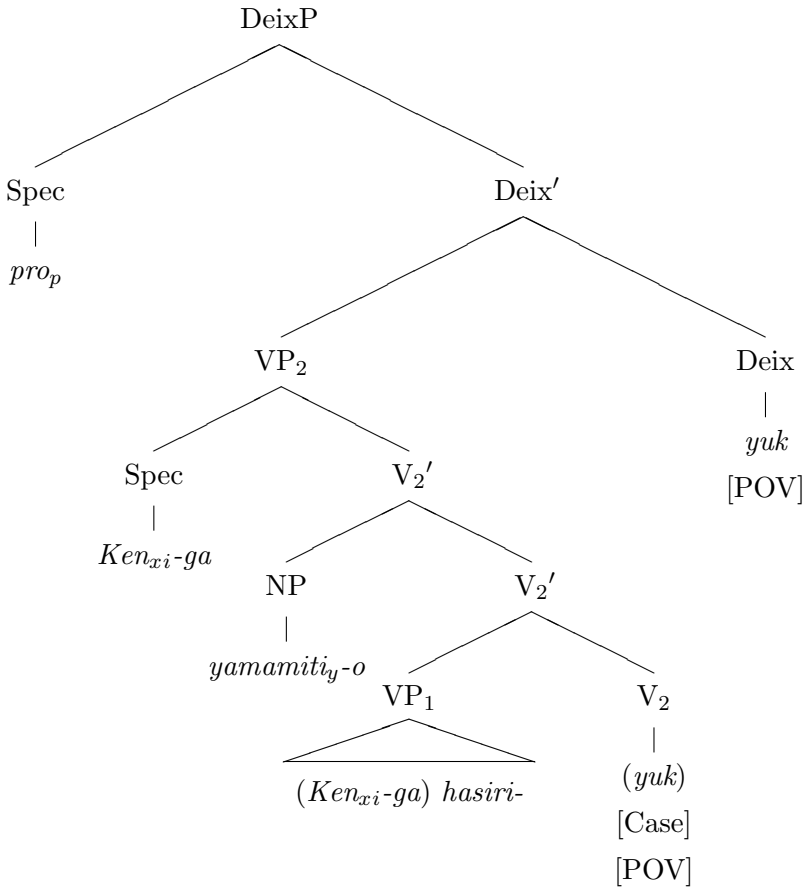
In (160a), it is the speaker who looks at the scene of Ken's running, and thus the speaker herself equals to the point-of-view holder of *yuk* 'go'. In (160b), in contrast, it is Mary that is corresponding to the point-of-view holder of the verb, and thus she looks at the scene of Ken's running; the speaker empathizes with Mary in this case. Such an alternation as to the point-of-view holder is observed as well in all the cases in which the motion verb is involved: namely, the full-verb *yuk* 'go', and both transitional meaning and aspectual meaning which V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go' express (see the relevant examples given in Chapter 4).

As long as the point-of-view feature is posited, however, the deictic property is not fully determined; in other words, other verbs which has deicticity (e.g. *ku* 'come', *kure/age* 'give', etc.) should have a similar feature as well. What is essential to the point-of-view feature

is to specify the directionality of its deictic property. The specification is handled by the two semantic functions which I propose in the present study: namely, **DIS** and **POV** (see Chapter 3 for details about these functions). By these semantic functions, the directionality of the verb's deicticity is determined; thus, the speaker or the speaker's empathy focus catches the event denoted by *yuk* 'go' stretching from her territory toward the territory of a non-speaker. In other words, I assume the point-of-view feature to be a generic feature concerning deictic predicates, whose specific properties—directionality, for example—are to be determined in semantics.

Now, I am going to demonstrate how the head-movement of *yuk* 'go' is motivated by these two features assumed in the case of transitional meaning, the full-verb *yuk* 'go', the infinitival V-*yuk* 'V-go', and the *-te* conjunctive V-*te-yuk* 'V-CON-go', and how the movement is suppressed in the cases of aspectual V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go'. Firstly, I submit the derivation of the former case, taking the transitional V-*yuk* 'V-go' as an example in (161). For deriving the transitional V-*yuk* 'V-go', I propose that *yuk* 'go' base-generates as the head of VP_2, with both of the features, namely, case-assignment and point of view. Here, *yuk* 'go' assigns the accusative case to the *path*-argument, *yamamiti-o* 'mountain.road-ACC', as a result of which the feature of case-assignment is checked and deleted. Then, the motion verb undergoes V-to-Deix movement for checking the point-of-view feature. I assume the point-of-view feature of *yuk* 'go' to be checked with a pro_p in SpecDeixP, for the pro_p is the argument of point-of-view holder which is induced by the deictic property of the motion verb, which is specified in the FORMAL quale of the verb's semantics. As a result of feature-checking with the pro_p in SpecDeixP, the point-of-view feature is deleted. The head-movement assumed in the derivation of V-*te-yuk* 'V-CON-go' as movement meaning can be accounted for in a similar process (consider this case with (146)).

(161)

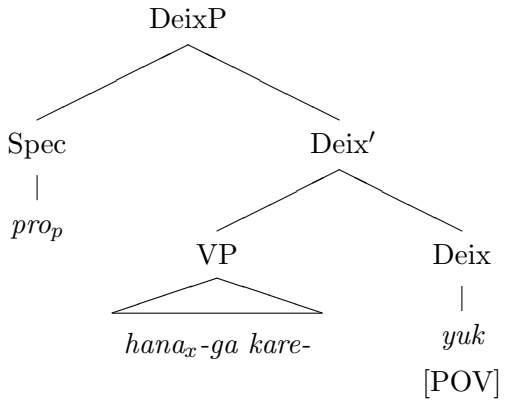


6.6.2 Suppression of Movement: the Loss of Case-Assignment Feature

Let me turn to the cases in which the head-movement of *yuk* 'go' is suppressed. Here, I consider the aspectual V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go' respectively, because, as has been proposed, *te-yuk* 'CON-go' base-generates as the head of Deixis Phrase in the latter case, as a result of reanalysis.

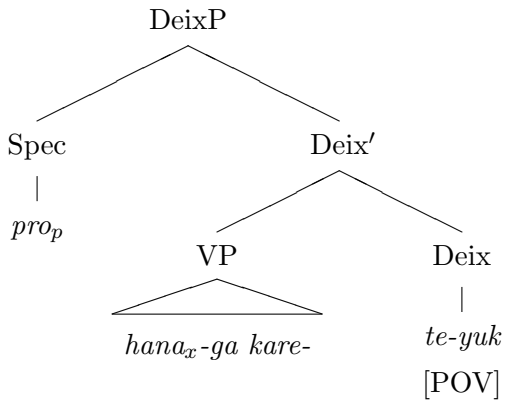
What is vital for suppressing the head-movement is that *yuk* 'go' and *te-yuk* 'CON-go' no longer have the feature of case-assignment in the aspectual cases; they only have the point-of-view feature, and thus they base-generate as the head of Deixis Phrase. To put it differently, what makes it possible for *yuk* 'go' and *te-yuk* 'CON-go' in the aspectual cases to merge as a functional head is that the point-of-view feature concerning deicticity is retained in these cases. It seems to be reasonable to assume the loss of the case-assignment feature in the aspectual cases, for V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go' of these cases do not take any elements expressing the resultative state or the goal of state change. Now, consider (162) for an illustration of the aspectual V-*yuk* 'V-go'.

(162)



For (162), *yuk* 'go' base-generates as the head of Deixis Phrase, with the point-of-view feature to be checked with the pro_p in SpecDeixP. Similarly, *te-yuk* 'CON-go' in the case of aspectual V-*te-yuk* 'V-CON-go' base-generates as the Deix head and the point-of-view feature is checked with the pro_p in SpecDeixP. Consider (163) for the example for the aspectual V-*te-yuk* 'V-CON-go'. The point-of-view feature is to be deleted after having checked with the pro_p in SpecDeixP in the respective case.

(163)



6.6.3 Section Summary

To summarize, the case-assignment feature and the point-of-view feature play important roles in motivating and suppressing the head-movement, which I have proposed in this study to account for syntactic derivations of the three forms involved in the grammaticalization process of Japanese *yuk* 'go'. For the full-verb *yuk* 'go' as well as the transitional V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go', in the cases where *yuk* 'go' behaves as a lexical verb, the motion verb first generates as the head of VP, a syntactic position where the case-assignment feature is to be checked. Then, the verb undergoes head-movement (i.e. V-to-Deix movement) for the point-of-view feature to be checked with the pro_p in SpecDeixP. On the contrary, for the aspectual V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go', *yuk* 'go' and *te-yuk* 'CON-go' base-generate as the Deix head, the head of a functional phrase, since they do not have the case-assignment

feature any longer as a result of grammaticalization; only the point-of-view feature remains in these grammaticalized forms, because the aspectual *yuk* 'go' and *te-yuk* 'CON-go' function as only manifesting the deictic property (or directionality) of how the event denoted by the preceding verb proceeds temporally, not as indicating the spatial movement of the subject. Owing to the loss of the feature as to case-assignment, no head-movement is involved in the aspectual cases.

Following Roberts and Roussou (1999, 2003), *yuk* 'go' which denotes transitional meaning spells out the case-assignment feature as the head of VP on the one hand and the point-of-view feature as the head of Deixis Phrase on the other, respectively in two different syntactic positions. In contrast, the aspectual *yuk* 'go' and *te-yuk* 'CON-go' merge as the Deix head from the outset—no longer moves to this syntactic position from the VP head—to spell out the point-of-view feature. This is how the different syntactic structures come into being between the transitional cases, *yuk* 'go' (as a full-verb), V-*yuk* 'V-go', and V-*te-yuk* 'V-CON-go', and the aspectual cases of the latter two forms, and this is my argument on the second problem that I have raised in Section 6.3: an account of motivation behind movement of *yuk* 'go' and its suppression for the verb's grammaticalization process from a syntactic perspective. Thus, I submit that the reanalysis of V-*te-yuk* ''V-CON-go' in aspectual meaning is a reasonable assumption about what is crucial to the renewal from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go' in the grammaticalization process of Japanese *yuk* 'go', given both syntactic evidence which I have presented in Section 6.5 and the features which the motion verb has intrinsically.

6.7 Features in Syntax and Qualia in Semantics

As has been proposed in the previous section, I submit that *yuk* 'go' lexically has two features, the case-assignment feature and the point-of-view feature, which are crucial to syntactic computation involving the motion verb; the syntactic structures are produced by checking these features with relevant elements appearing in the derivation. Under this assumption, in this section, I consider the third problem raised in Section 6.3:

(164) If one takes the framework of the Minimalist Program (Chomsky 1995), the second problem can be accounted for in terms of feature-checking. Then, how can the features assumed for *yuk* 'go' be related to the qualia in semantics?

In other words, what this problem concerns are i) the connection between the two features assumed for the syntactic account and the qualia in semantics and ii) how the suppression of movement in the aspectual cases can be accounted for in terms of the qualia-based semantics, which I have discussed in this dissertation. To address these points, I would like to

employ the distinction between logical meaning and non-logical meaning, which Roberts and Roussou (2003) maintain in discussing semantic bleaching in grammaticalization. Based on their discussion, I argue that the point-of-view feature, *logical meaning* which relates to the FORMAL quale in semantics, remains even after the motion verb in question grammaticalizes, whereas the case-assignment feature, *non-logical meaning*, is lost in accordance with the loss of the LCS value specified in the CONST quale. That is, the semantic bleaching in *yuk* 'go', which makes the verb and *te-yuk* 'CON-go' of V-*te-yuk* 'V-CON-go' aspectualized, is characterized as the loss of non-logical, case-assignment feature and the retention of logical, point-of-view feature.

6.7.1 Logical versus Non-logical Meaning in Grammaticalization

To begin with, I make a review of Roberts and Roussou's (2003) discussion on the distinction between logical meaning and non-logical meaning with reference to grammaticalization. According to Roberts and Roussou (2003: 221), the loss of non-logical meaning (or non-logical content) is characterized by the loss of argument structure, and what is retained as logical meaning (or logical content) is, for example, modal meaning that remains in the case of modals. They illustrate this distinction by *thelo* 'desire/want/wish' in Greek.

(165) a. *Thelo na grafo.*
want-1sg prt write-1sg
'I want to write.'

(Roberts & Roussou 2003: 60)

b. *Ta rouxa theloun plisimo.*
the clothes want-3pl washing
'The clothes need washing.'

(Roberts & Roussou 2003: 68)

c. *enas mas the na skotothei ki o rigas tou tha xasei.*
one ours will prt be-killed-3sg and the king his prt lose-3sg
'One of us will be killed and his king will lose.'

(Roberts & Roussou 2003: 67)

In (165a), *thelo* remains as a lexical, volitional verb, whereas the verb turns to a non-volitional modal auxiliary meaning 'need' in (165b), and further to a future marker *the na* or *tha* in (165c). Syntactically speaking, Roberts and Roussou (2003: 219–220) assume the development of Greek *thelo* as follows. As a lexical, volitional verb, *thelo* is merged in V and undergoes head-movement to T by way of v , as shown in (166a). As a non-volitional, modal auxiliary, it is merged in v and move to T as in (166b). When *thelo* turns to a

future marker as a consequence of reanalysis, it is merged in T or a higher functional head represented by M, as in (166c).

(166) a. [$_{\text{TP}}$ *thelo* [$_{v\text{P}}$ t_{thelo} [$_{\text{VP}}$ t_{thelo}]]]
b. [$_{\text{TP}}$ *thelo* [$_{v\text{P}}$ t_{thelo} [$_{\text{VP}}$ V]]]
c. [$_{\text{MP}}$ *tha* [$_{\text{TP}}$ V+T [$_{\text{VP}}$ t_{V}]]]

In the development illustrated above, modal elements such as *thelo* in Greek can encode necessity or possibility, an epistemic interpretation, once it is merged in a functional head such as T. Such modal meaning, which originates from the lexical, volitional verb, is considered the logical meaning of the lexical item, because it remains constant throughout the grammaticalization process, regardless of the loss of the descriptive content, which is characterized by losing argument structure, suggesting the loss of non-logical meaning.

In distinguishing logical meaning from non-logical meaning, Roberts and Roussou (2003) rest on von Fintel (1995) and Sher (1996) for the definition of logicality. Logical meaning is permutation-invariant, which is intuitively characterized as the semantic content insensitive to specific facts about the world, as exemplified by the case of the quantifier *all* in von Fintel (1995: 179): "The quantifier *all* expresses a purely mathematical relationship between two sets of individuals (the subset relation). Its semantics would not be affected if we switched a couple of individuals while keeping the cardinality of the two sets constant." Roberts and Roussou (2003) consider elements denoting tense or aspect that arise as a consequence of their lexical counterparts having been grammaticalized to be logical, in a sense that what tense or aspectual morpheme expresses is a quantificational relation between times or events. They maintain that such a quantificational relation which tense and aspect morphemes encode is a logical relation: namely, logical meaning of a lexical item. Roberts and Roussou (2003) consider logical meaning as the semantic content which a functional morpheme has (see also von Fintel (1995: 178–179) and Roberts (2010: 66–68)).

6.7.2 Logical versus Non-logical Meaning in Semantics of *yuk* 'go'

Now, let us consider what corresponds to logical meaning or to non-logical meaning in the semantics of Japanese *yuk* 'go'. I argue that, given that modal or aspectual meaning is equivalent to logical meaning, the aspectual and deictic properties which are specified in the FORMAL quale is the logical content of *yuk* 'go'; on the contrary, the verb's meaning specified by LCS in the CONST quale is the non-logical content of the motion verb.

Recall my discussion in Section 6.6. I have proposed that the case-assignment feature induces *yuk* 'go' to merge as the V head and the point-of-view feature motivates the verb

to undergoes head-movement to the Deix head so as to handle the deictic property of the motion verb. For the the aspectual cases of V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go', I have argued that the suppression of V-to-Deix movement is because these elements only have the point-of-view feature, and thus they are merged as the Deix head from the outset.

Then, recall the semantic representations which I have proposed for the motion verb in question, repeated below: (167) for *yuk* 'go' of transitional meaning, (168) for the aspectual *yuk* 'go' in V-*yuk* 'V-go', and (169) for the aspectual *te-yuk* 'CON-go' in the reanalyzed V-*te-yuk* 'V-CON-go'.

(167)
$$\left[\begin{array}{l} \textit{yuk}\text{ 'go' (movement)} \\ \text{ARG} = \left[\begin{array}{l}\text{ARG1: } x, \text{ ARG2: } y, \text{ P-ARG: } p\end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p, \text{Loc}(e, s')) < \mathbf{DIS}(p, \text{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}(e, s'), \\ \qquad\qquad \mathbf{VIEW}(y) = \langle s, f\rangle\rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (x, \text{ VIA } (y)) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (x, z_{\text{place}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

(168)
$$\left[\begin{array}{l} \textit{yuk}\text{ 'go' (aspect)} \\ \text{ARG} = \left[\begin{array}{l}\text{ARG1: } \textit{VP}\left[\begin{array}{l}\text{ARG1: } x\end{array}\right], \text{ P-ARG: } p\end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p, \text{Loc}(e, s')) < \mathbf{DIS}(p, \text{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}'(e, s'), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e\rangle\rangle \end{array}\right] \\ \text{CONST:} & \phi \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (x, z_{\text{state}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

(169)
$$\left[\begin{array}{l} \textit{te-yuk} \text{ 'CON-go' (aspect)} \\ \text{ARG} = \left[\ \text{ARG1: } \textit{VP} \left[\ \text{ARG1: } x\ \right], \text{P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p, \text{Loc}(e, s')) < \mathbf{DIS}(p, \text{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \text{Loc}'(e, s'), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \phi \end{array}\right], \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (x, z_{\text{state}}) \end{array}\right] \right] \end{array}\right]$$

Comparing (167) to (168) or (169), a marked difference among them is in the CONST quale; the LCS value specifying movement in the transitional *yuk* 'go' (GO (x, VIA (y))) is lost in the latter two aspectual cases of the verb. Given that the LCS value in the CONST quale involves specifying what syntactic arguments the verb takes, I submit that the specification of the CONST quale relates to the case-assignment feature of the verb, and thus the transitional *yuk* 'go' base-generates as the head of VP and later it moves to the head of Deixis Phrase to spell out the point-of-view feature. As I have mentioned, the point-of-view feature relates to the aspectual and deictic properties of the motion verb in question, the properties essential for distinguishing *yuk* 'go' from other verbs. Thus, it remains in the aspectual *yuk* 'go' and *te-yuk* 'CON-go' and induces them to base-generate as the Deix head from the beginning of the syntactic derivation, not undergoing head-movement from V to Deix due to the loss of the case-assignment feature. Semantically speaking, the point-of-view feature is characterized by the temporal feature, the distance function, and the point-of-view function which are specified in the FORMAL quale. In other words, under the assumption that the LCS value in semantics connects to the case-assignment feature in syntax which specifies the argument structure of the verb, I submit that the LCS value in the CONST quale amounts to non-logical meaning of the verb. The fact that the motion verb in question does not take any specific syntactic arguments but a VP (or a proposition/an event denoted by the preceding verb) as its complement in the aspectual cases is indicative of the loss of argument structure; this in turn suggests that the loss of CONST specification in the aspectual cases amounts to the loss of non-logical content as a result of grammaticalization of the motion verb concerned.[8] Given the characterization

[8]Since the aspectualized *yuk* 'go' and *te-yuk* 'CON-go' takes a VP (i.e. a proposition or an event denoted by the preceding verb), the input of **VIEW** is e in (168) and (169), which means that the point-of-view holder (p) assumes from the starting point of the event (s_e) to the endpoint of the event (f_e) in the aspectual cases.

of the point-of-view feature in syntax by the elements specified in the FORMAL quale—the temporal feature, the distance function, and the point-of-view function—in semantics, on the other hand, the retention of the functional feature in the aspectual cases suggests that the specification of the FORMAL value is equivalent to logical meaning of the verb.

When it comes to argument structure of *yuk* 'go' shown in (167–169), one may question whether the argument of point-of-view holder (P-ARG: p) remains constant in both transitional and aspectual meaning. I submit that P-ARG must remain in both cases because it differs from the arguments such as x (the subject undergoing movement) or y (the path of movement) in that it connects to the verb's deicticity which is specified in the FORMAL quale, not to the LCS value in the CONST quale. To put it differently, P-ARG relates to logical meaning of *yuk* 'go', not to non-logical meaning which is characterized by the CONST specification; thus, it is reasonable for this argument to remain in the grammaticalized forms of the motion verb.

6.8 Interim Summary

Here, I would like to sum up my discussion in this chapter thus far. To corroborate my semantics-based assumption about the reanalysis of V-*te*-*yuk* 'V-CON-go', I put a primary focus on proving that *te* and *yuk* 'go' are morphologically more integrated in the reanalyzed V-*te*-*yuk* 'V-CON-go', where the form expresses aspectual meaning, than in the pre-reanalyzed case in which the form expresses movement. I have shown that this is the case by a variety of syntactic tests (Section 6.5). Then, having proposed two syntactically intrinsic features, the case-assignment feature and the point-of-view feature, for *yuk* 'go', I have argued that the head-movement of the verb in the transitional case is due to spelling out these two features in different syntactic positions, the former in the head of VP and the latter in the head of Deixis Phrase respectively; on the other hand, I ascribed the suppression of such movement in the aspectual case to the loss of the case-assignment feature and the retention of the point-of-view feature, so that the aspectualized forms, *yuk* 'go' in V-*yuk* 'V-go' and *te*-*yuk* 'CON-go' in the reanalyzed V-*te*-*yuk* 'V-CON-go', base-generate as the head of Deixis Phrase from the outset of syntactic derivation (Section 6.6). In the sense that the formerly-moved *yuk* 'go' is merged as a functional head in a higher syntactic position, following Roberts and Roussou (2003), I characterize this as a result of suppression of movement. In Section 6.7, I have discussed the connection of the two syntactic features to the qualia in semantics of the motion verb in question; I argued that the case-assignment feature relates to non-logical meaning specified by the LCS value in the CONST quale, whereas the point-of-view feature is specified in the FORMAL quale, an equivalence to

logical meaning of the verb.

Thus, the discussion thus far in this chapter has not only elaborated the semantics-oriented reanalysis of V-*te-yuk* 'V-CON-go' with syntactic evidence as well as the renewal hypothesis about the grammaticalization process of the Japanese motion verb, but has drawn the theoretical consequences that Pustejovsky's (1995) framework of Generative Lexicon has for the study of grammaticalization.

6.9 Theoretical Consequences

6.9.1 On Semantics of Japanese *-te* Conjunctive Constructions

Firstly, I consider the extension of the present semantic analysis to other *-te* conjunctive constructions and their grammaticalization. What I focus on here is not the historical development of these constructions from a diachronic standpoint, but I intend to examine whether or not the assumption about the logical-/non-logical distinction in qualia semantics—the FORMAL quale for logical content and the CONST quale for non-logical content of a lexical item—holds true of other *-te* conjunctive constructions in Japanese. My inquiry in what follows focuses on some directional expressions among this type of construction: *ku* 'come' and *kure/age* 'give'. The discussion on other *-te* conjunctive forms are open to future research.

Let me start with the semantics of *ku* 'come' and its *-te* converbalized form, V-*te-ku* 'V-CON-come'. As I mentioned in Chapter 4 when presenting the semantic compositional process of *ki-pe-yuk* 'come-pass-go', I represented the semantics of the lexical *ku* 'come' as in (170) within the framework of the present study.

(170)
$$\left[\begin{array}{l} \textit{ku} \text{ 'come' (movement)} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y, \text{ ARG3: } z, \text{ P-ARG: } p \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p,\, \textit{Loc}(e, s')) > \mathbf{DIS}(p,\, \textit{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \textit{Loc}(e, f), \\ \qquad\qquad \mathbf{VIEW}(y) = \langle s, f \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{CAUSE } ([\text{GO } (x, \text{ VIA } (y))], \\ & \qquad [\text{BE-AT } (x,\, z_{\text{place}})]) \end{array}\right] \end{array}\right] \end{array}\right]$$

Given that the opposite directionality of *ku* 'come' in contrast to *yuk* 'go', that is, *ku* 'come' denotes movement from a non-speaker toward the speaker, the values of the distance function and the point-of-view function are like the ones shown in (170) accordingly. The

LCS specification of the CONST quale represents that the reaching event is lexically encoded by *ku* 'come' in light of Nakatani (2013).

When it comes to the *-te* converbalized form, V-*te-ku* 'V-CON-come', the form denotes aspectual meaning as well as movement meaning, given in (171a,b).

(171) a. *Kodomo-wa yama-de ookina tori-no hane-o*
children-TOP mountain-DAT big bird-GEN feather-ACC
hirot-te-ki-ta.
pick.up-CON-come-PAST
'Children came back, having picked up a feather of a big bird.'

b. *Dandan onaka-ga sui-te-ki-masi-ta*
gradually stomach-NOM hungry-CON-come-HON-PAST
'[I] am getting hungry.'

(Yoshikawa 1976: p. 202, p. 218)

For movement meaning of V-*te-ku* 'V-CON-come' such as *hirot-te-ku* 'pick.up-CON-come' in (171a), it is assumed that *ku* 'come' in this form have the same semantic representation as the lexical *ku* 'come' given in (170). In the aspectual case, in contrast, *ku* 'come' denotes the process of change according to Yoshikawa (1976: 218); *onaka-ga sui-te-ku* 'to get hungry' in (171b) is the case in point. What is assumed by saying *onaka-ga sui-te-ku* 'to get hungry' is that the state of one's stomach is becoming empty; that is, the state of her stomach in the process of changing from the state of it being full. I assume that the resultative state (i.e. to become total hungry) is not linguistically encoded by the aspectualized *ku* 'come'; formally speaking, the resultative meaning is demoted to the TELIC quale in the NTS in semantics. The movement meaning specified by GO (x, VIA (y)) of the lexical *ku* 'come' is assumed to be lost in the aspectual case as well, since no aspectual meaning arises for V-*te-ku* 'V-CON-come' if the movement meaning remains in the quale, hence the CONST quale being unsaturated. It is assumed that the aspectualized *ku* 'come' (or *te-ku* 'CON-come' as a whole if reanalysis is speculated) takes a VP, the proposition of the event denoted by the preceding verb, as its complement. In other words, the aspectualized *ku* 'come' denotes the changing process of the event which the preceding verb expresses. (172) represents the semantics of the aspectualized *ku* 'come'.

(172)
$$\left[\begin{array}{l} \textit{te-ku} \text{ 'CON-come' (aspect)} \\ \text{ARG} = \left[\ \text{ARG1: VP} \left[\ \text{ARG1: } x\ \right], \text{P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s < f, \\ \mathbf{DIS}(p,\ \mathit{Loc}(e, s')) > \mathbf{DIS}(p,\ \mathit{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \mathit{Loc}'(e, f), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \phi \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (x,\ z_{\text{state}}) \end{array}\right] \end{array}\right] \end{array}\right]$$

Taking *(onaka-ga) sui-te-ku* '(stomach-NOM) become.hungry-CON-come' in (171b) for example, the semantics of the aspectual V-*te-ku* 'V-CON-come' will be (174), where the semantics of *(onaka-ga) suk* '(stomach-NOM) become.hungry' as in (173) combines with that of *te-ku* 'CON-come' represented in (172).

(173)
$$\left[\begin{array}{l} \textit{(onaka-ga) suk} \text{ '(stomach-NOM) become.hungry'} \\ \text{ARG} = \left[\ \text{ARG1: } x\ \right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & s < f < r \\ \text{CONST:} & \text{GO}_{\text{Ident}}\ (x, \text{VIA-TO } \textit{HUNGRY}) \end{array}\right] \end{array}\right] \end{array}\right]$$

(174)
$$\left[\begin{array}{l} \textit{(onaka-ga) sui-te-ku} \text{ '(stomach-NOM) become.hungry-CON-come'} \\ \text{ARG} = \left[\ \text{ARG1: } \textit{VP} \left[\ \text{ARG1: } x\ \right], \text{P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s_1 = s_2\ <\ f_1 = f_2\ <\ r_1, \\ \mathbf{DIS}(p,\ \mathit{Loc}(e, s')) > \mathbf{DIS}(p,\ \mathit{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \mathit{Loc}'(e, f), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_{2e}, f_{2e} \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO}_{\text{Ident}}\ (x, \text{VIA-TO}) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (x, \textit{HUNGRY}) \end{array}\right] \end{array}\right] \end{array}\right]$$

With the resultative state of being hungry which is specified in the CONST value of *(onaka-ga) suk* '(stomach-NOM) become.hungry' matched to the corresponding LCS specification in the TELIC quale of *te-ku* 'CON-come', what is represented in the CONST quale of the composite is the process of state change. (174) represents that the intuitive observation in the literature (e.g. Yoshikawa 1976): V-*te-ku* 'V-CON-come' denotes the process of state change.

Speaking in terms of the distinction between logical-/non-logical meaning, I identify what remains in the FORMAL quale in the aspectualized case of *ku* 'come' with logical meaning of the verb; in contrast, the movement meaning and the resultative state, which are linguistically encoded as the CONST value by the lexical *ku* 'come', are assumed to be non-logical meaning of the verb. This is because an ungrammatical reading arises to *onaka-ga sui-te-ku* 'to get hungry' such as " *I (literally) came, feeling hungry", if these specifications remain in the CONST quale in the aspectualized case. For these reasons, I consider the three elements—the temporal feature, the distance function, and the point-of-view function—which are involved in specifying the aspectuality and the deicticity of *ku* 'come' to have a direct link to logicality of *ku* 'come', as in the case of *yuk* 'go', and thus they remain constant in the aspectualized cases of these motion verbs. Having examined the two cases of directional verbs, *yuk* 'go' and *ku* 'come', I submit that the logical-/non-logical distinction in meaning holds true of these verbs and their *-te* converbalized forms.

Next, I am going to examine *kure/age* 'give' and V-*te-kure/-age* 'V-CON-give'. It is said that *kure/age* 'give' is a directional verb and the difference in directionality is similar to that of *yuk* 'go' versus *ku* 'come'; *kure* 'give' denotes an event directed toward the speaker as in the case of *ku* 'come' while *age* 'give' denotes an event in the opposite direction—from the speaker toward a non-speaker—like *yuk* 'go' (Nakatani 2013: 208). According to Nakatani (2013), the goal of *kure/age* 'give' is the prospective possessor of the theme, not simply a location or recipient as in the case of *yuk* 'go' and *ku* 'come' (p. 208). (175a,b) are the examples of the lexical *kure/age* 'give'.

(175) a. *Kare-ga watasi-ni hon-o kure-ta/*age-ta*
he-NOM I-DAT book-ACC give-PAST/*give-PAST
'He gave me a book.'

b. *Watasi-ga kare-ni hon-o *kure-ta/age-ta*
I-NOM he-DAT book-ACC *give-PAST/give-PAST
'I gave him a book.'

(Nakatani 2013: 208)

Not *age* but *kure* is allowed to occur in (175a) because the speaker herself is the prospective possessor of the book in this example; in (175b), in contrast, it is he who will possess the book as a result that the speaker gave it to him, so that *age* is used instead of *kure*.

Moreover, Nakatani (2013) argues that the resultative possession is not necessarily realized in the actual world in contrast to *moraw* 'to be given'; formally speaking, it is intensionally denoted by *kure/age* 'give' while extensionally denoted by *moraw* 'be given'.

He gives the following examples as in (176a–c) for illustrating this point.

(176) a. *Kare-wa watasi-ni okane-o kure-ta ga, watasi-wa koban-da.*
he-TOP I-DAT money-ACC give-PAST though, I-TOP refuse-PAST
'He gave money to me, but I refused (to receive it).'

b. *Watasi-wa kare-ni okane-o age-ta ga, kare-wa koban-da.*
he-TOP I-DAT money-ACC give-PAST though, I-TOP refuse-PAST
'I gave money to him, but he refused (to receive it).'

c. *Kare-wa hahaoya-ni okane-o morat-ta* (**ga, kare-wa*
he-TOP mother-DAT money-ACC be.given-PAST (*though, he-TOP
koban-da).
refuse-PAST)
'He was given money by his mother (*but he refused (to receive it)).'

(Nakatani 2013: 208–209)

The contrast in acceptability as to the following statement expressing the refusal of receiving money demonstrates Nakatani's (2013) argument. Thus, he considers the meaning of resultative possession to be specified intensionally in the TELIC quale, according to his semantic formalization of *kure/age* 'give' (see Nakatani (2013: (23) on p. 209)).

Having accepted Nakatani's (2013) argumentation, the semantics of *kure/age* 'give' can be represented as in (177) and (178) respectively in my system of semantic formalization. The elements in the argument structure in (177) and (178) represent the followings; x is the person who does the activity of giving, y is the theme of giving, z is the prospective possessor of the theme (i.e. the speaker or a non-speaker), and p is the point-of-view holder.

(177)
$$\left[\begin{array}{l} \textit{kure} \text{ 'give'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y, \text{ ARG3: } z, \text{ P-ARG: } p \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s = f, \\ \mathbf{DIS}(p, Loc(e, s')) > \mathbf{DIS}(p, Loc(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = Loc(e, f), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (y) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (y, z) \\ \text{TRIGGER:} & \text{ACT-ON } (x, y) \end{array}\right] \end{array}\right] \end{array}\right]$$

(178)
$$\left[\begin{array}{l} \textit{age} \text{ 'give'} \\ \text{ARG} = \left[\ \text{ARG1: } x, \text{ ARG2: } y, \text{ ARG3: } z, \text{ P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s = f, \\ \mathbf{DIS}(p,\ \textit{Loc}(e, s')) < \mathbf{DIS}(p,\ \textit{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \textit{Loc}(e, s), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO } (y) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (y,\ z) \\ \text{TRIGGER:} & \text{ACT-ON } (x,\ y) \end{array}\right] \end{array}\right] \end{array}\right]$$

Some points need to be clarified as to these semantic representations. Firstly, I assume the temporal feature of *kure/age* 'give' to be $s = f$; there exists no temporal interval between the start time and the finish time of the event denoted by these verbs. In this respect, I regard *kure/age* 'give' as an achievement verb. Secondly, it is assumed that the TRIGGER quale needs to be specified in the case of *kure/age* 'give', following Nakatani (2013: 209). In (177) and (178), the LCS specification in the TRIGGER quale (ACT-ON (x, y)) represents that the activity of giving is initiated by x acting on y; y (the theme of giving) never is in the possession of z (the speaker/a non-speaker) without x's action on y. Thirdly, the movement meaning (GO (y)) is designated in the CONST quale because the theme of giving is in fact transferred from the giver to the recipient in the lexical use of *kure/age* 'give'. Thus, as in the cases of *yuk* 'go' and *ku* 'come', it is assumed that i) the deictic property of *kure/age* 'give' is specified in the FORMAL quale by the temporal feature, the distance function, and the point-of-view function, ii) the transitional meaning and the meaning of resultative state are set in the CONST quale and in the TELIC quale respectively. Unlike *yuk/ku* 'go/come', meanwhile, *kure/age* 'give' needs its TRIGGER quale to be specified.

Let us consider the semantics of *hon-o kure* 'book-ACC give' in (175a) for example. As for arguments, they will be i) x = the subject (*kare* 'he'), ii) y = *hon* 'book', and iii) z = *watasi* 'I', respectively; thus, the semantics of *hon-o kure* 'book-ACC give' will be represented as in (179).

(179)
$$\left[\begin{array}{l} \textit{kare-ga watasi-ni hon-o kure} \text{ 'he-NOM I-DAT book-ACC give'} \\ \text{ARG} = \left[\ \text{ARG1: } [\![\textit{kare}]\!],\ \text{ARG2: } [\![\textit{hon}]\!],\ \text{ARG3: } [\![\textit{watasi}]\!],\ \text{P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s = f, \\ \textbf{DIS}(p,\ \textit{Loc}(e, s')) > \textbf{DIS}(p,\ \textit{Loc}(e, f)), \\ \textbf{POV}(p) = \langle \textbf{POINT}(e) = \textit{Loc}(e, f), \\ \qquad\qquad \textbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{GO } ([\![\textit{hon}]\!]) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } ([\![\textit{hon}]\!],\ [\![\textit{watasi}]\!]) \\ \text{TRIGGER:} & \text{ACT-ON } ([\![\textit{kare}]\!],\ [\![\textit{hon}]\!]) \end{array}\right] \end{array}\right] \end{array}\right]$$

This represents that the theme of giving (*hon* 'book') moves to the prospective possessor (*watasi* 'I') by the subject's (*kare*) action on the theme; consequently, the book is now at my hand.

Then, how can the semantic composition of V-*te-kure/-age* 'V-CON-give', be explained in the system of the present study? Let us take (180a,b) for example.

(180) a. *Ken-ga watasi-ni pan-o tigit-te-kure-ta.*
Ken-NOM I-DAT bread-ACC break-CON-give-PAST
'Ken broke off the bread and handed it to me.'

b. *Ken-ga watasi-ni hon-o yon-de-kure-ta.*
Ken-NOM I-DAT book-ACC read-CON-give-PAST
'Ken read me a book.'

I regard (180a) as the lexical use and (180b) as the aspectual use of V-*te-kure/-age* 'V-CON-give' construction, respectively.[9,10] Thus, I interpret (180a) as that "Ken broke the bread into pieces and handed them to me", and (180b) as that "Ken read out the content of the book for the sake of me". In the latter example, the theme is eventified (i.e. "reading a book") so that it does not move from the giver, *Ken*, to the recipient of the event, *watasi*.

[9]Nakatani (2013: 210–211) points out that the theme is eventified in all cases of V-*te-kure/-age* 'V-CON-give', and the uneventified reading is "merely a by-product of pragmatic inference about what is most likely to be made available to the recipient." In light of his argument, (180a) has theme-eventified reading as well: for example, Ken broke the bread into pieces for me (but the bread was not handed to me). Here, however, I would like to take (180a) as the lexical case of V-*te-kure/-age* 'V-CON-give', which can be read like "Ken broke the break into pieces for me and he handed them to me". This is in light of Sawada (2014) which argues that (uneventified) transitional reading holds for V-*te-kure/-age* 'V-CON-give' as well as (eventified) aspectual reading. Ambiguity between uneventified and eventified reading for V-*te-kure/-age* 'V-CON-give' is left for future research.

[10]What I call the "aspectual use" of V-*te-kure/-age* 'V-CON-give' amounts to the benefactive use of the construction.

As for the semantic representations of (180a,b), firstly, I assume that in the lexical case such as (180a) *kure/age* 'give' behaves as a lexical verb; its semantics will be equivalent to (177) or (178). The semantics *(pan-o) tigit-te-kure* '(bread-ACC) break-CON-give' in (180a) will therefore be (182) as a result that the semantics of *(pan-o) tigir* '(bread-ACC) break', shown in (181), is combined with (177).

(181)
$$\left[\begin{array}{l} \textit{(pan-o) tigir} \text{ '(bread-ACC) break'} \\ \text{ARG} = \left[\ \text{ARG1: } x, \text{ ARG2: } y\ \right] \\ \text{QUALIA} = \left[\left[\left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & s = f \\ \text{CONST:} & \text{CAUSE } ([\text{ACT-ON } (x, y)], \\ & \quad [\text{BE}_{\text{Ident}}\text{-AT } (y, \text{BROKEN})]) \end{array}\right]\right]\right] \end{array}\right]$$

(182)
$$\left[\begin{array}{l} \textit{(pan-o) tigit-te-kure} \text{ '(bread-ACC) break-CON-give'} \\ \text{ARG} = \left[\ \text{ARG1: } \textit{VP}\left[\ \text{ARG1: } x, \text{ ARG2: } y\ \right], \text{ ARG2: } z, \text{ P-ARG: } p\ \right] \\ \text{QUALIA} = \left[\left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s_1 = f_1 < s_2 = f_2, \\ \mathbf{DIS}(p, \textit{Loc}(e, s')) > \mathbf{DIS}(p, \textit{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \textit{Loc}'(e, f), \\ \qquad \mathbf{VIEW}(e) = \langle s_{2e}, f_{2e} \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{ACT-ON } (x, y) \wedge \text{GO } (y) \end{array}\right], \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE-AT } (y_{\text{\_broken}}, z) \\ \text{TRIGGER:} & \text{ACT-ON } (x, y) \end{array}\right]\right] \end{array}\right]$$

In (182), the temporal feature represents that handing the pieces of bread ($s_2 = f_2$) takes place after the bread was broken ($s_1 = f_1$), indicating that the first and the second event occurs successively. This successive-event reading is represented by LCS in the CONST quale; its first component (ACT-ON (x, y)) denotes the activity of breaking the bread. On the assumption that the resultative possession is intensionally denoted by *kure/age* 'give' (Nakatani 2013: 208–209), the resultative state denoted by *(pan-o) tigir* '(bread-ACC) break' (BE_{Ident}-AT (y, BROKEN)) can be matched to the TELIC quale of *kure* 'give', hence BE-AT ($y_{\text{\_broken}}$, z). The specification of the TRIGGER quale of *kure* 'give' remains constant; it induces the movement of the broken bread to the recipient.

For the aspectual use of V-*te-kure/-age* 'V-CON-give', on the other hand, I represent its semantics like (183) and (184) respectively.

(183)
$$\left[\begin{array}{l} \textit{te-kure}\text{ 'CON-give'} \\ \text{ARG} = \left[\text{ ARG1: } \textit{VP}\left[\text{ ARG1: } x \text{ }\right], \text{ ARG2: } z, \text{ P-ARG: } p \text{ }\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s = f, \\ \mathbf{DIS}(p,\, \textit{Loc}(e, s')) > \mathbf{DIS}(p,\, \textit{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \textit{Loc}'(e, f), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \phi \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (e,\, z) \\ \text{TRIGGER:} & \text{ACT-ON } (x,\, e) \end{array}\right] \end{array}\right] \end{array}\right]$$

(184)
$$\left[\begin{array}{l} \textit{te-age}\text{ 'CON-give'} \\ \text{ARG} = \left[\text{ ARG1: } \textit{VP}\left[\text{ ARG1: } x \text{ }\right], \text{ ARG2: } z, \text{ P-ARG: } p \text{ }\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s = f, \\ \mathbf{DIS}(p,\, \textit{Loc}(e, s')) < \mathbf{DIS}(p,\, \textit{Loc}(e, f)), \\ \mathbf{POV}(p) = \langle \mathbf{POINT}(e) = \textit{Loc}'(e, s), \\ \qquad\qquad \mathbf{VIEW}(e) = \langle s_e, f_e \rangle \rangle \end{array}\right] \\ \text{CONST:} & \phi \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (e,\, z) \\ \text{TRIGGER:} & \text{ACT-ON } (x,\, e) \end{array}\right] \end{array}\right] \end{array}\right]$$

These representations suggest that the transitional meaning should not be specified in the CONST quale for the aspectual use of V-*te-kure*/*-age* 'V-CON-give'; rather, the CONST quale of V-*te-kure*/*-age* 'V-CON-give' is to be saturated by that of the preceding verb. In the meantime, it is reasonable to assume that the event takes place for the sake of the recipient (e.g. *watasi* or *Ken*); the recipient is assumed to be the prospective possessor of the event (Nakatani 2013: 209), that is, the individual who can be benefited from the event. Thus, the resultative possession should be specified in the TELIC quale as in the case of the lexical use of *kure*/*age* 'give'. The TRIGGER quale is also specified due to the need for the activity inducing the resultative possession. What is to be noted in (183) and (184) is the arguments which LCS specification for the TELIC and TRIGGER quale take. Considering theme eventification in the aspectual case of V-*te-kure*/*-age* 'V-CON-give', it is assumed that the LCS specification in these qualia takes the event (e) denoted by the preceding verb as one of the arguments. To be specific, the subject acts on the event denoted by the preceding

verb, hence ACT-ON (x, e) in the TRIGGER quale; what reaches the prospective possessor is the event, hence BE_{Ident}-AT (e, z) in the TELIC quale.

When it comes to argument structure of the aspectualized V-*te-kure/-age* 'V-CON-give', I assume that the aspectualized V-*te-kure/-age* 'V-CON-give' takes a VP as its complement, as in the case of aspectual V-*te-yuk/-ku* 'V-CON-go/come'. Unlike other arguments (e.g. the subject (x) or the object (y) which can be accessible from the VP), the argument of the prospective possessor (z) is unique to *te-kure/te-age* 'CON-give', and thus it is represented as the second argument in (183) and (184). P-ARG representing the point-of-view holder (p) is crucial for determining the directionality of V-*te-kure/-age* 'V-CON-give'.

For instance, the semantics of *(hon-o) yon-de-kure* '(book-ACC) read-CON-give' will be like (186), where the semantics of *(hon-o) yom* '(book-ACC) read' represented in (185) combines with that of the aspectual V-*te-kure* 'V-CON-give' as in (183).

(185)
$$\left[\begin{array}{l} \textit{(hon-o) yom} \text{ '(book-ACC) read'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & s < f \\ \text{CONST:} & \text{ACT-ON } (x, y) \end{array}\right] \end{array}\right] \end{array}\right]$$

(186)
$$\left[\begin{array}{l} \textit{(hon-o) yon-de-kure} \text{ '(book-ACC) read-CON-give'} \\ \text{ARG} = \left[\begin{array}{l} \text{ARG1: } \textit{VP}\left[\begin{array}{l} \text{ARG1: } x, \text{ ARG2: } y \end{array}\right], \text{ ARG2: } z, \text{ P-ARG: } p \end{array}\right] \\ \text{QUALIA} = \left[\begin{array}{l} \left[\begin{array}{ll} \textit{TS} & \\ \text{FORMAL:} & \left[\begin{array}{l} s_1 = s_2 < f_1 = f_2, \\ \textbf{DIS}(p, \textit{Loc}(e, s')) > \textbf{DIS}(p, \textit{Loc}(e, f)), \\ \textbf{POV}(p) = \langle \textbf{POINT}(e) = \textit{Loc}'(e, f), \\ \qquad\qquad \textbf{VIEW}(e) = \langle s_{2e}, f_{2e} \rangle \rangle \end{array}\right] \\ \text{CONST:} & \text{ACT-ON } (x, y) \end{array}\right] \\ \left[\begin{array}{ll} \textit{NTS} & \\ \text{TELIC:} & \text{BE}_{\text{Ident}}\text{-AT } (e, z) \\ \text{TRIGGER:} & \text{ACT-ON } (x, e) \end{array}\right] \end{array}\right] \end{array}\right]$$

(186) represents that the subject (x) acts on the event of reading a book toward the prospective possessor (z), and the event are done for the sake of z. The temporal feature of *(hon-o) yon-de-kure* '(book-ACC) read-CON-give' is assumed to be as such shown in (186): the start time and the finish time of *yom* 'read' and *te-kure* 'CON-go' connects with each other, assuming that *te* in V-*te-kure/-age* 'V-CON-go' functions as a event connector ($e_1 = e_2$) as I have argued for the case of V-*te-yuk* 'V-CON-go' in Chapter 4.

Again, the distinction between logical-/non-logical meaning in a lexical item holds true of *kure/age* 'give' and V-*te-kure/-age* 'V-CON-go'. For the lexical *kure/age* 'give', the transition of the theme is specified by giving this meaning in the CONST quale; meanwhile, the goal of giving and the action presupposed for bringing it about are specified in the TELIC and in the TRIGGER quale respectively. When these verbs become aspectualized, it is reasonable to assume that the transitional meaning should not be specified in the CONST quale, since the transition of the theme is no longer the case in a literal sense. In other words, the transitional meaning is sensitive to the specific facts about the world, as von Fintel (1995) states. Thus, the CONST quale corresponds to the non-logical meaning of *kure/age* 'give'. The status of the TELIC and the TRIGGER quale remains controversial in that the LCS specification of these qualia is assumed to take the event denoted by the preceding verb as one of its argument; meanwhile, the other argument—the TELIC quale particularly—needs to be specified by the aspectualized *te-kure/-age* 'CON-give'. Under the assumption that x of the LCS value in the TRIGGER quale can be accessed from the complement VP, this quale is considered to be non-logical meaning because the arguments of this LCS value does not link to argument structure, compared to the lexical case of *kure/age* 'give'. In contrast, z of the LCS value in the TELIC quale links to the argument structure of the aspectualized *te-kure/-age* 'CON-give', and it seems to be unique to this verbal form, as I have mentioned. Thus, according to the definition of logical-/non-logical meaning of a lexical item (von Fintel 1995, Sher 1996, Roberts & Roussou 2003), the TELIC quale can correspond to logical meaning. I leave this issue for further research.

On the other hand, the elements given in the FORMAL quale—the temporal feature, the distance function, and the point-of-view function—remain unchanged regardless of aspectualization of *kure/age* 'give'. These elements are important to characterize the aspectual and deictic property of these verbs, insensitive to the specific facts about the world. Thus, the FORMAL quale corresponds to logical meaning of *kure/age* 'give'. Consequently, I submit that the distinction between logical-/non-logical meaning of a lexical item holds true of *kure/age* 'give' and V-*te-kure/-age* 'V-CON-give' as well.

To summarize, my inquiry presented in this section demonstrates that the semantic formalization which I have proposed for *yuk* 'go' in the present study can account for the semantics of other directional verbs such as *ku* 'come', *kure/age* 'give' and the semantics of the *-te* conjunctive constructions of these verbs, V-*te-ku* 'V-CON-come' and V-*te-kure/-age* 'V-CON-give'. I have also demonstrated the distinction between logical-/non-logical meaning and its relationship to the qualia in semantic representation; I argued that the logical meaning corresponds to the FORMAL quale while the CONST quale represents the

non-logical meaning of a lexical item. The former meaning remains constant, whereas the latter meaning is lost as a consequence of grammaticalization; this is because the three elements in the FORMAL quale—the temporal feature, the distance function, and the point-of-view function—represent the essence of these directional verbs (i.e. aspectuality and deicticity), compared to the CONST quale which represents the lexical meaning of these verbs, which is subject to specific facts about the world.

6.9.2 On Morphological Reconfiguration of V_1-*te*-V_2 Constructions

Now that I have demonstrated the applicability of the present semantic analysis to other directional *-te* conjunctive constructions, I would like to turn to the syntactic exploration of whether or not the morphological reconfiguration, which I have discussed as to V-*te-yuk* 'V-CON-go' in Section 6.5, is the case as well for these directional *-te* conjunctive constructions. In what follows, I aim to argue that *te* and the second verb of these constructions are morphologically more integrated in the aspectual use compared to the cases in which *ku* 'come' and *kure/age* 'give' behave like a lexical verb in these constructions. Recall the syntactic grounds on which I have rested when discussing the morphological integrity between *te* and *yuk* 'go' in V-*te-yuk* 'V-CON-go'. I repeat the summary of my observation on V-*te-yuk* 'V-CON-go' in Table 37 for convenience.

Table 37: The observed results of V-*te-yuk* 'V-CON-go' as to the tests on simplicity and on complexity.

	Before reanalysis: [V-*te*]-*yuk*	After reanalysis: V-[*te-yuk*]
Negation of V_1	Ok	No
o-V-*ni nar* honorification	No	Ok
NPI-licensing across boundary	No	Ok
Crossed scrambling	No	Ok
Adjunct modification of V_2	Ok	No

The hypothesis here is that a similar difference shown in Table 37 can be observed as to V-*te-ku* 'V-CON-come' and V-*te-kure/-age* 'V-CON-give' constructions. Specifically, it is expected that when *ku* 'come' and *kure/age* 'give' behave like a lexical verb in these constructions they follow the results showing no morphological reconfiguration takes place: [V-*te*]-*ku*/-*kure*/-*age*. In the meantime, these *-te* conjunctive constructions should undergo the process in the aspectual case: V-[*te-ku*/*te-kure*/*te-age*].

Now, let us begin with the V-*te-ku* 'V-CON-come' construction. I observed that V-*te-ku*

'V-CON-come' shows a syntactically different behavior as well between the lexical, movement meaning and the aspectual meaning; the difference suggests that *te* and *ku* 'come' are morphologically more integrated in the latter case. Compare (187a–e) and (188a–e). The former is an illustration of V-*te-ku* 'V-CON-come' as transitional meaning, and the latter illustrates V-*te-ku* 'V-CON-come' denoting aspect.

(187) V-*te-ku* 'V-CON-come' as transitional meaning.

a. Negation of V_1:

Ken-wa siken kaizyoo-ni enpitu-o
Ken-TOP exam site-DAT pencil-ACC
{*mot-anai-de-ki-ta*/?*mot-te-ko-nakat-ta*}.
{have-NEG-CON-come-PAST/have-CON-come-NEG-PAST}
'Ken came to the venue of examination without any pencils.'

b. The *o*-V-*ni nar* honorification:

Yamada sensee-ga kyoositu-ni sore-o
Yamada professor-NOM classroom-DAT it-ACC
{*mot-te-o-kosi-ni nat-ta*/**o-moti-ni nat-te-ki-ta*}.
{have-CON-HON-come-HON-PAST/HON-have-HON-CON-come-PAST}
'Professor Yamada brought it to the classroom.'

c. NPI-licensing across boundary:

Ken-wa syokuba-ni yakkyoku-de kusuri-o morat-te-ki-ta.
Ken-TOP office-DAT pharmacy-at medicine-ACC receive-CON-come-PAST
'Ken came to his office after having received medicine at a pharmacy.'

i. *Ken-wa syokuba-ni yakkyoku-de* [*nanimo moraw-anai-de*]*-ki-ta.*
anything receive-NEG-CON-come-PAST

ii. **Ken-wa syokuba-ni yakkyoku-de* [*nanimo morat-te*]*-ko-nanakat-ta.*
anything receive-CON-come-NEG-PAST

d. Crossed scrambling:

Ken-wa gyuuniku-o kat-te densya-de baabekyuu paatii-ni ki-ta.
Ken-TOP beef-ACC buy-CON train-by barbecue party-DAT go-PAST
'Ken came to the barbecue party after having bought some beef.'

i. **Ken-wa* [*gyuuniku-o baabekyuu paatii-ni kat-te*] *densya-de ki-ta.*

ii. ?**Ken-wa densya-de* [*baabekyuu paatii-ni gyuuniku-o kat-te*] *ki-ta.*

iii. **Ken-wa* [*gyuuniku-o densya-de baabekyuu paatii-ni kat-te*] *ki-ta.*

e. Adjunct modification of V_2:

Ken-ga gakkoo-ni hasit-te
Ken-NOM school-DAT run-CON
{*kinoo/yukkuri-to/nombiri-to/isoi-de/awate-te*} *ki-ta.*
{yesterday/slowly/leisurely/hurriedly/hastily} go-PAST
'Ken came to school {yesterday/slowly/leisurely/hurriedly/hastily}.'

(188) V-*te-ku* 'V-CON-come' as aspectual meaning.

a. Negation of V_1:

Osanai toki-no omoide-wa Ken-no atama-kara nanihitotu
childhood-GEN memory-TOP Ken-GEN head-from anything
{**kie-nai-de-ki-ta/kie-te-ko-nakat-ta*}.
{disappear-NEG-CON-come-PAST/disappear-CON-come-NEG-PAST}
'Memories of his childhood did not disappear from Ken's mind.'

b. The *o*-V-*ni nar* honorification:

Hitode busoku-nanode ooku-no syatyoo-ga zyuugyooin-o
labor shortage-because many-of president-NOM laborer-ACC
{**huyasi-te-o-kosi-ni nat-ta/o-huyasi-ni nat-te-ki-ta*}.
{increase-CON-HON-come-HON-PAST/HON-increase-HON-CON-come-PAST}
'Owing to labor shortages, presidents of many companies have increased the number of laborers.'

c. NPI-licensing across boundary:

Yoru ni-nat-te, kion-ga sagat-te-ki-ta.
night PRTCL-become-CON temperature-NOM fall-CON-come-PAST
'The temperature has fallen as the night approaches.'

i. * *Yoru ni-nat-temo, kion-ga* [*mattaku sagar-anai-de*]*-ki-ta.*
never fall-NEG-CON-come-PAST

ii. *Yoru ni-nat-temo, kion-ga* [*mattaku sagat-te*]*-ko-nanakat-ta.*
never fall-CON-come-NEG-PAST

d. Crossed scrambling:

Yoru-ni-nat-te kion-ga zyuudo-ni
night-PRTCL-become-CON temperature-NOM ten.degrees.Celsius-to
sagat-te-ki-ta.
fall-CON-go-PAST
'The temperature fell to ten degrees Celsius as at night.'

i. *Kion-ga zyuudo-ni yoru-ni-nat-te sagat-te-ki-ta.*

e. Adjunct modification of V_2:

**Kabuka-ga agat-te*
stock.price-NOM rise-CON
{*kinoo-kara/saikin/zyozyo-ni/kyuugeki-ni/oohaba-ni/kakosaikoo-ni*}
{yesterday-since/recently/gradually/drastically/vastly/record.high-to}
ki-ta.
go-PAST
'Stock prices have risen {since yesterday/recently/gradually/drastically/vastly/to a record-high}.'

i. *Kabuka-ga* {*kinoo-kara/saikin/zyozyo-ni/kyuugeki-ni/oohaba-ni/kakosaikoo-ni*} *agat-te-ki-ta.*

(187a–e) and (188a–e) exhibit a noticeable result as to the morphological integrity between *te* and *ku* 'come' in the V-*te-ku* 'V-CON-come' construction; the conjunctive particle and the motion verb becomes more cohesive in the aspectual use. Firstly, the ungrammaticality of negating V_1 in the aspectual use as in (188a), compared to the transitional use shown in (187a), supports this claim.[11] The behavior as to NPI-licensing, crossed scrambling, and the selective modification of V_2 by adjuncts all further corroborates this claim: i) the *te* phrase does not constitute a barrier for NPI-licensing in (188c) in contrast to (187c)[12]; ii) the contrast in acceptability of crossed scrambling between (187d) and (188d) illustrates the complexity of V-*te-ku* 'V-CON-come' in the transitional use, suggesting that *te* and *ku* 'come' are morphologically less cohesive compared to the aspectual use; iii) *ku* 'come' can be selectively modified by adjuncts when V-*te-ku* 'V-CON-come' denotes movement as in (187e) but not when this conjunctive form denotes aspect as in (188e).

The contrast in the *o*-V-*ni nar* honorification needs some explanations. I observed the following difference between the transitional meaning and the aspectual meaning of V-*te-ku* 'V-CON-come'. As in (187b), *ku* 'come' itself can be honorified in the former meaning, hence *mot-te-o-kosi-ni nar*; in the latter meaning, in contrast, such honorification becomes unacceptable and the preceding verb is honorified instead, hence **huyasi-te-o-kosi-ni nar* but *o-huyasi-ni nat-te-ku* as in (188b). It is assumed that such a contrast in honorification

[11] For some readers, the unacceptability of *mot-te-ko-nakat-ta* in (187a) perhaps be questionable; it turns to be acceptable when the aspectual reading is activated for this construction. In other words, the acceptability of *mot-te-ko-nakat-ta* in (187a) is on par with *kie-te-ko-nakat-ta* in (188a) (Takao Gunji, p.c.). Still, I am sure that the readers can observe the contrast in acceptability between *mot-anai-de-ki-ta* in (187a) and **kie-nai-de-ki-ta* in (188a). Consequently, the contrast as to the first criterion, negation of V_1, holds.

[12] As Takao Gunji (p.c.) points out, (187cii) perhaps seems to be acceptable as same as (188cii) for some readers if *morat-te-ku* 'receive-CON-come' in (187c) is to be construed as aspectual meaning. That is, we observe a contrast only between (187ci) and (188ci). Even in this case, the contrast in (i) sentences suffices to support the present claim on the morphological integrity between *te* and *ku* 'come' in the aspectual reading.

can be due to a semantic reason. It is possible to honorify *ku* 'come' in the transitional meaning of V-*te-ku* 'V-CON-come' because the subject—*Yamada sensee* 'Professor Yamada' in (187b)—moves in fact; semantically speaking, the subject in this case is the agent of both events denoted by V-*te-ku* 'V-CON-come', namely the activity of bringing and the movement. In the aspectual meaning as in (188b), the subject, *ooku-no syatyoo* 'many presidents', does increase the number of laborers of their companies but it does not move; the subject is the agent of the first event only. In other words, whether or not the subject is semantically equivalent to the agent of *ku* 'come' plays a role in the contrast in the *o*-V-*ni nar* honorification between transitional and aspectual meaning of V-*te-ku* 'V-CON-come' (see also fn. 7). To sum up, the syntactically different behavior of V-*te-ku* 'V-CON-go' between the transitional meaning and the aspectual meaning illustrates that *te* and *ku* 'come' are morphologically more integrated in the aspectual use of the *-te* conjunctive form: V-[*te-ku*]. This therefore demonstrates the validity of the hypothesis which states that V-*te-yuk* 'V-CON-go' undergoes morphological reconfiguration when it bears aspectual meaning.

Next, I consider the V-*te-kure/-age* 'V-CON-give' construction. According to Sawada (2014), this *-te* conjunctive construction can denote transitional meaning, namely, movement of the object toward the recipient in some cases, while in other cases it denotes aspectual meaning. Consider (189a–e) for the former meaning and (190a–e) for the latter meaning of this construction.

(189) V-*te-kure/-age* 'V-CON-give' as transitional meaning.

a. Negation of V_1:

Ken-ga watasi-ni pan-o
Ken-NOM I-DAT bread-ACC
{*tigir-anai-de-kure-ta/*tigit-te-kure-nakat-ta*}.
{break-NEG-CON-give-PAST/break-CON-give-NEG-PAST}
'Ken gave me the bread without breaking it.'

b. The *o*-V-*ni nar* honorification:

Yamada sensee-ga watasi-ni pan-o
Yamada professor-NOM I-DAT bread-ACC
{*tigit-te-o-kure-ni nat-ta/*o-tigiri-ni nat-te-kure-ta*}.
{break-CON-HON-give-HON-PAST/HON-break-HON-CON-give-PAST}.
'Professor Yamada broke off the bread and handed it to me.'

c. NPI-licensing across boundary:

Ken-ga watasi-ni pan-o tigit-te-kure-ta.
Ken-NOM I-DAT bread-ACC break-CON-give-PAST

'Ken broke off the bread and handed it to me.'

i. *Ken-ga watasi-ni pan-o* [*tittomo tigir-anai-de*] *-kure-ta.*
any break-NEG-CON -give-PAST

ii. **Ken-ga watasi-ni pan-o* [*tittomo tigit-te*] *-kure-nakat-ta.*
any break-CON -give-NEG-PAST

d. Crossed scrambling:

Ken-ga pan-o tigit-te te-de watasi-ni kure-ta.
Ken-NOM bread-ACC break-CON hand-by I-DAT give-PAST

'Ken broke off the bread and handed it to me.'

i. **Ken-ga* [*pan-o watasi-ni tigit-te*] *te-de kure-ta.*

ii. ?**Ken-ga te-de* [*watasi-ni pan-o tigit-te*] *kure-ta.*

iii. **Ken-ga* [*pan-o te-de watasi-ni tigit-te*] *kure-ta.*

e. Adjunct modification of V_2:

Ken-ga watasi-ni pan-o tigit-te
Ken-NOM I-DAT bread-ACC break-CON
{*kinoo/sukosi/kirei-ni/isoi-de/teinei-ni*} *kure-ta.*
{yesterday/a.little/neatly/hurriedly/politely} give-PAST

'Ken broke off the bread and handed it to me
{yesterday/a little/neatly/hurriedly/politely}.'

(190) V-*te-kure/-age* 'V-CON-give' as aspectual meaning.

a. Negation of V_1:

Ken-ga watasi-ni hon-o {**yom-anai-de-kure-ta/yon-de-kure-nakat-ta*}.
Ken-NOM I-DAT book-ACC {read-NEG-CON-give-PAST/read-CON-NEG-PAST}

'Ken didn't read me a book.'

b. The *o*-V-*ni nar* honorification:[13]

Yamada sensee-ga watasi-ni hon-o
Yamada professor-NOM I-DAT bookd-ACC
{**yon-de-o-kure-ni nat-ta/o-yomi-ni nat-te-kure-ta*}.
{read-CON-HON-give-HON-PAST/HON-read-HON-CON-give-PAST}

[13]Notice that, for some readers, *yon-de-o-kure-ni nar* and *o-yomi-ni nat-te-kure/age per se* sound unacceptable as the honorified forms of V-*te-kure-age*; *yon-de-kudasar* is rather acceptable for these readers. Still, there appears a marked contrast in grammaticality between these two patterns of honorification when the lexical use and the aspectual use are compared; thus, the *o*-V-*ni nar* honorification illustrates the contrast in morphological integrity between *te* and *kure/age* 'give' in the two use of V-*te-kure/-age* 'V-CON-give'. That is, for the former use *kure/age* 'give' is morphologically independent of *te* such as [V-*te*]-*kure/-age*; however, for the latter use *te* and *kure/age* 'give' form one lexical item such as V-[*te-kure/-age*].

'Professor Yamada read me a book.'

c. NPI-licensing across boundary:

Ken-ga watasi-ni hon-o yon-de-kure-ta.
Ken-NOM I-DAT book-ACC read-CON-give-PAST
'Ken read me a book.'

i. **Ken-ga watasi-ni hon-o* [*tittomo yom-anai-de*] *-kure-ta.*
any read-NEG-CON -give-PAST

ii. *Ken-ga watasi-ni hon-o* [*tittomo yon-de*] *-kure-nanakat-ta.*
any read-CON -give-NEG-PAST

d. Crossed scrambling:

Ken-ga zyuppeezi hon-o watasi-ni yon-de-kure-ta.
Ken-NOM ten.page book-ACC I-DAT read-CON-give-PAST
'Ken read me the book for ten pages.'

i. *Ken-ga zyuppeezi watasi-ni hon-o yon-de-kure-ta.*

ii. *Ken-ga hon-o watasi-ni zyuppeezi yon-de-kure-ta.*

e. Adjunct modification of V_2:

i. **Ken-ga watasi-ni hon-o yon-de*
Ken-NOM I-DAT book-ACC read-CON
{*kinoo*/*saikin*/*zyozyo-ni*/*omosiroku*/*wakariyasuku*} *kure-ta.*
{yesterday/recently/gradually/intriguingly/comprehensively} give-PAST
'Ken read me a book
{yesterday/recently/gradually/intriguingly/comprehensively}.'

ii. *Ken-ga watasi-ni hon-o*
Ken-NOM I-DAT book-ACC
{*kinoo*/*saikin*/*zyozyo-ni*/*omosiroku*/*wakariyasuku*}
{yesterday/recently/gradually/intriguingly/comprehensively}
yon-de-kure-ta.
read-CON-give-PAST
'Ken read me a book
{yesterday/recently/gradually/intriguingly/comprehensively}.'

As for V-*te-kure*/*-age* 'V-CON-give' as well, I observe the difference summarized in Table 37 on p. 169. Negation of V_1 and the selective modification of V_2 by adjuncts are allowed in the transitional case of the *-te* conjunctive form in question, whereas NPI-licensing across the *te* phrase and crossed scrambling are not in this case.[14] On the other hand, V-*te-kure*/*-age* 'V-CON-give' as the aspectual meaning exhibits a marked contrast as to these syntactic tests.

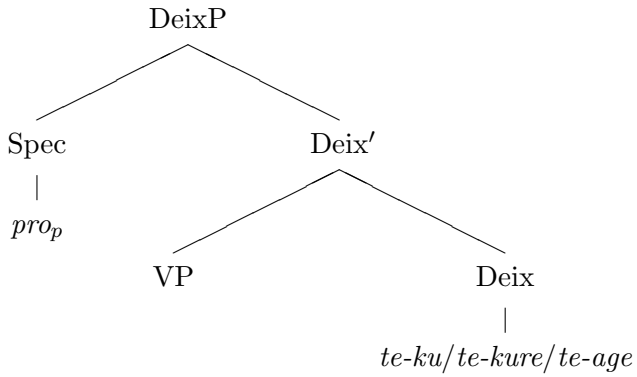
[14]Some readers may accept the crossed-scrambling case such as (189dii). This is because these readers

It turns impossible to negate V_1 and to selectively modify the *kure/age* 'give' by adjuncts; meanwhile, NPI-licensing across the *te* phrase and crossed scrambling becomes acceptable in the aspectual case. The contrast in grammaticality as to honorification can be due to the same semantic reason as I have argued for V-*te-yuk* 'V-CON-go' and V-*te-ku* 'V-CON-come'; shortly, the subject is the agent of both events (i.e. *tigir* 'break' and *kure* 'give') in the transitional case as in (189b), but it is only the agent of the first event (i.e. *yom* 'read') in the aspectual case as in (190b). Considering such a difference of V-*te-kure/-age* 'V-CON-give' between its two meanings, it is evident that *te* and *kure/age* 'give' behave as if they form one lexical item such as V-[*te-kure/-age*] when the *-te* conjunctive form denotes aspectual meaning. Consequently, it is proved that the morphological reconfiguration assumed for the aspectual V-*te-yuk* 'V-CON-go' is a reasonable hypothesis.

To recapitulate, the syntactic observations presented in this section demonstrate that in the aspectual use V-*te-ku* 'V-CON-come' and V-*te-kure/-age* 'V-CON-give' undergo reanalysis as in the case of V-*te-yuk* 'V-CON-go', whereby *te* and *ku* 'come' or *kure/age* 'give' become morphologically integrated as if they form one lexical item such as *te-ku* 'CON-come' or *te-kure/te-age* 'CON-give', compared to their counterparts for the lexical use, whose morphological boundary can be illustrated as [V-*te*]-*ku*/-*kure*/-*age*. These observations in turn confirm my assumption presented in the semantic analysis of these *-te* conjunctive constructions. That is, these *-te* conjunctive forms no longer have a specific LCS value in the CONST quale when they become aspectualized and their emptied CONST quale is to be saturated by that of the preceding verb in the compositional process. This is because the aspectualized forms—*te-ku* 'CON-come' and *te-kure/te-age* 'CON-give'—take a VP-complement, which in other words expresses the event or proposition denoted by the preceding verb. To illustrate, the aspectualized *te-ku* 'CON-come' and *te-kure/te-age* 'CON-give' have the following syntactic structure shown in (191) (see (163) for the syntactic structure of the aspectual V-*te-yuk* 'V-CON-go' for comparison).

interpret *(pan-o) tigit-te-kure* '(bread-ACC) break-CON-give' in (189dii) as the aspectual meaning, and this might be the primary reading of this example for them. If we read it as the transitional meaning (i.e. "the pieces of broken bread are actually handed to me"), I assume (189dii) to be unacceptable, with its acceptability slightly improved by contrast to the other two examples.

(191)



As in the case of aspectual V-*te-yuk* 'V-CON-go', I assume that *te-ku* 'CON-come' and *te-kure/-age* 'CON-give' are merged as the head of Deixis Phrase and takes a *pro*$_p$, which is identified with the point-of-view holder (p) in semantics, in SpecDeixP (see also Nishigauchi (2009, 2014)). The reason for the base-generation of *te-ku* 'CON-come' and *te-kure/-age* 'CON-give' is that these reanalyzed forms only have the point-of-view feature ([POV]), a syntactic feature which I proposed in (154) for *yuk* 'go'. Only having the point-of-view feature, these aspectualized *-te* conjunctive forms are merged as a functional head, named Deix in (191), a syntactic position where this functional feature can be spelled out.

The syntactic structure proposed for the aspectual case of V-*te-yuk* 'V-CON-go', V-*te-ku* 'V-CON-come' and V-*te-kure/-age* 'V-CON-give', illustrated in (163) and (191) respectively, is further proved to be reasonable by making a closer examination of the *o*-V-*ni nar* honorification in terms of the honorification of V$_1$-*i* V$_2$ complex predicates argued by Kuno (1983).[15] Putting Kuno's (1983) argument in a nutshell, he attributes the two different honorification patterns as to V$_1$-*i* V$_2$ compounds, exemplified in (192a,b), to two types of syntactic structure. Regarding (193), Kuno (1983) argues for the two different syntactic structures given in (194a,b) ((194a,b) themselves were first proposed by Shibatani (1973) to account for the transitive-use and the intransitive-use of Japanese verbs such as *hazime* 'begin' and *tuzuke* 'continute'. See also Perlmutter (1970) for a similar analysis of *begin* in English).

(192) a. *o*-V-*ni nar* honorifies the whole V$_1$-*i* V$_2$:
o-kaki-hazime-ni nar 'begin writing', *o-kaki-tuduke-ni nar* 'continute writing'

b. *o*-V-*ni nar* honorifies only V$_1$:
o-kaki-ni nari-hazime 'begin writing', *o-kaki-ni nari-tuduke* 'continue writing'

(Kuno 1983: 5–6)

[15] I extend my gratitude to Taisuke Nishigauchi for his suggestion about discussing *o*-V-*ni nar* honorification in terms of Kuno (1983).

(193) *Tanaka-ga tegami-o kaki-hazime-ru.*
Tanaka-NOM letter-ACC write-begin-PRES
'Tanaka begins to write a letter.'

(Kuno 1983: (9) on p. 8)

(194) a. [S *Tanaka-ga* [S *Tanaka-ga tegami-o kak*] *hazime*]
b. [S [S *Tanaka-ga tegami-o kak*] *hazimar*] → [S [S *Tanaka-ga . . .*] *hazime*]

(Kuno (1983: (10a,b) on p. 8) modified by the author)

According to Kuno (1983: 8), when *hazime* 'begin' behaves like a transitive verb, illustrated in (194a), the first type of *o*-V-*ni nar* honorification is applied: *o-kaki-hazime-ni nar* 'begin writing' as in (192a). The intransitive *hazime* 'begin', on the other hand, undergoes the second type of honorification: *o-kaki-ni nari-hazime* 'begin writing' as in (192b). This is because in the former case the surface subject will be the subject of the whole V_1-*i* V_2 compound and thus the whole compound is honorified; in the latter case in contrast, the surface subject is not the subject of V_2, so that only V_1 is honorified (Kuno 1983: 8–9).

Furthermore, Kuno (1983) analyzes the concerning two patterns of honorification in terms of the subject's *controllability*, à la Perlmutter (1970): for the transitive use, the activity denoted by *hazime* 'begin' and *tuzuke* 'continue' is in the control of the subject; for the intransitive use, these verbs denote the event which is out of control by the subject. Kuno (1983) gives the following examples to illustrate this point (pp. 9–13):

(195) a. *Yamada sensee-wa tegami-o kaki-yamete, tabako-ni hi-o tuke-ta.*
Yamada professor-TOP letter-ACC write-stop tobacco-DAT fire-ACC light-PAST
'Professor Yamada stopped writing a letter and lit up tobacco.'
b. *Yamada sensee-wa tegami-o o-kaki-yame-ni nat-te, tabako-ni hi-o o-tuke-ni nat-ta.*
c. * *Yamada sensee-wa tegami-o o-kaki-ni nari-yame-te, tabako-ni hi-o o-tuke-ni nat-ta.*

(Kuno 1983: (16) on pp. 10–11)

(196) a. *Taihen-da. Dantai-no-kyaku-ga moo tuki-hazime-ta-zo.*
EXCL-be group-GEN-guest-NOM already arrive-begin-PAST-PRTCL
'Oh, no! Group guests has just begun arriving.'

b. ??*Taihen-desu. Dantai-no o-kyaku-sama-ga moo o-tuki-hazime-ni nari-masi-ta-yo.*

c. *Taihen-desu. Dantai-no o-kyaku-sama-ga moo o-tuki-ni nari-hazime-masi-ta-yo.*

(Kuno 1983: (22) on pp. 11–12)

Since the second verb *yame* 'stop' in *kaki-yame* 'stop writing' in (195) is used only as a transitive verb and the subject, *Yamada sensee*, has control over the activity which *yame* 'stop' denotes, (195c) is ungrammatical by comparison to (195b). For (196a), (196b) is ungrammatical because *hazime* 'begin' of *tuki-hazime* 'arrive-begin' denotes the event which is uncontrollable by the subject; thus, only the first verb is honorified as shown in (196c).

In a close association with the *o*-V-*ni nar* honorication pattern of V_1-*i* V_2 complex predicates is the honorification of the V-*te-ir* 'V-CON-be' construction which Kindaichi (1959) observes. Kindaichi (1959) points out that the two patterns of honorification of V-*te-ir* 'V-CON-be', exemplified in (197a,b), depends on the extent to which *ir* 'be' auxiliarizes. (197a) is more likely if *ir* 'be' is more like a lexical verb, whereas (197b) tends to be used if the verb is more like an auxiliary.

(197) a. *kai-te-irassyar*, *kai-te-oideni nar*, *kai-te-orare*

b. *o-kaki-ni nat-te-ir*

(Kindaichi 1959)

Kindaichi's (1959) observation is suggestive of a complementary distribution of the honorification pattern of the V_1-*te*-V_2 constructions: V_2 retains the original, lexical meaning if only V_2 is honorified, whereas it is auxiliarized (or aspectualized) when only V_1 is honorified.

What can be drawn from the discussion by Kuno (1983) and Kindaichi (1959) are the followings. First, assuming from Kuno (1983), it is speculated that when only the preceding verb of the *-te* conjunctive constructions in question—namely, V-*te-yuk* 'V-CON-go', V-*te-ku* 'V-CON-come', and V-*te-kure*/*-age* 'V-CON-give'—is honorified (e.g. *o*-V-*ni nat-te-ik* 'HON-V-HON-CON-go'), *yuk* 'go', *ku* 'come', and *kure*/*age* 'give' behave like an intransitive verb, and these verbs take a VP-complement headed by the preceding verb; in other words, these verbs take an (uncontrollable) event as a complement. Second, based on Kindaichi (1959), *yuk* 'go', *ku* 'come', and *kure*/*age* 'give' behave more like an auxiliary (as a result of grammaticalization) when the honorification is applied to the preceding verb only. In short, if the observation which I have presented as to the *o*-V-*ni nar* honorification follows these assumptions, it then corroborates the semantic and syntactic analysis of the *-te* conjunctive

constructions in question; that is, in the aspectual case these constructions take a VP-complement as a consequence of reanalysis.

Now, let us return to the honorification pattern of the *-te* conjunctive constructions in question: namely, V-*te-yuk* 'V-CON-go', V-*te-ku* 'V-CON-come', and V-*te-kure*/*-age* 'V-CON-give'. I repeat the relevant examples below in (198–200) for convenience. In (198–200), (a)-sentences illustrate the lexical use and (b)-sentences illustrate the aspectual use of the respective *-te* conjunctive construction.

(198) a. *Yamada sensee-ga kyoositu-ni sore-o*
Yamada professor-NOM classroom-DAT it-ACC
{*mot-te-o-iki-ni nat-ta*/**o-moti-ni nat-te-it-ta* }.
{have-CON-HON-go-HON-PAST/HON-have-HON-CON-go-PAST}
'Professor Yamada brought it to the classroom.'

b. *Hitode busoku-nanode, ooku-no syatyoo-ga zyuugyooin-o*
labor shortage-because many-of president-NOM laborer-ACC
{**huyasi-te-o-iki-ni nat-ta*/ *o-huyasi-ni nat-te-it-ta*}.
{increase-CON-HON-go-HON-PAST/HON-increase-HON-CON-go-PAST}
'Owing to labor shortages, presidents of many companies have increased the number of laborers.'

(199) a. *Yamada sensee-ga kyoositu-ni sore-o*
Yamada professor-NOM classroom-DAT it-ACC
{*mot-te-o-kosi-ni nat-ta*/**o-moti-ni nat-te-ki-ta*}.
{have-CON-HON-come-HON-PAST/HON-have-HON-CON-come-PAST}
'Professor Yamada brought it to the classroom.'[16]

b. *Hitode busoku-nanode ooku-no syatyoo-ga zyuugyooin-o*
labor shortage-because many-of president-NOM laborer-ACC
{**huyasi-te-o-kosi-ni nat-ta*/ *o-huyasi-ni nat-te-ki-ta*}.
{increase-CON-HON-come-HON-PAST/HON-increase-HON-CON-come-PAST}
'Owing to labor shortages, presidents of many companies have increased the number of laborers.'

(200) a. *Yamada sensee-ga watasi-ni pan-o*
Yamada professor-NOM I-DAT bread-ACC
{*tigit-te-o-kure-ni nat-ta*/**o-tigiri-ni nat-te-kure-ta*}.
{break-CON-HON-give-HON-PAST/HON-break-HON-CON-give-PAST}.

[16]For (199a), some readers may accept such honorification as *mot-te-o-mie-ni nar* 'have-CON-HON-(lit.) see-HON' as well, the case in which *ku* 'come' is replaced by *mier* '(lit.) see'. The *mier*-suppletion of *ku* 'come' is acceptable when the verb is used more like a lexical verb. I refer the readers to Shibatani (2007a) for the connection between the *mier*-suppletion and the degree of grammaticalization of *ku* 'come'.

'Professor Yamada broke off the bread and handed it to me.'

b. *Yamada sensee-ga watasi-ni hon-o*
Yamada professor-NOM I-DAT book-ACC
{**yon-de-o-kure-ni nat-ta/o-yomi-ni nat-te-kure-ta*}.
{read-CON-HON-give-HON-PAST/HON-read-HON-CON-give-PAST}
'Professor Yamada read me a book.'

The contrast in grammaticality of the *o*-V-*ni nar* honorification between (a)-sentences and (b)-sentences in (198–200) conforms to the assumptions drawn from Kuno (1983) and Kindaichi (1959). The fact that only the preceding verb is honorified in the aspectual use illustrates that *yuk* 'go', *ku* 'come', and *kure/age* 'age' behave as an auxiliary in this use, considering Kindaichi's (1959) argument. Besides, such selective honorification of the preceding verb implies, based on Kuno's (1983) argument, that these verbs take a VP-complement in the aspectual use. Recall my discussion about the morphological reconfiguration of the concerning *-te* conjunctive constructions in the aspectual use; I submit that *te-yuk* 'CON-go', *te-ku* 'CON-come', and *te-kure/-age* 'CON-give' are the aspectualized forms of the verbs in question, and these reanalyzed forms take a VP-complement headed by the preceding verb (see Section 6.5 for syntactic evidence for *te-yuk* 'CON-go' and Section 6.9.2 for *te-ku* 'CON-come', and *te-kure/-age* 'CON-give'). Since the VP-complement denotes the event uncontrollable by the surface subject, according to Kuno (1983), it is assumed that the same can be said for the aspectual case of these *-te* conjunctive constructions. In fact, this holds true when the following examples are taken into consideration. (201) and (202) are patterned after Kuno (1983: (22), (25) on p. 12) which illustrates the event-uncontrollability by using verbs such as *suki-ninar* 'like-become' and *wakar* 'understand'. Consider:

(201) a. *Yamada sensee-wa gengogaku-ga masumasu*
Yamada professor-TOP linguistics-NOM more and more
suki-ninat-te-{*it/ki*}*-ta*.
like-become-CON-go/come-PAST
'Professor Yamada is becoming fond of Linguistics more and more.'

b. *Yamada sensee-wa gengogaku-ga masumasu*
Yamada professor-TOP linguistics-NOM more and more
{**suki-ninat-te-o-iki-ni nat-ta/o-suki-ni nat-te-it-ta*}.
{like-become-CON-HON-go-HON-PAST/HON-like-become-CON-go-PAST}
'Professor Yamada is becoming fond of Linguistics more and more.'

c. *Yamada sensee-wa gengogaku-ga masumasu*
Yamada professor-TOP linguistics-NOM more and more

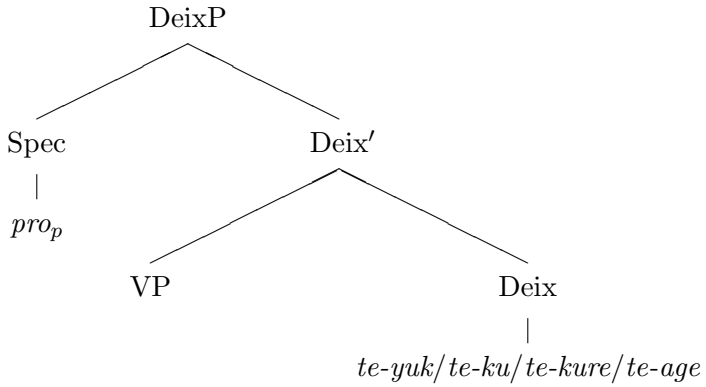
{**suki-ninat-te-o-{kosi/mie}-ni nat-ta/o-suki-ni nat-te-ki-ta*}.
{like-become-CON-HON-come-HON-PAST/HON-like-become-CON-come-PAST}
'Professor Yamada is becoming fond of Linguistics more and more.'

(202) a. *Yamada sensee-wa Ken-no iu-koto-o wakat-te-{kure/age}-ta.*
Yamada professor-TOP Ken-GEN say-thing-ACC understand-CON-give-PAST
'Professor Yamada understood what Ken said.'

b. *Yamada sensee-wa Ken-no iu-koto-o*
Yamada professor-TOP Ken-GEN say-thing-ACC
{**wakat-te-o-{kure/age}-ni nat-ta/o-wakari-ni nat-te-{kure/age}-ta*}.
{understand-CON-HON-give-HON-PAST/HON-understand-HON-give-PAST}
'Professor Yamada understood what Ken said.'

Since the ungrammaticality of selectively making *yuk/ku* 'go/come' and *kure/age* 'give' honorified in these examples follows Kuno's (1983) observation, these will be further evidence showing that the aspectualized *-te* conjunctive constructions take a VP as its complement. Therefore, I submit that (203) is the reasonable syntactic structure for these aspectualized *-te* conjunctive constructions. Given that the VP-complement denotes an event (e), semantically speaking, it is also reasonable to assume that the CONST quale is left unspecified for the aspectualized *te-yuk/-ku* 'CON-go/come' and *te-kure/-age* 'CON-give', and it will be filled with the CONST quale of the preceding verb in the compositional process; in other words, the event denoted by the preceding verb specifies the CONST quale of these forms.

(203)



Consequently, the discussion in this section and in the previous one (Section 6.9.1) demonstrates the theoretical consequences of the present study toward other directional expressions among the *-te* conjunctive constructions in Japanese. The present discussion not only corroborates the validity of the proposals which I made in this dissertation for elucidating the semantics and the syntax of these directional expressions, but also sheds a

light on explaining the grammaticalization phenomena by using the formal-semantic theory such as Generative Lexicon Theory propagated by Pustejovsky (1995).

6.10 Summary

In this chapter, I have verified the validity of the semantics-based hypothesis about the reanalysis of V-*te-yuk* 'V-CON-go' that I proposed in Chapter 4. As a result of diagnosing the syntactic behavior of V-*te-yuk* 'V-CON-go' as to several syntactic tests, it is evident that there occurs a change in morphological boundary in this *-te* conjunctive form, repeated in (204), between for its lexical, movement meaning and for its aspectual meaning, the meaning acquired as the consequence of grammaticalization.

(204) Reanalysis of V-*te-yuk* 'V-CON-go'

Before:	[V-*te*] *-yuk*	(movement after V / movement while V)
After:	V-[*te-yuk*]	(aspect)

Owing to such morphological reconfiguration, the renewal took place from the older, infinitival V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go', which thus the latter form started to bear aspectual meaning on behalf of the former.

I also re-considered the syntactic structure that I proposed for V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go', focusing on motivations for assuming two different structures for the movement meaning and the aspectual meaning of these grammaticalized forms. Having proposed two syntactic features for *yuk* 'go', the case-assignment feature and the point-of-view feature, I have elucidated the head-movement of *yuk* 'go' for the movement meaning and its suppression for the aspectual meaning. To be specific, *yuk* 'go' undergoes the V-to-Deix movement for the former use in order to spell out these two features in two different syntactic positions, V and Deix; on the other hand, the movement is no longer the case for the latter use because *te-yuk* 'CON-go' is merged as the Deix head, the functional position where the point-of-view feature is to be spelled out. Therefore, the discussion from a syntactic point of view corroborates the semantics-based hypothesis about the reanalysis of V-*te-yuk* 'V-CON-go' in the process of grammaticalization.

Argumentation over the relationship between the two syntactic features proposed for *yuk* 'go' and the qualia in semantic representation demonstrates that the FORMAL quale is equivalent to the logical meaning of this motion verb while the CONST quale is corresponding to the non-logical meaning of the verb, in light of Roberts and Roussou (2003) and the references therein. I maintained that the three elements in the FORMAL quale—the temporal feature, the distance function, and the point-of-view function—remain constant

regardless of grammaticalization, because they are the determinants of the aspectuality as well as the deicticity of the motion verb in question; these two properties are what distinguishes *yuk* 'go' from other verbs. The specification in the CONST quale, in contrast, is assumed to be sensitive to the specific facts about the world in the words of von Fintel (1995); therefore, it is lost as a result of grammaticalization. I submit that this discussion sheds a light on applying the framework of Pustejovsky (1995) to elucidating the phenomena in grammaticalization.

Lastly, I examined other directional verbs in Japanese, *ku* 'come' and *kure*/*age* 'give', and their *-te* converbalized constructions such as V-*te*-*ku* 'V-CON-come' and V-*te*-*kure*/*-age* 'V-CON-give' in order for demonstrating that the semantic and syntactic analysis which I have presented in this dissertation can be applicable to these directional expressions. I conclude that the present analysis is successful in giving accounts of these directional forms, because these *-te* conjunctive constructions exhibit a similar syntactic behavior as to the diagnoses that I employed for examining the morphological integrity of V-*te*-*yuk* 'V-CON-go'.

As a consequence, I believe that the semantic and syntactic analysis that I have discussed over the grammaticalization of Japanese *yuk* 'go' not only gives a detailed account of this phenomena but also presents its applicability to other directional expressions among the *-te* conjunctive constructions in the language.

Chapter 7 Conclusion

To conclude this dissertation, I am going to begin with the review of each chapter—from Chapter 2 through Chapter 6—in order to have the readers recall the remaining problems in the literature and the accounts which the present study gave to those issues. Then, I discuss the novelty and originality of the present study in Section 7.1, followed by the remarks on further research in Section 7.2.

Central to this study is explaining the three problems remaining in the literature on the Japanese motion verb, *yuk* 'go', in the context of grammaticalization. Having identified the three different forms in which the motion verb is involved, the full-verb *yuk* 'go', the infinitival V-*yuk* 'V-go', and the *-te* conjunctive V-*te-yuk* 'V-CON-go', I first posed a question on the interrelationship among these three verbal forms. From the perspective of grammaticalization, the latter two forms are assumed to have evolved from the full-verb *yuk* 'go' considering the findings and arguments from a variety of standpoints in the literature, from the synchronic, descriptive perspective to the historical and the grammaticalizationist perspectives (Sections 2.1–2.5 in Chapter 2). The previous researchers have i) given meticulous accounts of the deicticity and the meanings of the full-verb *yuk* 'go' and the *-te* conjunctive V-*te-yuk* 'V-CON-go'; ii) identified the difference in productivity of the infinitival V-*yuk* 'V-go' between the older and the present-day Japanese—V-*yuk* 'V-go' has become less productive as time went by—with quantitative evidence; and, with historical texts of the language, iii) argued for the aspectualization of V-*yuk* 'V-go' as of Old Japanese. To the best of my knowledge, however, little attention has been paid to explaining how the infinitival form and the *-te* conjunctive form have developed from the full-verb *yuk* 'go', in particular, why the former has become less productive while the latter is used predominantly in present-day Japanese. That is, the replacement process from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go' left unaccounted for in the previous studies; the motivations for the process needed to be clarified.

To elucidate the motivations for the replacement process, further research was needed for the infinitival V-*yuk* 'V-go' itself. This was the second problem which I raised for the present study. It was evident, from the descriptive studies, that V-*te-yuk* 'V-CON-go' has two different meanings, movement and aspect, and it was evident, from the historical studies, that V-*yuk* 'V-go' used to denote similar meanings as well. Such meaning overlap may cause

the infinitival form to be replaced by the *-te* conjunctive form, or not only the overlap in semantics but also that in syntax may trigger the process. A detailed examination of V-*yuk* 'V-go' was called for explaining what underlies the displacement process.

The last remaining problem is the morphophonological change in V-*te-yuk* 'V-CON-go', namely the variation between V-*te-ik* and V-*te-k*. Similar to other grammaticalization phenomena, the development of English *go* (*go* > *be going to* > *be gonna*) for a well-known example, the *-te* conjunctive form undergoes phonetic reduction and it is widely observed in present-day Japanese. Considering the reductive change in the context of grammaticalization, this phenomenon must be addressed by the present study as well for the purpose of capturing the whole process of the historical development of Japanese *yuk* 'go'. These three remaining problems are what made me embark upon the present study.

For this study, I formulated the hypothesis regarding the replacement from V-*yuk* 'V-go' to V-*te-yuk* 'V-CON-go' as the renewal process (see Table 6 in Chapter 3). Having recognized the need for different methods of solving the remaining problems considering their characteristics—a qualitative approach to the first and the second problems but a quantitative approach to the third one—, I employed the framework of Generative Lexicon (Pustejovsky 1995, Kageyama 2005, Hidaka 2012), a formal-semantic theory, for the former issues and the methodology of Variationist Sociolinguistics (Labov 1972 *et seq.*, Tagliamonte 2012, among others), a corpus-based analysis, for the latter (see Chapter 3).

In Chapter 4, the first and the second problems were accounted for by elucidating the grammaticalization process of the motion verb under study, from the full-verb *yuk* 'go' to the infinitival V-*yuk* 'V-go' and to the *-te* conjunctive V-*te-yuk* 'V-CON-go' in turn. The conclusions drawn from the chapter are as follows. Firstly, in terms of the qualia-based semantics, the aspectualization of *yuk* 'go' in the cases of V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go' is explained by removing the LCS specification from the CONST quale and assuming that the emptied quale is to be filled by the CONST value of the preceding verb. Meanwhile, the elements in the FORMAL quale—the temporal feature, the distance function, and the point-of-view function—remain intact in the process. I gave this formal account of aspectualization of the motion verb, because i) the CONST value is the core of the transitional meaning of the lexical *yuk* 'go' and it must be emptied in the aspectual case; if it is retained, no aspectual meaning arises; ii) the three elements in the FORMAL quale are essential for specifying the aspectuality and the deicticity of the verb. Secondly, the development of V-V compounds and the bleaching of *te* play roles in making V-*te-yuk* 'V-CON-go' bear aspectual meaning. The increase in semantic cohesiveness of V-V compounds and the morphological similarity between the complex predicates and V-*te-yuk* 'V-CON-go'

as well as the semantically-bleached *te* induced the reanalysis of the *-te* conjunctive form, formulated like [V-*te*]-*yuk* > V-[*te*-*yuk*]. Such morphological reconfiguration made V-*te*-*yuk* 'V-CON-go' semantically and syntactically equivalent to V-*yuk* 'V-go' as aspectual meaning; therefore, the aspectual meaning was taken on by the *-te* conjunctive form. I identified this as renewal which are widely observed in the development of tense and aspect morphemes worldwide (Smith 2006), and argued that the correspondence between the older form and the newer form in both semantic and syntactic levels makes the process possible. As a result of the renewal and the gradual increase of V-*te*-*yuk* 'V-CON-go' ensued, V-*yuk* 'V-go' has become less productive afterwards and driven to near-extinction in present-day Japanese.

Having offered such formal explanation for the first two problems, I turned to the morphophonological change in V-*te*-*yuk* 'V-CON-go'—the variation between V-*te*-*ik* and V-*te*-*k*—in Chapter 5. After having circumscribed the variable environments, I looked into the linguistic variation following the framework of Variationist Sociolinguistics. As a result of the present analysis, I identified the factors conditioning the phonetic reduction concerned: verb frequency, speech style, geography (i.e. speaker's place of birth), context, and gender. The effect magnitude of these factors shows that speech style exerts the biggest influence on the variable phenomenon; in short, the more informal speech style becomes, the more likely the phonetic reduction is to occur. As for other social factors, I ascribed the effect of geography to the dialectal difference between the vowel preference in the western area and the consonant preference in the eastern area. People coming from the western part of Japan tend to favor the unreduced variant, V-*te*-*ik*, by the effect of vowel preference in the area; in contrast, the phonetic reduction is more likely in the speeches by those coming from the eastern and the northern parts of the country, because vowels tend to be devoiced in these areas. The gender difference, where men favor the reduced form but women do not, is a reflection of female speakers being sensitive to using the standard variant, as has been argued by Trudgill (1983) and Cameron and Coates (1988). On the other hand, I observed that the reduced form is less likely in the negative context than in the affirmative context, as argued by Givón (1979): language change is conservative in the negative context. The phonetic reduction of V-*te*-*yuk* 'V-CON-go' is also constrained by the frequency effect; the reductive change is more likely to occur with a frequently-used preceding verb. In light of the arguments by Bybee (2002a, 2011) and Phillips (2001), I argued that such a tendency as to verb frequency is the result that the sequence of 'frequent verb + *-te*-*ik*' is recognized as morphologically more integrated, hence a higher probability of the reduced form with frequently-used verbs. Thus, the variationist analysis presented in Chapter 5 elucidated the third problem remaining in the literature.

Being aware that the reanalysis of V-*te*-*yuk* 'V-CON-go', which is crucial for the renewal scenario presented in Chapter 4, is yet semantics-based, I discussed in Chapter 6 syntactic evidence for the morphological reconfiguration by using several syntactic tests established by the previous researchers in order to identify the simplex and the complex nature of the V_1-*te*-V_2 predicates in Japanese. I further developed my accounts of what underlies the syntactic and semantic correspondence between the older, infinitival V-*yuk* 'V-go' and the newer, -*te* conjunctive V-*te*-*yuk* 'V-CON-go', namely the motivations for making the renewal possible. For this, the two syntactically intrinsic features of *yuk* 'go', the case-assignment feature and the point-of-view feature, were proposed. Following Roberts and Roussou (2003), I attributed the head-movement of the verb (i.e. movement from V to Deix) assumed for the transitional meaning of these grammaticalized forms to spelling out these two features in different syntactic positions—the former in V and the latter in Deix. On the other hand, I demonstrated that the suppression of such movement in the aspectual case of these forms is accounted for by assuming the loss of the former feature and the retention of the latter feature. Such differing status of the case-assignment feature and the point-of-view feature reflects the distinction between logical meaning and non-logical meaning in the semantics of *yuk* 'go'. In light of Roberts and Roussou (2003), I identified the former feature as the non-logical meaning and the latter as the logical meaning of the motion verb in question. The case-assignment feature should be non-logical for the verb, considering the fact that the verb no longer explicitly take any syntactic arguments as to the path or the goal of movement in the aspectual use by contrast to its transitional case. Given that the *path-*/*goal*-argument is integral to the LCS specification of the CONST quale, where the verb's transitional meaning is set, I considered the loss of the non-logical, case-assignment feature as a result of grammaticalization to be plausible for its connection to the CONST quale, the element which is to be lost in the semantic level. On the other hand, the point-of-view feature, whose value is specified by the distance function and the point-of-view function in the FORMAL quale, should be the logical content of the verb, because these semantic functions are the essence of specifying the verb's deicticity—together with the temporal feature for specifying the verb's aspectuality, which remains constant regardless of grammaticalization. Thus, the present discussion on the renewal from V-*yuk* 'V-go' to V-*te*-*yuk* 'V-CON-go' have been elaborated.

Lastly, I presented an attempt to extend the present research to other directional expressions such as *ku* 'come' and *kure*/*age* 'give' and their -*te* converbalized forms, V-*te*-*ku* 'V-CON-come' and V-*te*-*kure*/-*age* 'V-CON-give' (Section 6.9). I maintained i) that the semantic framework which I proposed in this study can be applied to these directional

expressions, and ii) that a similar morphological reconfiguration is observed as to the *-te* converbalized forms as well, which is to be accounted for syntactically and semantically as in the case of V-*te-yuk* 'V-CON-go'.

Consequently, from Chapter 2 through Chapter 6, I have offered a detailed explanation for the three remaining problems in the literature on the Japanese motion verb *yuk* 'go'. These problems could not have been elucidated unless they are analyzed from both the formal-semantic perspective and the corpus-based quantitative framework, which I employed in the present study.

7.1 A Formal and Corpus-based Analysis of Grammaticalization

As has been reviewed above, I have offered a detailed explanation of the grammaticalization process of Japanese *yuk* 'go'. What makes the elucidation of the historical process possible is employing the theory of Generative Lexicon propagated by Pustejovsky (1995) and elaborated by Kageyama (2005), and further by Hidaka (2012). In other words, employing the framework of Generative Lexicon is central to the present study. In fact, different frameworks of formal semantics have already been applied to explaining grammaticalization phenomena in the literature (e.g. von Fintel 1995, Eckardt 2007) and its impact has been emphasized considering the role of semantics in making a lexical item to be grammaticalized, as Eckardt (2007: 4) states: "*semantic reanalysis* [*sic*] is at the heart of the most instances of grammaticalization." The interplay between semantic change and syntactic reanalysis in grammaticalization is also an important issue to be addressed when one looks into the historical process (Eckardt 2007: 3). In this respect, I submit that the theory of Generative Lexicon is an adequate framework to address grammaticalization from both semantic and syntactic perspectives, because its semantic representation can handle these elements.

Introducing the temporal feature, the distance function, and the point-of-view function to semantic representation is also originality in the present study. The temporal feature, originally employed in Igarashi and Gunji (1998) and Gunji (2004), makes it possible to describe in detail the semantic composition of *yuk* 'go' with a preceding verb in V-*yuk* 'V-go' and V-*te-yuk* 'V-CON-go' as well as the aspectuality of the verb. The distance function and the point-of-view function are essential for specifying the deictic property of the motion verb. The latter two functions, in particular, play important roles in considering the interplay between semantics and syntax in that they have a direct link to an essential element in syntactic structure assumed for the directional expression, namely the argument of point-of-view holder (pro_p). Given the arguments over empathy focus held by Kuno and Kaburaki (1977), Kuno (1978, 1987), and its syntactic realization by Nishigauchi (2009, 2014), pro_p

is required in syntax. I submit that the present study is advantageous to the previous analyses of the motion verb in question (e.g. Nakatani 2013) in that it can handle the fact that the verb's point-of-view holder can be either the speaker herself or her empathy focus, by virtue of pro_p. Furthermore, I submit that postulating the three elements in semantic representation can give accounts of other directional expressions and its grammaticalization, as I have discussed as to the theoretical consequences of the present study. Thus, the semantic representation which I proposed helps explain the directional expressions among the V_1-*te*-V_2 predicates in Japanese.

The third point to be emphasized in this study is the argumentation over the link between the features in syntax and the qualia in semantics in the context of semantic-syntactic change in grammaticalization. My proposals for the two syntactic features, the case-assignment feature and the point-of-view feature, and their linking to the CONST quale and the FORMAL quale respectively elucidate the semantic-syntactic change which *yuk* 'go' undergoes in the grammaticalization process. Semantically, the aspectualization of the motion verb is successfully explained by the loss of the CONST value and the retention of the FORMAL quale. Syntactically, on the other hand, the grammaticalization process is accounted for by the loss of the case-assignment feature and the retention of the point-of-view feature. Given that the CONST quale is the lexical entailment of transitional meaning of the motion verb, which itself relates to the argument structure of the verb—the subject and the path/goal of movement are specified by LCS of this quale and the accusative/dative case is assigned to the path-/goal-argument by the case-assignment feature of the verb, the loss of the syntactic feature is a reflection of the loss of the CONST quale, as a result of which the head-movement of the verb in question is suppressed in the aspectual case of V-*yuk* 'V-go' and V-*te*-*yuk* 'V-CON-go'. In the meantime, the retention of the FORMAL quale in semantics and that of the point-of-view feature in syntax are also closely connected; the point-of-view feature is not fully determined by itself but is specified by the distance function and the point-of-view function set in the FORMAL quale. Since the two semantic functions specify the deicticity of the motion verb concerned, it is reasonable to assume that the values of these functions are the linchpin of the syntactic feature. Specifying the verb's deicticity is important to distinguish the verb from others, and thus the determining elements of deicticity should be retained throughout the grammaticalization process. Thus, the point-of-view feature remains intact in the process, thereby the aspectual *yuk* 'go' and *te-yuk* 'CON-go' turning to the functional head, Deix. In terms of the distinction between logical-/non-logical meaning of a lexical item (von Fintel 1995, Roberts & Roussou 2003), I submit that the FORMAL quale/the point-of-view feature is the logical content of the

verb in question, whereas the CONST quale/the case-assignment feature is the non-logical content of it. Consequently, the in-depth examination of the semantic-syntactic linking which I maintained in this study not only explains the interplay between features in syntax and qualia in semantics but also provides the reasoning behind the changes in these levels in the process of grammaticalization.

Finally, as has been emphasized by the forerunners of formal approaches to grammaticalization (e.g. Roberts & Roussou 2003), I believe that formal frameworks, be they semantic or syntactic, produce fruitful results for elucidating the historical development of a lexical item. What I would like to add to it is using a quantitative approach as well as a formal approach to examining the phenomenon. A formal analysis can elucidate the interrelationship between a lexical item and the grammatical morpheme which evolved from it. A quantitative analysis or corpus-based analysis corroborates the formal argumentation and further plays a role in looking into the variation between the older and the newer grammatical forms in transition or the morphophonological change occurring along with the advancement of grammaticalization, at a given synchronic stage or from a diachronic perspective. Stated differently, these two approaches complement each other. I submit that the present study brings a new light on research on grammaticalization in this respect as well.

7.2 Remarks on Further Research

Now, I close this dissertation with some remarks on further research. I mention that further research is needed both from a formal perspective and a corpus-based perspective.

Firstly, from a formal perspective, the primary task is elaborating the semantic framework which I proposed in this study; in particular, further verification is necessary with respect to whether or not the present mechanism can explain the V_1-*te*-V_2 predicates in Japanese at large, other than the directional expressions which have been examined in this dissertation. At the heart of this task is considering the role of the two semantic functions, the distance function and the point-of-view function; these two functions need a meticulous examination about their applicability to non-directional expressions such as *ir* 'be' and *ok* '(lit.) put', and so on. The distance function shows the spatial/psychological distance between the concerning event and the location of the point-of-view holder, in the case of the point-of-view holder is nearer either to the starting point or to the endpoint of the event. The former is the case of non-speaker-oriented verbs such as *yuk* 'go' and *age* 'give', whereas the latter is the case of the vebs with speaker-orientation such as *ku* 'come' and *kure* 'give'. The distance function is, in this sense, dichotomous. However, for the verbs with no such orientation, roughly speaking, the distance between a given event and the location of the

point-of-view holder would perhaps be equidistant both from the starting point and the endpoint of the event. The distance function needs to be revisited to capture this fact. The point-of-view function requires a closer examination as well, because the point in a given event on which the point-of-view holder focuses must be identified for the non-directional verbs. Here, considering the applicability of semantic mechanism, I humbly admit that the present framework is less advantageous to, for example, the mechanism proposed by Nakatani (2013), considering his framework can successfully explain the semantics of a variety of the V_1-*te*-V_2 predicates. To make the present analysis more versatile, the semantic mechanism proposed in this study must be elaborated.

Additionally, speaking from a formal-semantic description of grammaticalization, the distinction between logical meaning and non-logical meaning and its correspondence to the FORMAL quale and the CONST quale, respectively, are open to future research. I argued for the correspondence between logical meaning and the FORMAL quale, because the semantic element is the essence of specifying aspectuality and deicticity of a directional verb, which remain invariant, grammaticalization notwithstanding. In the meantime, I identified the CONST quale as the non-logical semantic content of the verb, arguing that the quale is the lexical entailment of the verb's transitional meaning and that grammaticalization—more specifically, aspectualization—can be captured by removing the LCS specification of the quale. Stated differently, I proposed this idea because the verb such as *yuk* 'go' cannot bear a temporal/aspectual meaning as long as the transitional meaning remains specified in the CONST quale even after it is grammaticalized; the transitional meaning in the quale hinders the verb from handling, in the words of Nakatani (2008, 2013), *theme-eventification*.

Here, one may question that, instead of removing the CONST specification, aspectualization can be represented as $\mathrm{GO}_{\mathrm{Ident}}$ (e), for example, by means of Gruber's (1965) *Identificational* in his semantic field theory, just as I did for representing the resultative state ($\mathrm{BE}_{\mathrm{Ident}}$-AT (x, z_{state})) in the present analysis. If one takes the alternative analysis, the CONST quale as well as the FORMAL quale is retained, regardless of grammaticalization, with a minor change in that the $\mathrm{GO}_{\mathrm{Ident}}$ function takes an event, instead of the ones specific to transitional meaning, namely the subject (x) and the path (VIA (y)) of movement. That both the FORMAL quale and the CONST quale remain constant in spite of grammaticalization implies that both of them should be the logical content of the verb such as *yuk* 'go'. If this alternative analysis were on the right track, the present analysis needs to be rectified accordingly. Still, we must be aware of a change in the CONST quale, a change that the $\mathrm{GO}_{\mathrm{Ident}}$ function takes an event, not the elements involved in transitional meaning. Given that the event is the one denoted by the preceding verb, it follows that the

CONST specification *per se* no longer has a link to the argument structure of the verb; this suggests that the grammaticalized morpheme loses argument structure (NB it still has the argument of the point-of-view holder (P-ARG: p) because this argument is the reflection of the FORMAL quale). Following Roberts and Roussou's (2003) criterion for distinguishing the logical-/non-logical content of a lexical item, the loss of argument structure implies that the semantic content should be non-logical. Whether aspectualization is represented by removing the CONST specification or by $\mathrm{GO}_{\mathrm{Ident}}$ (e), these two analyses become equivalent in the end. Given such equivalence, I submit that the former version of analysis maintained in this study is on the right track. In order for corroborating the present analysis, future research is called for addressing the logical-/non-logical distinction and its correspondence to the four qualia—FORMAL, CONST, TELIC, and TRIGGER (or AGENTIVE in the conventional Pustejovskyan term)—in semantic representation.

From a quantitative, corpus-based perspective, it is interesting to look into whether the similar factors condition morphophonological changes in other *-te* conjunctive constructions, namely V-*te-ir* versus V-*te-r* for V-*te-ir* 'V-CON-be', V-*te-ok* versus V-*tok* for 'V-CON-put', and so forth. Examining this issue perhaps helps understand the grammaticalization process of the Japanese *-te* conjunctive constructions comprehensively.

To conclude, the formal and corpus-based analysis of grammaticalization which I maintained in this dissertation brings a new light on the studies on the historical development of language. Although quite challenging tasks remain ahead of me for further research, it is worth working through those issues one by one in order for a more robust formal-semantic and corpus-based approach to grammaticalization.

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