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TABLE OF CONTENTS

Preface.....	v
Case-assignment and Case-realization in Arabic Relative Clauses Aliaa Abdelmoneim	1
Remarks on Optional Phonological Rules and Learnability Lori J. Davis	11
Metrics and Morphophonemics in Early English Verse Howard Lasnik	29
The Initial Consonant Mutations in Modern Irish: A Syllable Structure Analysis Simon Levi	41
Adjectives, Nominal Adjectives and Adjectival Verbs in Japanese: Their Lexical and Syntactic Status Keiko Murasugi	55
N'-Deletion in Japanese Mamoru Saito and Keiko Murasugi	87

*Papers are arranged alphabetically by author.

Adjectives, Nominal Adjectives and Adjectival Verbs in Japanese:

Their Lexical and Syntactic Status

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1. Introduction

This paper is concerned with the lexical and syntactic status of prenominal modifiers. I focus especially on adjectives, so-called adjectival verbs, and prenominal noun phrases in Japanese. I present an account of the syntactic and lexical properties of the two categories, that is, adjectives and adjectival verbs, which function as "adjectives" in Japanese, taking into consideration relevant facts from other languages. I examine the crucial properties of these two types of adjectives by comparing them with other prenominal modifiers, and how they are manifested in the grammar.

Features were specified for syntactic categories in order to provide a substantive foundation for a theory of categories, and to capture cross-categorical generalizations (e.g., Chomsky, 1983). The lexical feature system [+/− N] (substantive), [+/− V] (predicative) minimally distinguishes the four major lexical categories in English: V, N, A and P, as the table in (1) illustrates.

(1)

	+ V	− V
+ N	A	N
− N	V	P

This feature system makes it possible to capture morphological and syntactic generalizations, and plays an important role in a linguistic analysis based on the X-bar theory. This system allows the direct characterization of natural classes of syntactic categories. For example, verbs and prepositions are supposed to be Case-assigners in Case theory in the Government-Binding framework. This generalization can be expressed by saying that [− N] categories are Case-assigners; both verbs and prepositions are [− N].¹

A detailed examination of the empirical data of several languages, including German and Japanese, however, reveals that the feature system in (1), for example, does not necessarily accurately characterize the categorical distinctions attested in natural languages. For instance, van Riemsdijk (1983) argues that the adjective in German is characterized by the lone feature of [+ V], so the system of lexical features as defined in (1) needs some modification to account for cross-linguistic facts.

¹ Further, Contreras (1987) proposes the additional lexical feature of [+/− A] in order to characterize Predicate Nominal Phrases (PNP), such as "John turned smart", which are similar in some respects to NPs and APs. Contreras's (1987:238) feature system is as follows:

(i)

	NP	VP	AP	PP	PNP
N	+	-	-	-	+
V	-	+	-	-	-
A	-	-	+	-	+

He argues that this system has the advantage of being able to characterize the Passive Participle directly as [− N, + V, + A]. But we will not discuss his proposals further in this paper.

Traditional Japanese linguists report that there are two kinds of adjectives in Japanese which exhibit morphologically and syntactically different behavior. One is called an "adjective", and the other is called an "adjectival verb" in traditional Japanese linguistics. More recently, the second has been called an "adjectival noun" (Martin, 1975). The following are examples² of both types.³

- (2) (i) Adjective:
- | | |
|-------------|-------------|
| kawai-i | 'cute' |
| utsukushi-i | 'beautiful' |
| isamashi-i | 'brave' |
| mazushi-i | 'poor' |
| oishi-i | 'delicious' |
- (ii) Nominal Adjective:
- | | |
|------------|-------------|
| kirei-na | 'beautiful' |
| yuukan-na | 'brave' |
| binbou-na | 'poor' |
| shizuka-na | 'quiet' |
| hen-na | 'strange' |

Historically, the evolving system of nominal adjectives is considered to be filled in semantic gaps in the system of adjectives. That is, originally, only adjectives were used to modify the object in focus. In the Heian era (794-1192), because the lexicon of adjectives did not provide enough modifiers, some of the borrowed nouns from Chinese came to be employed as adjectives, being followed by a copula, both predicatively and attributively. This is considered to be the origin of nominal adjectives.

Both types of "adjectives" precede a noun, and taken together, these constitute a noun phrase, as illustrated in the examples in (3). Note that nominal adjectives are distinguished from adjectives by the attachment of the so-called attributive form of the copula, *-na*, in prenominal modification.

² The examples of adjectives in (2) are derived forms. The underlying representations before the application of phonological rules are: "kawaik-i", "utsukushik-i" and "oishik-i". See (8) for full inflectional paradigm of adjectives.

³ A few remarks are needed on the conventions that will be observed in presenting data for the discussion in this paper. The hyphens used in (2) indicate the relevant morpheme boundaries. An English gloss is provided for each constituent of the Japanese form. Where necessary this is followed by an idiomatic translation enclosed in quotation marks. These conventions will be observed throughout the discussion to aid the reader in interpreting the Japanese data.

(3)

- a. Adj.: kawai-i onna no ko
 (cute girl)
 'a cute girl'
- utsukushi-i hana
 (beautiful flower)
 'a beautiful flower'
- b. N.Adj.: kirei -na hana
 (beautiful-copula flower)
 'a beautiful flower'
- shizuka-na yoru
 (quiet -copula night)
 'a quiet night'

Both types of adjectives follow the subject NP, forming an AP Equative, as shown in (4). (4c) is the historical form of the AP Equatives, which is still in use. Across time, *de aru* became an optional variant for *da*. *Aru* is an existential verb, and *de* could be analyzed as either (i) case realization of the Case assigned by *aru* or (ii) a postposition or (iii) the attributive form of the copula. (4b) and (4c) are both well-formed sentences in present-day Japanese.⁴

(4)

- a. Adj.: Hana ga utsukushi-i.
 (flower NOM beautiful)
 'The flower is beautiful'
- b. N.Adj.: Hana ga kirei-da
 (flower NOM beautiful COPULA)
 'The flower is beautiful'
- c. N.Adj.: Hana ga kirei -de aru
 (flower NOM beautiful COPULA (existential-be))
 'It is the case that the flower is beautiful'

As the examples in (3) show, both types of adjectives modify the head N, and function as prenominal modifiers. They also form AP Equatives. In short, the two adjectives can be either attributive or predicative. However, they have different lexical and syntactic properties.

Miyagawa (1987) argues that Japanese 'adjectives' have the lone feature [+V], and Japanese 'adjectival nouns' (= nominal adjectives) are associated with the features [+V, +N], that is, the feature matrix associated with adjective in English. Miyagawa's feature specifications of the lexical categories in Japanese are as follows:

⁴ Adjectives cannot take the copula, as shown in (6).

- (5) Verb : [+V, -N]
 Noun, Verbal Noun : [-V, +N]
 Adjective : [+V]
 Adjectival Noun : [+V, +N]
 Postposition : [-V, -N]

In this paper, I present a detailed account of the two types of adjectives. As will be discussed below, Miyagawa (1987) uses the term 'adjective' and 'adjectival noun' ambiguously to refer to both their stem and full form including the copulative element. I give a more precise characterization of the internal structure of these two types of adjectives that has interesting empirical consequences for issues related to feature neutralization. I point out the differences and similarities between these two adjectives in Japanese, and propose feature specifications that are different from Miyagawa's. More specifically, I suggest the following feature specifications: the full form of the adjective in Japanese is associated with the lone feature [+V]; the stem of the adjectival noun, which I call nominal adjective, bears the features [-V, +N], that is, the feature matrix associated with nouns; and the full form (including copula) of the adjectival noun, which I call adjectival verb, has the feature [+V], that is the same feature as the one associated with adjectives.

This paper is organized into sections as follows. In Section 2, I overview some relevant Japanese data concerning adjectives and adjectival verbs, and discuss the syntactic and lexical commonalities and differences between them, by comparing them also with the syntactic and morphological behavior of other categories. I basically assume that no straightforward semantic class distinguishes adjectival verbs from adjectives. This is already obvious from the examples in (2) (e.g., compare the adjective *kawai-i* (= cute) and the nominal adjective *kirei-na* (= beautiful)). Hence, I assume that the difference between adjectives and adjectival verbs in Japanese is purely syntactic (and morphological).⁵ Through this study, I will also examine which lexical features are necessary and sufficient to characterize the natural classes of syntactic categories, including Japanese adjectives, and adjectival verbs. This will be discussed in sections 3 and 4; section 3 focuses mainly on Japanese adjectives, and section 4 on adjectival verbs. In passing, we compare the particle *no*, meaning *of*, which is inserted between two nouns, and the nominal copula *na*, which is inserted between a nominal adjective and a noun, with the following question in mind: if nominal adjectives share many properties with nouns, why can't the case particle *no* be used instead of the copula as in the case with nouns? Section 5 concludes this paper.

2. Preliminary Survey of Data

Before starting the analysis and discussion of the two adjectives in Japanese, let us first descriptively survey the syntactic and morphological behavior of the two adjectives. In this section, we just overview the empirical data, which indicate that adjectives behave like verbs, and nominal adjectives behave like nouns in many respects.⁶ The actual analysis of the two types of adjectives will be postponed until section 3.

⁵ Within this paper we assume that definitions from the semantic point of view alone are not sufficient to explain the different syntactic and morphological phenomena of these two 'adjectives'.

⁶ Many of the empirical facts introduced in Section 2, such as (10) through (15), are pointed out in Miyagawa (1987). Our analysis differs from Miyagawa's (1987) as shown in Section 3.

First, adjectives, like verbs, can be predicates without being followed by copulas predicatively and attributively. For example:

(6)

(i) Adj.(predicative):

- a. OK hana ga utsukushi-i
(flower NOM beautiful)
'the flower is beautiful'
- b. * hana ga utsukushi-i da
(flower NOM beautiful COPULA)
'the flower is beautiful'

(ii) Adj. (attributive):

- a. OK utsukushi-i hana
(beautiful flower)
'beautiful flower'
- b. * utsukushi-i na hana
(beautiful COPULA flower)
'beautiful flower'

(iii) Verbs:

- a. OK John ga hashiru.
(John NOM run)
'John runs'
- b. * John ga hashiru da.
(John NOM run COPULA)
'John runs'

Nominal adjectives, on the other hand, are adjectival in meaning, but are followed by the copula in both predicate and prenominal positions, as shown in (7ia) and (7iia). The copula (that follows the nominal adjective) conjugates. When the nominal adjective attributively modifies the noun, the adnominal form of the copula *-na* is attached to the nominal adjective; when it is predicated, then the sentence-ending form of the copula *-da* is attached to it. In the latter respect, nominal adjectives behave like nouns. Nouns also appear with *da* as shown in (7ib). It should be noted, however, that nominal adjectives and concrete nouns behave differently when they are attributive prenominal modifiers: nominal adjectives are followed by *na*; while nouns are followed by *no*, as shown in (7ii).

(7)

(i)

a. N. Adj. (predicative):

- OK Kono hana ga kirei -da
(This flower NOM beautiful COPULA)
'This flower is beautiful'

- b. Noun : OK Kore ga hana -da.
(This NOM flower COPULA)
'This is a flower'

(ii)

a. N.Adj. (attributive):

OK	kirei	*(na)	hana
	(beautiful	*(COPULA)	flower)
	'beautiful flower'		

b. N:

*	koutetsu	da	/na	onna
	(steel	COPULA		woman)
OK	koutetsu	no	onna	
	(steel	Gen	woman)	
	'a woman who is strong (in mind) like steel'			

Both adjectives and verbs conjugate, but adjectival nouns and nouns do not. Adjectives end with /-i/, while verbs end with /-ru/. The conjugations of verbs and adjectives are shown in (8). In this paper, although in some cases there are not semantic distinctions between adjectives and verbs, we assume that the lexical items whose sentence-ending form ends with /-i/ are adjective; likewise, the lexical items whose sentence-ending form ends with /-ru/ are verbs.

(8) a. Adj: kawaik-i (cute) > kawai-i

kawai-i	(present)
kawaik-at-ta	(past)
kawaik-u-nai	(negative)
kawaik-i > kawai-i	(prenominal/sentence-ending)
kawaik-e-reba	(conditional)

b. V: tabe-ru (eat)

tabe-ru	(present)
tabe-ta	(past)
tabe-nai	(negative)
tabe-ru-toki	(prenominal)
tabe-ru	(sentence-ending)
tabe-re-ba	(conditional)
tabe-ro	(imperative)

It is important to note that past tense forms of both verbs and adjectives are formed by suffixation of *-ta*, as in (9).

(9) (i) Adj.: kawaik-i (cute) > kawai-i

kawaik-at-ta
(cute PAST)

(ii) V: tabe-ru (run)

tabe-ru > tabe-ta
(eat PAST)

By contrast, the past tense form of nominal adjectives and nouns is formed by suffixation of *-ta* to the copula which follows them in the sentence final position. Interestingly, the past tense form of the attributive form of the copula, (or prenominal copula), *-na*, is not **na-t-ta*, but *da-t-ta*. Thus, it morphologically merges with the sentence-ending form of the copula *da* in past tense.

- (10) (i) N. Adj. (predicative):
- a. Mary ga kirei da
(Mary NOM pretty COP-nonpast)
 - b. Mary ga kirei de at-ta
(Mary NOM pretty COP-past)
 - c. Mary ga kirei dat-ta
(Mary NOM pretty COP-past)
- (ii) N. Adj. (attributive):
- a. Kirei na hana
(pretty COP flower)
 - b. kirei de at-ta hana
(pretty COP-past flower)
 - c. kirei dat-ta/*nat-ta hana
(pretty COP-past flower)

Next, as Miyagawa (1987: 44) points out, the conditional *(ke)-reba* attaches to adjectives and verbs; but not to nominal adjectives and nouns.

- (11) a. Adj.: OK sabishi-keraba
(lonely if)
'if (you are) lonely'
- OK Sabishi-kereba, kaette kinasai.
(lonely if back come)
'if (you are) lonely, come back'
- b. N.Adj.: * Kirei -(ke)reba
(beautiful if)
'if it is beautiful'
- * Kirei - kereba, souji shinai
(tidy if clean up do not)
'If it is tidy, then I do not clean up'
- c. V : OK tabe - reba
(eat if)
'if (you) eat'
- OK tabe- reba, ookiku naru
(eat if taller become)
'if (you) eat, then (you) become taller'
- d. N : * hontou - reba
(truth if)
'if (it is) truth'
- * hontou - reba, watashi wa ureshii
(truth if I TOP happy)
(If (it is) truth, I am happy)

Japanese has another conditional morpheme *naraba*, which, interestingly enough, does not attach to adjectives and verbs; but rather attaches to nominal adjectives and

nouns. The examples in (11) and (12) show that *(ke)reba* and *naraba* are in complementary distribution.⁷

- (12) a. Adj.: * Sabishi - naraba
 (lonely if)
 * Sabishi - naraba, kaette kinasai.
 (loney if back come)
- b. N.Adj.: OK Kirei - naraba
 (tidy if)
 OK Kirei - naraba, souji shinai
 (tidy if clean up do not)
- c. V : * tabe - naraba
 (eat if)
 * tabe - naraba ookiku naru
 (eat if taller become)
- d. N : OK hontou - naraba
 (truth if)
 OK hontou - naraba, watashi wa ureshii
 (truth if I TOP happy)

Adjectives and verbs do not take the dependent morpheme *-mitai* (= *seems*), but nominal adjectives and nouns do.⁸

- (13) a. Adj.: * utsukushi -mitai
(beautiful seems)
- b. N.Adj.: OK shizuka -mitai
(quiet seems)
'seems quiet'
- c. V : * Kare- wa sushi-wo tabe-mitai.
(He TOP sushi ACC eat seems)
- d. N : OK Kore -wa hana -mitai.
(This TOP flower seems)
'This looks like a flower'

⁷ It should be noted here that if the adjective takes *-i* after the stem, then, *-naraba* attaches to it. That is, *-naraba* attaches to the whole word. Thus, (i) is fine.

(i) sabishi-i naraba
(lonely if)
'if lonely'

This is also the case for verbs.

(ii) ku-ru naraba
(come if)
'if come'

I do not have any account for these data.

8 Here, it should also be noted that if the stem of the adjectives is tensed, being followed by *-i*, then, *-mitai* can be taken. On the other hand, if the nominal adjective is followed by a copula, either prenominal copula or sentence ending copula, *-mitai* cannot be taken. Miyagawa (1987: 43-4) points out that *-mitai* attaches to what he calls adjectival noun and noun.

Up to this point, it looks as though adjectives and verbs behave in the same way; and nominal adjectives and nouns behave in the same way. The first two conjugate and take the conditional morpheme *reba*, while the latter two are followed by copula as well as morphemes such as *naraba* and *mitai*. Moreover, several nominal adjectives can be used as nouns as well. (E.g., *kenkoo* (*health*)). These facts might lead us to state that adjectives are verbal; and nominal adjectives are nominal. However, the matter is not so simple. Miyagawa (1983) shows that the dependent morpheme *soo*, meaning *appear*, attaches to verbs, adjectives and nominal adjectives.

- (14) a. Adj. : OK Kore wa oishi - soo da
 (This TOP delicious appear COPULA)
 'This appears to be delicious'
- b. N.Adj. : OK/? Koko wa shizuka - soo da.
 (Here TOP quiet appear COPULA)
- c. V. : OK Kare- wa tabe - soo da.
 (He TOP eat appear COPULA)
 'He appears to eat much'
- d. N. : * Kore-wa hana - soo da.
 (This TOP flower appear COPULA)

It should be noted also that incidentally, there is another homophonous morpheme *soo* meaning *it is said*. This morpheme does not attach to the stems of verbs, adjectives and nominal adjectives, but attaches to the full forms of verbs and adjectives and to nominal adjectives or nouns followed by copula.

- (15) a. Adj. : * oishi - soo
 (delicious it is said)
 cf. (OK Oishi-i -soo)
 (delicious it is said)
- b. N.Adj. : */?? Shizuka - soo
 (quiet it is said)
 cf. (OK Shizuka-da soo)
 (quiet-COPULA it is said)
- c. V : * Kare- wa tabe-soo da.
 (He TOP eat it is said COPULA)
 cf. (OK Kare- wa tabe-ru soo da)
 (He TOP eat it is said COPULA)
- d. N : * Kore -wa hana -soo da.
 (This TOP flower it is said COPULA)
 cf. (Kore-wa hana -da soo da.)
 (This TOP flower COPULA it is said COPULA)

Summarizing the facts we saw so far in (8)-(13), adjectives appear to behave like verbs, whereas nominal adjectives bear properties in common with nouns (cf. (8)-(13)). But as shown in (14), verbs, adjectives, and nominal adjectives form a natural class. In the following sections, we examine the syntactic and lexical status of the two adjectives in detail: Section 3 deals with adjectives; Section 4, adjectival verbs.

3. Japanese Adjectives

This section explores the lexical and syntactic properties of Japanese adjectives. I will distinguish the adjectival stem from the full form of the adjective as illustrated in (16). The full sentence-ending and prenominal form of the adjective (16) has the structure given in (16ii). Example (16i) illustrates the stem of the adjective.

- (16) utsukushi -i
 (i) [STEM_{utsukushi}] (ii) [Adj [STEM_{utsukushi}] -i]

In the previous section, we saw that adjectives share certain characteristics with verbs. Some traditional Japanese linguists did not even regard 'adjective' and 'verb' as different categories, but assumed that both formed a single category. For example, Matsushita (1930) is one linguist who assumed that the category 'verb' includes both what we now call verbs and adjectives.

Miyagawa (1987) proposes that Japanese adjectives (in my terms the stem of Japanese adjectives) is associated with the lone feature of [+V], being neutral as to [+/-N]. His proposal is based on the following observation: As (14a-d) show, adjectives in Japanese seem to share properties with verbs and nominal adjectives, but there is no observed property exclusively shared by adjectives and nouns (Miyagawa, 1987: 45). However, Miyagawa (1987) does not provide actual empirical evidence in support of the claim that the feature [+/-N] is neutralized. What consequences such a singular specification for the system of the syntactic features would have is not explored in his paper, either.

The empirical data in the preceding section and those that will be presented in this section indicate a syntactic categorial similarity between adjectives and verbs. Adjectives in Japanese appear to be verbal, and not nominal. In particular, it is observed in this section that adjectives in Japanese share specific properties with stative verbs, with respect to abstract Case assignment. However, this fact should not lead us to the hasty conclusion that the adjectives are associated with the lone feature of [+V], being neutral as to [+/-N]. The syntactic feature of verbs is considered to be characterized as [-N, +V] (Chomsky, 1981). Thus, there are four possible feature specifications for adjectives to capture the fact that adjectives and verbs form a natural class. Japanese adjectives could be characterized as [+V, -N], like verbs; or as [+N, +V], like English adjectives; or by the lone feature [+V]; or [-N]. I will adopt as a starting point Miyagawa's (1987) hypothesis that the Japanese adjectives are verbal, and are associated with the lone feature [+V], being neutral as to [+/-N]. The following will be discussed to substantiate this hypothesis: (i) evidence showing why adjectives are associated with the feature [+V], (ii) evidence that adjectives are not associated with the feature [-N], and (iii) evidence that adjectives are not associated with the feature [+N]. In this section, we will briefly discuss the similarity and differences between adjectives and verbs, and provide support for Miyagawa's hypothesis that the feature specification of Japanese adjectives is [+V]. At the same time, we modify his hypothesis, drawing a clear distinction between adjectives and their stems.

There are several syntactic commonalities between adjectives and verbs. First, as we saw in (6), neither category is followed by a copula in the predicative or in the prenominal positions. Second, morphologically, both of them conjugate according to tense, mood and subordinating types, although neither of them shows number, person and gender agreement. Kuno (1978) provides the following paradigm of the conjugation system of Japanese verbs and adjectives.

(17)	VERB	ADJECTIVE
	'eat'	'be young'
nonpast	tabe-ru	waka-i
Past	tabe-ta	wakak-at-ta
suppositional/ Intentional	tebe-yoo	wakak-ar-oo
Imperative	tabe-ro	---
subjunctive	tabe-reba	wakak-er-eba
gerundive	tabe-Ø	wakak-u
continuative	tabe-te	wakak-u-te

Third, both verbs and adjectives show agreement with respect to the levels of honorification and politeness. A speaker's respect for the referent of the subject is typically expressed by "prefixing the gerundive form of a verb with *o* (honorific suffix) and adding *ni nar(-u)* (meaning *become being*) to the right of the form." (Kuno, 1987: 68) As for adjectives, the honorific expression is formed by prefixing the adjectival stem with *o*.

- (18) a. Tenno ga hon wo yon-da.
Emperor NOM book ACC read-Past
'Emperor read the book'
- b. Tenno ga hon wo o-yom-i ni nat-ta
Emperor NOM book ACC read Past
'Emperor read the book' (Respect for Emperor)
- (19) a. Tenno ga waka-i.
Emperor NOM young
'Emperor is young'
- b. Tenno ga o-waka-i
Emperor NOM young
'Emperor is young' (Respect for Emperor)

The copula attaches to nouns, but never to verbs or adjectives. Furthermore, those categories that take the copula never conjugate. At this point, it is conjectured that the Japanese copula (e.g., *da*) is attached only to a category that is associated with the feature [-V]⁹ and that a category that conjugates is associated with the feature [+V]. We propose then that verbs and adjectives are associated with a verbal feature [+V], and that it is this verbal feature that allows them to conjugate with respect to tense, mood, and subordinating types. Since categories that take the copula, e.g., noun, never conjugate, we propose in addition that the copula is attached only to categories with the feature [-V].¹⁰ This conjecture has the consequence of correctly predicting the behavior of Postpositional Phrases (PP), which, we assume, are associated with the features [-N, -V]. PPs in Japanese are followed by a copula as the example (20) shows; and they do not conjugate.

⁹ To state more specifically, the copula attaches to the maximal projection of [-V].

¹⁰ A Noun never conjugates, but the copula that is attached to a noun does (see (42)). We hypothesize then that the copula has the feature [+V].

- (20) Hartford-shi wa koko kara da.
 (Hartford-city TOP here from COP)
 'Hartford starts from here'

Thus, verbs and adjectives are seen to share the syntactic feature [+V] because they cannot be followed by the copula, while nouns and postpositions share [-V] and are followed by the copula. The fact that verbs and adjectives both conjugate, but nouns and postpositions never do, further supports the conjecture that the former two categories are associated with the feature [+V].

An additional common property between adjectives and verbs is uncovered by considering the Case assigned to their objects. Some adjectives are transitive.¹¹ That is, some adjectives take an object as well as a subject, as shown in the example (21); while others do not take an object, as shown in (22).

- (21) a. Mary ga natsukashi-i.
 Mary NOM long for
 '(I) miss Mary'
- b. ??Mary ga haha wo natsukashi-i
 Mary NOM mother ACC long for
 'Mary misses mother'
- c. Mary ga haha ga natsukashi-i
 Mary NOM mother NOM long for
 'Mary misses mother'
- (22) a. Mary ga utsukushi-i.
 Mary NOM beautiful
 'Mary is beautiful'
- b. *Mary ga John wo utsukushi-i.
 Mary NOM John ACC beautiful
- c. *Mary ga John ga utsukushi-i.
 Mary NOM John NOM beautiful

This phenomenon could be restated in the following way: Adjectives share a characteristic with verbs in that one type of adjective takes only one argument; the other takes two arguments. Here, the former type of adjective is termed intransitive adjectives,¹² and the latter, transitive adjectives, as in the case of verbs.

Transitive stative verbs and what we call transitive adjectives behave in the same way in that their object has to be marked with the nominative Case particle *ga*, rather than with the accusative case particle *wo*, as shown in (21).¹³ The nominative Case particle appears in the position of "object" of the adjective. The same is true of stative verbs. For example, verbs such as *dekiru* (meaning *can do*) and *wakaru* (meaning *understand*) take nominative objects as shown below.

11 By definition, the verbal form that ends with /-i/ is considered to be categorized as 'adjectives' in Japanese. There are, however, some cases where the English gloss corresponding to what are called 'adjectives' in Japanese cannot be categorized as adjectives in English, as in (21a).

12 The transitive adjectives are, for example, *koishi-i* (*long for*), *hoshi-i* (*want*), and *modokashi-i* (*frustrated*).

13 Some native speakers find sentences like (21b) and (23b) degraded, though not completely ungrammatical. However, for everyone the (a) and (c) versions are much improved.

- (23) a. John-ga suiei -ga dekiru
 NOM do swimming NOM can
 'John can swim'
- b. */?John-ga suiei -wo dekiru
 NOM do swimming ACC can
 'John can swim'
- c. John-ga eigo -ga wakaru
 NOM English NOM understand
 'John understands English'
- d. */?John-ga eigo -wo wakaru
 NOM English ACC understand
 'John understands English'

Thus, adjectives and stative verbs seem to assign Case in the same way. This provides another piece of supporting evidence for the similarity between the adjectives and verbs.

It is argued in Saito (1982) that verbs assign accusative Case, and thus, *wo* is a realization of abstract accusative Case, as in (24i). On the other hand, according to Saito (1982), Nominative Case in Japanese is a default Case, and is not assigned by any Case assigner. According to his analysis, the nominative Case marker *ga* is attached to any NP that is directly dominated by S, i.e., [NP, S]. This allows the generation of multiple subject sentences such as (24ii).

- (24) (i) [_SYamada ga [_{VP}sono mondai wo kaiketsushita]]
 (Yamada NOM that problem ACC solve PAST)
 'Yamada solved that problem'
- (ii) [_SYama ga [_{ski} ga [_{VP}kirei desu]]]
 (mountain NOM tree NOM pretty)
 'Speaking about the mountain, the trees are pretty'

Saito's analysis can capture a generalization, but a problem arose in examples such as (25).

- (25) (i) [_SYamada ga [_{VP}eigo ga wakaru]]
 Yamada NOM English NOM understand
 'Yamada understand English'

In this case, the nominative Case marker *ga* is attached to an NP that is not directly dominated by S, but by VP.

Fukui (1986) argues that there is no INFL in Japanese, and thus, that the structure of (25i) is actually as in (26iii). He further notes that given his conclusion, the analysis of nominative Case given by Saito (1982) could be revised as follows: the Nominative Case marker *ga* is attached to any NP directly dominated by V', i.e., [NP, V'] if abstract Case is not assigned to the NP.¹⁴ This rule correctly accounts for the Case markers in (24) - (25). The structures of those sentences are as in (26), according to Fukui (1986).

¹⁴ According to Fukui, the maximal projection of N is N', not N''.

- (26) (i) [_VYamada ga [_Vsono mondai wo kaiketsu shita]]
 (Yamada NOM that problem ACC solve PAST)
 'Yamada solved that problem'
 (ii) [_VYama ga [_Vki ga kirei desu]]
 (mountain NOM tree NOM pretty)
 'Speaking about the mountain, the trees are pretty.'
 (iii) [_VYamada ga [_Veigo ga wakaru]]
 (Yamada NOM English NOM understand)
 'Yamada can understand English'

In (26i), the verb assigns abstract objective Case to the object NP; hence, *sono mondai* appears with *wo*. All other NPs in (26i- iii) are not assigned any abstract Case. Further, they are all directly dominated by V'. Hence, Fukui's nominative rule attaches *ga* to those NPs.

The example (26iii) contains a stative verb *wakaru*, meaning *understand*. Note that there are similar examples with adjectives which take nominative objects.

- (27) [_AYamada ga [_Amizu ga hoshii]]
 (Yamada NOM water NOM want)
 'Yamada wants water'

Pursuing Fukui's analysis, Mamoru Saito (p.c.) claimed that examples (26iii) and (27) show that the nominative case marker *ga* is attached to an NP directly dominated by V' and A'. Note that *ga* is not attached to [NP, N'], as (28i) and (28ii) show; nor to [NP, P'], as in (28iii) and (28iv). In the former case, the genitive Case marker *no* appears; in the latter case, no morphological case appears.

- (28) (i) *[_N_toshi ga [_N_hakai]]
 (city NOM destruction)
 (ii) [_N_toshi no [_N_hakai]]
 (city GEN destruction)
 'destruction of city'
 (iii) *[_P_koko ga [_P_kara]]
 (here NOM from)
 (iv) [_P_koko [_P_kara]]
 (here from)

Thus, *ga* is attached only to [NP, V'] and [NP, A']. It seems to be fair to conjecture hereupon that V' and A' form a natural class. If A is associated with the feature [+V], then, Saito (p.c.) claimed that we can restate Fukui's generalization as follows: *ga* is attached to the NP which is directly dominated by the maximal projection of [+V]: [NP, [+V']]. This explains all of the examples above elegantly. Thus, the distribution of the nominative case marker *ga* provides us with strong evidence that Japanese adjectives have the feature [+V].¹⁵

Another piece of evidence that the adjectival verbs are associated with the feature [+V] can be found when we examine the distribution of the genitive Case marker *no*. The Japanese genitive Case marker is analyzed in detail in Kitagawa and Ross (1982), who provide a now standard account for its distribution. They assume a universal rule of modifier insertion as in (29).

¹⁵ In the following section, we will apply the same argument to adjectival verbs in Japanese, and argue that they also have the feature [+V].

(29) MOD insertion Rule

[_{NP} X NP] --> [_{NP} X MOD NP]

According to this rule, when some X modifies an NP which is the head of the NP containing X, MOD is inserted. This rule explains the behavior of Chinese *de* and Japanese *no*. In Mandarin Chinese, MOD *de* appears between a prenominal modifier and the head in every case. In Japanese, according to Kitagawa and Ross (1982), MOD *no* appears only for N modification. On the basis of this observation, Kitagawa and Ross (1982) propose a parameterized rule for prenominal modification: there is a language specific rule in Japanese that deletes MOD (or *no*) under the following conditions.

(30) NO-deletion

[_{NP} X no NP] --> [_{NP} X NP]

where: (a) NP ≠ e (i.e., the head of NP is occupied by a phonologically full lexical item), and
(b) X = [...tense] (i.e., X is tensed [+V])

Kitagawa and Ross's (1982) NO-deletion rule says that *no* is deleted if the prenominal modifier is [+tense]. Here, as also indicated in their rule, the specification [+tense] can be replaced by the feature [+V]. As we saw above, only [+V] elements conjugate for tense, mood and subordinating types. Thus, we assume that *no* in Japanese remains when the prenominal modifier is [-V], and that it is deleted when it is [+V]. Now, independently of this revision, Kitagawa and Ross's rule accounts for the following paradigm, indicating the distribution of *no*.

- (31) a. [_{NP}[_{NP}Yamada]no hon]
 Yamada GEN book
 'Yamada's book'
 b. [_{NP}[_{PP}koiko kara] no michi]
 here from GEN road
 'A road from here'
 c. [_{NP}[_{AP}utukushii] (*no) hito]
 pretty GEN (*GEN) person
 'pretty person'
 d. [_{NP}[_S Yamada-ga kaita] (*no) hon]
 Yamada NOM write (*GEN) book
 'a book that Yamada wrote'

As the examples shown above indicate, the genitive Case marker *no* cannot be inserted between an adjective and a noun. Adopting Kitagawa and Ross's analysis of *no*, the following analysis could be provided. That is, *no* is first automatically inserted between the adjective and the head noun by the MOD insertion rule, but is later deleted due to the NO-deletion rule. Hence, the fact that *no* cannot appear in (31c) provides another piece of evidence that the adjectives are associated with the feature [+V].

Mamoru Saito (UConn class lecture) pointed out that Kitagawa and Ross's analysis lacks some generality in the respect that it is not clear what sort of natural class is formed by S and AP, which are the contexts in which *no* is deleted. According to Saito, if Japanese does not have functional categories, and lexical categories do not close off (that is, they do not have SPEC) as Fukui (1986) claims, then S will be reanalyzed as V'; AP, as A'. This reanalysis has two consequences. The contexts in which *no* is deleted share not only the syntactic feature [+V], but also the level of projections, namely, a single-bar projection. Thus, condition (b) in (30) can be stated simply as X = [+V].

Further, Kitagawa and Ross's analysis implies that the stem of adjectives is not associated with the feature [+V], providing a counterexample to Miyagawa's (1987) analysis. As the examples below indicate, the genitive Case marker *no* can be inserted between the stem of an adjective and the head noun.¹⁶

- (32) a. *utsukushi no kimi*
 beauty of person
 'beautiful person'
 b. *naga no owakare*
 long (noun) of good-bye
 'staying apart for a long period'

Thus, we have seen that the full form of adjectives, or what we call adjectives in this paper, are associated with [+V]. We argued also that according to Kitagawa and Ross's analysis, the stem of the adjective turns out not to be associated with [+V].

Examining the empirical data closely, however, certain properties are revealed which are not shared by adjectives and verbs. For example, adjectives do not have an imperative form, while verbs do (see (17)). Adjectives can be understood as imperative only in the case when the imperative form of the existential verb *aru* (meaning *be*) follows the preverbal form of adjectives, as in examples such as *utsukushiku-are*, meaning *be pretty*. This is the case in English, also. Only verbs, not adjectives, can be the main verbal element in an imperative sentence, as shown in (33).¹⁷

- (33) a. Be awake!
 b. *Awake!

Second, the gerundive form (or preverbal form) of adjectives, can be used as adverbs; but verbs are not used as adverbs.¹⁸ For example:

- (34) a. Adj.: *John ga utukushik-u hashiru.*
 NOM neatly run
 'John runs neatly'
 b. V. : **John ga hashiri tobu*
 NOM run fly

Third, let us go back to the discussion of the absence of the copula in predicate verbs and adjectives. Japanese verbals can be divided into three categories: (i) verbs, (ii) adjectives and (iii) copulas (Kuno, 1973: 64). As we saw above, verbs and adjectives share characteristics in that (i) they conjugate with respect to tense and mood, though (ii) they do not show number, person and gender agreement, and (iii) they can form a predicate without being followed by copulas as we saw in (7). There is, however, a difference between verbs and adjectives in the use of the copula in polite forms, as is shown in (35) and (36).

¹⁶ The independence of adjective stems as free morphemes is supported from the historical development of adjectives; the stems of adjectives were at first nouns. Even in present-day Japanese, this usage remains in examples such as (32).

¹⁷ Howard Lasnik (p.c.) pointed out to me that this contrast carries over to non-imperatives as well.

¹⁸ In Japanese, the first verb with preverbal form in serial verbs modifies the second verb, and neither verb alone functions as a head.

(i) V. : *John ga hashiri mawaru*
 NOM run round
 'John runs around'

- (35) a. Tenno ga hon wo yomu.
 Tenno NOM book ACC read
 'Tenno reads a book'
- b. Tenno ga hon wo yomi mas-u (Polite to the hearer)
 Tenno NOM book ACC read
 'Tenno reads a book'
- c. *Tenno ga hon wo yomu des-u (Polite to the hearer)
 Tenno NOM book ACC read Polite
 'Tenno reads a book'
- (36) a. Tenno ga wakai.
 Tenno NOM young
 'Tenno is young'
- b. *Tenno ga wakai mas-u. (Polite to the hearer)
 Tenno NOM young
 'Tenno is young'
- c. ?Tenno ga wakai des-u. (Polite to the hearer)
 Tenno NOM young Polite
 'Tenno is young'

For verbs, respect for the hearer is expressed by using the polite form which is formed by adding *mas-u* to the right of the gerundive form of the verb. Neither the suppletive form *des-u* for the copula *da*, nor the copula *da* itself is attached to a verb. For adjectives, however, respect for the hearer is expressed by using the suppletive form *des-u* for the copula *da*, and by adding *des-u* to the right of the nonpast or past form of adjectives. The copula *da* itself cannot follow the predicate adjective. It is worth noting that the polite form of adjectives in (36c) was "officially" accepted in the prescriptive grammar of Japanese in the Japanese grammar conference in 1952 because of the recent spread of this form. The form was not accepted by native speakers as well-formed in the earlier stages of Japanese. Thus, adjectives and verbs have different forms in present-day Japanese, and historically, only verbs had polite forms.

The empirical data given in the preceding and present sections support the claim of syntactic categorial similarity, but not necessarily of categorial identity, between adjectives and verbs. To capture the similarities between verbs and adjectives, I proposed that they share the feature [+V]. I also showed that verbs and adjectives have different properties as well. In the remainder of this section, I will discuss some reasons not to include [+N] or [-N] in the feature matrix for adjectives.

The examination of whether or not adjectives in Japanese are associated with the feature [-N] is important, because it ties in with the examination of the differences between adjectives and verbs. Case theory, which deals with (abstract) Case assignment to constituents, gives a key for finding out the feature specification of adjectives. Chomsky (1981) proposes that structural Case-assigners are generally [-N]. As we observed in (22) and (23), in Japanese, adjectives and stative verbs are similar with respect to the case that their complements take. The structural Case assignment of adjectives (if there is any) in Japanese is observed to be similar to that of stative verbs.

As we have already seen, adjectives are subcategorized in terms of their transitivity. For transitive adjectives, the subject and the object both appear with nominative Case as is also the case for so-called stative verbs. The serial verbs incorporating *-reru* (meaning *be able to*) can also be accompanied by two arguments with nominative Case. The verbs incorporating *-reru* can also assign accusative Case (as in (37b)) instead of nominative Case (as in (37a)) to the object NP. It should be mentioned that if *-reru* is

not incorporated in the serial verb, then only accusative case should be given to the object by the verb *hanasu*.¹⁹

- (37) a. John-ga eigo -ga hanas-eru
 NOM English NOM speak-able
 'John can speak English'
- b. John-ga eigo -wo hanas-eru
 NOM English ACC speak-able
 'John can speak English'
- c. *John-ga eigo -ga hanasu
 NOM English NOM speak
 'John speaks English'
- d. John-ga eigo -wo hanasu
 NOM English ACC speak
 'John speaks English'

There is a crucial difference between transitive verbs and transitive adjectives. In the case of transitive adjectives, the object has to be accompanied by the nominative Case particle *ga*, rather than by an accusative case particle *wo*, as is shown in (21). The nominative Case particle appears in the "object" position of the adjective. As for action verbs, (38) shows that the subject NP is accompanied by nominative Case; and the object NP is assigned accusative Case. The action verbs never take nominative objects.

- (38) a. ?ushi ga taberu
 cow NOM eat
 'a cow eats'
- b. OK ushi ga kusa wo taberu
 cow NOM grass ACC eat
 'A cow eats grass'
- c. *ushi ga kusa ga taberu
 ushi NOM grass NOM eat
 *'a cow eats grass'

This empirical fact leads us to conjecture that the transitive adjective lacks an ability to assign an accusative case, unlike the normal transitive verbs. This leads to the further conjecture that the adjectives do not structurally assign Case, because they are not associated with the feature [-N]. In this respect, Japanese adjectives are different from action verbs.

Finally, we need to examine why the feature [+N] should not, or need not, be included in the feature specification of adjectives. More specifically, we focus on the fact that the objects of nouns and adjectives are accompanied by different Case markers: in the former case, *no*; in the latter, *ga*.

¹⁹ This could be related to Chomsky and Lasnik (1977)'s argument claiming that when a verb is passivised, it is like a neutralized verb-adjective. Under their proposal, a passivised verb is simply [+V], with no value of N. Thus, a passivized verb is not a Case assigner. If this is the case for serial verbs, shown above, then they are stipulated to have the feature [+V]. This remains as a future problem.

- (39) a. toshi no hakai
 (city of destruction)
 'destruction of city'
 b. Mary wa kodomo ga kawaii
 (TOP child NOM cherish/cute)
 'Mary cherishes (her) child'

Chomsky (1986) regards nouns and adjectives in English as Inherent Case-assigners. Inherent Case is assigned by α to NP only if α θ -marks NP. *Of* is a semantically empty element that appears between alpha and the NP as a realization of the Case. Since both adjectives and nouns can assign inherent Case that is realized as *of*, they form a natural class, sharing the feature [+N]. In Japanese, however, this does not seem to be the case. That is, as we saw in the examples above, the objects of nouns and of adjectives are accompanied by different case particles, *no* and *ga* respectively, and they do not seem to share the common property that English adjectives and nouns do. Thus, even if the feature [+N] is assumed for *of*-insertion in English, there does not seem to be any reason to suppose that Japanese adjectives have this feature.²⁰

In this section, I explored the lexical and syntactic properties of Japanese adjectives. Different from Miyagawa (1987), I argued that Japanese adjectives, but not the stem of the adjective, are associated with the lone feature of [+V], with the feature of [+/-N] being neutralized, by providing some supporting evidence for this claim.

A further cross-linguistic argument can be given in favor of the neutralization of the feature [+/-N]. For example, feature neutralization is proposed by van Riemsdijk (1983) for German adjectives. Van Riemsdijk provides another example of the neutralization phenomenon (reported in Emonds, 1985: 164), citing the example of *near*, as a neutralized category between A and P. Chomsky and Lasnik (1977) propose that the morphological rule forming the past participle of a passive sentence involves feature neutralization, as pointed out in fn. 18. They state that the morphological rule forming "*believed* from *en* + *believe* assigns the category Adjective to the derived form (the category, [+V], deleting [-N] from the verbal form [+V, -N])" (p.475). A theory-internal study of the consequences this singular specification of features bears on the system of syntactic features should be pursued.

4. Nominal Adjectives and Adjectival Verbs

In addition to adjectives, Japanese has a subcategory of modifiers called adjectival nouns (Martin, 1975). Adjectival nouns are adjectival in meaning; they modify nouns attributively and also function as predicates, as adjectives do. However, adjectival nouns and adjectives have been observed to behave differently in some respects. For instance, adjectives conjugate, and they are not followed by the so-called copula. On the other hand, adjectival nouns do not conjugate, and are followed by the copula, as we have seen. The copula which is attached to the nominal adjectives (see (40)) conjugates with respect to tense, mood and conditional types. In fact, what functions as a prenominal modifier or as a predicate is not the nominal adjective itself, but the nominal adjective

20 Here arises a problem. How should we treat the stative verbs that behave like adjectives? We assume that verbs are generally associated with the features [+V, -N], and there are two kinds of verbs: action and stative. Somehow, the capability of case assignment is suppressed in the case of stative verbs, as an exceptional group of verbs. On the other hand, in the case of adjectives, all adjectives behave like stative verbs, not being able to give accusative Case to the object. Therefore, as a category feature specification, generally, adjectives are considered not to be associated with the feature [-N] in the present paper.

followed by the copula. Adopting a term of traditional Japanese grammar here, I will call the form that consists of 'nominal adjective plus the copula' the 'adjectival verb'. The adjectival verb meaning *pretty*, is shown in (40).

(40)	(i)	(ii)
a. N. Adj. (attributive)	[N.Adjkirei]	[Adj.V[N.Adjkirei] -na]
b. N. Adj. (predicative)	[N.Adjkirei]	[Adj.V[N.Adjkirei] -da]
c. N. Adj. (original form of predicative)	[N.Adjkirei]	[Adj.V[N.Adjkirei] -de aru]

This section explores the syntactic and morphological status of nominal adjectives and adjectival verbs in Japanese.²¹ By examining the commonalities and differences between nouns and nominal adjectives, and also by pointing out the common properties between nominal adjectives and postpositional phrases, we argue that nominal adjectives and adjectival verbs have distinct properties, and hence, that nominal adjectives are like nouns. On the other hand, the adjectival verb which consists of a nominal adjective and a copula, functions more like a verbal. Through this study, I aim to specify the syntactic features of the two categories called nominal adjective and adjectival verb in Japanese.

Miyagawa (1987) proposes that English adjectives and Japanese nominal adjectives are associated with the same syntactic features, i.e., [+N, +V].²² In the first part of this section, I examine the properties of nominal adjectives. I propose that the features of the nominal adjective are specified as [+N, -V]. Further, I will argue that the nominal adjective is one class of noun, but that nominal adjectives are bound morphemes which cannot function as words. The adjectival verb, on the other hand, is proposed to be associated with the feature [+V], for the same reason that the adjective is. Further, I discuss some common properties and differences between the Japanese adjectival verbs and English adjectives. As shown in (40), the original form of the adjectival verb is *Kirei de aru*, (meaning *be pretty*) (see (40c)). Historically, by merging *de aru*, or the preverbal form of the copula *de* and an existential verb *aru*, the so called copula *da* was formed. A copula was attached to the nominal adjective, forming, thus, what is called the adjectival verb. The adjectival verb bears more verbal properties than the nominal adjective does.

As I mentioned in Section 1, nominal adjectives and adjectival verbs are the categories set up to fill in semantic gaps in the system of the adjectives about one thousand years ago, when many Chinese characters and words were borrowed into the Japanese language. Using the words borrowed from China as modifiers, with the aid of the attachment of a copula to some class of nouns that semantically characterize abstract properties of an object, adjectival, adverbial and predicative forms of adjectival verbs such as those in (42) were formed. Japanese copulas conjugate with respect to tense, mood and subordinating types as in (41). Accordingly, the adjectival verbs conjugate, as in (42). The prenominal form of the copula, when attached to an adjectival noun, is *na* as shown in (41) - (42).

21 In the generative literature, the term 'adjectival nouns' has been used ambiguously, sometimes to refer to adjectival verbs, and sometimes to refer to what we call nominal adjectives (See, for example, Miyagawa (1987)). This ambiguity has been the source of much confusion, as we will see directly.

22 Miyagawa (1987) does not give a clear cut distinction in analyzing the data on whether or not what he calls adjectival nouns includes the copula part or not.

(41)

'COPULA'

'be'

Nonpast	da
Past	dat-ta
Suppositional/ Intentional	dar-ro
Imperative	---
Subjunctive	nara
Continuative	---
Prenominal	na

(42)

'Adjectival Verb'

'be pretty'

Nonpast	kirei-da
Past	kirei dat-ta
Suppositional/ Intentional	kirei dar-ro
Imperative	---
Subjunctive	kirei nara
Continuative	---
Prenominal	kirei na

Before discussing adjectival verbs, let us examine the syntactic and lexical properties of nominal adjectives, or the stem of the adjectival verb.

As we saw in Section 1, nominal adjectives and nouns behave in a similar way syntactically. For instance, both the nominal adjectives and nouns are followed by the sentence ending copula *da*. Together with the copula, they form a predicate. The subject NPs of the predicates which include a nominal adjective and a usual noun are both accompanied by the nominative Case marker, shown in (43).

- (43) a. N.Adj.: Mary ga kirei da.
 NOM pretty COP
 'Mary is pretty'
 b. N : Mary ga sensei da.
 NOM teacher COP
 'Mary is a teacher'

The nominal adjective as well as the noun inside the predicate is not accompanied by any case particles, in both present and past tense forms.

- (44) a. *Mary ga kirei ga da.
 NOM pretty NOM COP
 b. *Mary ga sensei ga da.
 NOM teacher NOM COP

- (45) a. *Mary ga kirei ga da-t-ta
 NOM pretty NOM COP PAST
 b. *Mary ga sensei ga da-t-ta.
 NOM teacher NOM COP PAST

Like nouns, nominal adjectives can be used independently without being followed by a copula in the predicate of sentences in present tense.²³

- (46) a. Mary ga kirei
 NOM pretty
 'Mary is pretty'
 b. Mary ga sensei
 NOM teacher
 'Mary is a teacher'

Both nominal adjectives and nouns show the feature of copulative sentences in the same way in that precopular constituents cannot be scrambled. Compare (47) and (48).

- (47) a. Mary ga kirei da.
 NOM pretty COP
 'Mary is pretty'
 b. *Kirei Mary ga da.
 pretty NOM COP
 c. Mary ga sensei da.
 NOM teacher COP
 d. *Sensei Mary ga da.
 teacher NOM COP
- (48) a. Mary ga sushi wo taber-u.
 NOM sushi ACC eat
 'Mary eats sushi'
 b. Sushi wo Mary ga taber-u.
 sushi ACC NOM eat
 'Mary eats sushi'

The sentences in (47) are the copulative sentences. (48a-b) are sentences including a transitive verb which assigns accusative case. It should be noted that, basically, nothing can be inserted between the nominal adjective and the copula as in (49a), except in the case where another adjectival noun is embedded between the nominal adjective and the copula. This is also true in the relation between a noun and a copula as in (49b).

- (49) a. * Mary ga kirei mo da
 NOM pretty as well COP
 (context: Mary is clever, but, also,) '(she) is pretty as well'
 b. * Mary ga sensei mo da
 NOM teacher as well COP
 (context: Mary is a housewife, but, also,) '(she) is a teacher'

In other words, no elements can be inserted between the copula and the precopular constituents. Recall that *da* is the merged form of the preverbal form of the copula *de*

²³ These sentences sound very colloquial. The only possible interpretation for these sentences is in present tense.

and the existential verb *aru*. Interestingly, the examples in (49) become grammatical when *mo* is inserted between *de* and the existential verb *aru*, as shown in (50).

- (50) a. Mary ga kirei de mo aru.
 NOM pretty COPULA also existential verb
 (context: Mary is clever, but, also) 'Mary is pretty as well'
 b. Mary ga sensei de mo aru.
 NOM teacher COPULA also existential verb
 (context: Mary is a housewife, but, also) 'Mary is a teacher'

This suggests that the nominal adjective and the copula following it both function as bound morphemes, forming one adjective called the adjectival verb.

We saw earlier that nominal adjectives are like nouns in several respects. Examining the empirical data closely, however, we find that the matter is not so simple. There are several differences between nominal adjectives and nouns. For example, some element can sometimes be inserted between a noun and a copula; whereas it is rare that anything can be inserted between the nominal adjectives and a copula. The nominal adjective and the copula seem to require strict adjacency. In other words, a copula seems to be attached more strongly to nominal adjectives rather than to nouns. The copular element morphologically seems to be incorporated into the nominal adjective, forming one category of word, which is termed 'adjectival verb'. For example, observe the case in which the element *mitai* (seem), which conjugates as an adjectival noun is inserted between the noun and the copula.

- (51) a. Kore wa hana da.
 This TOP flower COP
 (This is a flower)
 b. Kore wa hana mitai da.
 This TOP flower seems like COP
 (This seems like a flower)

(51b), which contains the noun *hana*, is perfect. But when we replace *hana* by the nominal adjective *azayaka*, as in (52b), the example becomes marginal.

- (52) a. Kore wa azayaka da.
 This TOP gorgeous COP
 (This is gorgeous)
 b. ?? Kore wa azayaka mitai da.
 This TOP gorgeous seems COP
 (This seems gorgeous)

The nominal adjective, and the copulative element that attaches to the nominal adjective, both seem to function as bound morphemes, and only by getting together do they form a word. This leads to the conjecture that there are two kinds of nouns and copula: the bound noun (which is called the nominal adjective) and the free noun (which is the regular noun); the bound copula which attaches to the nominal adjective, and the free copula which attaches to the maximal projection of [-V].

Nominal adjectives and nouns exhibit an important distinction with respect to whether or not they can be a subject of a sentence. Nominal adjectives cannot appear with nominative Case; while nouns can, as shown by the following example.

- (53) a. *Seiketsu ga ii.
 (clean NOM good)
 'The beauty is good'
 b. Bitoku ga taisetsu da.
 (virtue NOM important COP)
 'The virtue is important'

In this respect, nominal adjectives which seem to be like (abstract) nouns with respect to their meaning, reveal a different syntactic characteristic from usual nouns. In Japanese, only maximal projections, for example, NP, but not N, can be accompanied by a Case particle *ga*. It is conjectured here that the nominal adjective cannot by itself be an NP that gets Case, because it is a bound morpheme whose features happen to be [+N, -V]. So, although it functions like an N in some respects, it cannot be projected to an argument NP, thus, the nominative Case particle cannot accompany it. This is one piece of empirical evidence supporting the hypothesis that the nominal adjective is a bound morpheme. Only when *-sa* (*-ness*) is affixed to a nominal adjective can the nominal adjective appear with nominative Case, as the examples (54) and (55) indicate.²⁴ The fact that a noun can be formed by the attachment of the nominal suffix *sa* to stem of the adjectives and that of adjectival verbs, but that the suffix *-sa* cannot be attached to adjectives and adjectival verbs themselves, e.g., **utsukushi-i-sa*, and **kawai-i-sa*, nor to nouns or verbs, suggests some common property between the stem of adjectives such as *utsukushi* in (54a) and that of nominal adjectives such as *shizuka* (54b). The common property between them is proposed to be, in this paper, that they are not free morphemes, but bound morphemes. In order for the bound noun which is associated with the features of nouns to function as a grammatical noun, *-sa* is attached. In other words, in Japanese, *-sa*, or a nominal suffix, is attached to a bound noun, which cannot function as a regular noun as it is, forming a free noun.

Lieber (1980) proposes that all morphemes, stems and affixes alike, have lexical entries which contain information about their category and about what sort of lexical item, if any, they must attach to, their semantic representation, argument structure, and so on. Within her framework, an affix is defined as a morpheme which subcategorizes other morphemes; the suffix *-ness* must attach to adjectives, like the prefix *un-*. Interestingly, empirical evidence in favor of Lieber's account is provided from Japanese, on the assumption that the stem of adjectives and nominal adjectives make a natural class; and Lieber's theory can be directly applied to Japanese morphology. The stem of Japanese adjectives and nominal adjectives (i.e., the stems of adjectival verbs) are followed by the suffix *-sa*, which corresponds to English *-ness* in function, and turns them to nouns. This interpretation predicts a proper consequence explaining the reason why *sa* never attaches to (the stems of) verbs, nouns, the full form of adjectives, and adjectival verbs. *Sa* attaches only to bound morphemes which have the feature [-V].

²⁴ Miyagawa (1987: 45) points out that *-sa* attaches to adjectives and what he calls adjectival nouns, turning both to nouns. Adjectival nouns, in this analysis, does not include the copula.

- (54) a. Adj.: utukushi -sa
 (beautiful -ness)
 beauty
 (cf. *utsukushi-i-sa)
 b. N.Adj.: shizuka-sa
 (quite -ness)
 quiteness
 (cf. *shizuka-na-sa)
 c. N.: *conpuutaa-sa
 (computer-ness)
 d. V.(Action verb):
 *tabe-sa
 (eat-ness)
 e. V.(Stative verb):
 *waka-sa
 (understand-ness)

After the suffixation, nominal adjectives and adjectives can be a subject, being accompanied by the nominative Case marker *ga*.

- (55) a. Adj.: utukushi -sa ga ii
 (beautiful-ness NOM good)
 'beauty is good'
 b. N.Adj.: shizuka -sa ga ii
 (quite -ness NOM good)
 'quiteness is good'
 c. N.: *conpuutaa-sa ga ii
 (computer -ness NOM good)
 d. V. (Action verb):
 *tabe-sa ga ii
 (eat -ness NOM good)
 e. V. (Stative verb):
 *waka -sa ga ii
 (understand-ness NOM good)

(54d-e) are bad because verb stems have the feature [+ V], and (54c) is impossible because the N is a free morpheme. Hence, the data in (54) provides us with another piece of evidence that nominal adjectives are bound morphemes.

This argument is also supported from the morphological analysis by Kageyama (1982) on word formation in Japanese. Kageyama (1982) argues that *-sa* is a category-changing (from Adjective/Nominal Adjective to Noun) suffix. He claims that *-sa* is the N-creating suffix and it is attached to stems rather than full-fledged words, and that this suffix has no effect on the accentuation of the whole derived word. That is, he proposes that *-sa* is a suffix belonging to the morpheme level, or in Allen's extended ordering level, it belongs to Level I (+affixation). Thus, Kageyama's morphological analysis also provides supportive evidence for our claim that nominal adjectives, and stems of adjectives are bound morphemes.

The fact that the nominal adjectives themselves do not conjugate seems to suggest that they are not associated with the feature [+ V] for the reasons we discussed in the previous section. Because nominal adjectives are followed by the copula, they seem to be associated with the feature [-V]. Those two pieces of evidence support the existence of the feature [-V] from two sides. Before we conclude that nominal adjectives are [-V], let us consider a phenomenon that has to do with *no* (*of*)-insertion. As we have

already shown in Section 3, the genitive Case marker *no* is inserted between regular nouns, as in (56a). However, between a nominal adjective and a regular noun, *no* cannot appear, but the prenominal copula *na* appears, as (56b) shows. However, exceptionally, either *no* or *na* appears as in such a case as (56c). This indicates that there are elements such as *kenkoo* (meaning *healthy*) that are ambiguous between noun and nominal adjective.²⁵ Apparently, these facts might lead us to conjecture that the nominal adjective is not associated with the feature [-V], because *no*-insertion is blocked.²⁶

- (56) a. N: shuukyou no hito
 (religion of man)
 'a man of religion'
 b. N.Adj.: shizuka *no/na kankyou
 (quiet of/COP circumstance)
 'the circumstance which is quiet'
 c. N.Adj.: (i) kenkou no hito
 (health of person)
 'A man who is characterized by being very healthy'
 (ii) kenkou na hito
 (health COP person)
 'a healthy person'

It should be noted, however, that we observed before that no element can be inserted between a nominal adjective and a copula. Further, we conjectured that a nominal adjective and the copula that attaches to it are both bound morphemes, and the connection between these two elements is strong enough to block any insertion. If this is the case, then it is not surprising that in the case of *no*-insertion, *no* could not be inserted between a nominal adjective and a noun. *No* is attached to prenominal *words*, not to prenominal *bound morphemes*. Thus, the data in (56) do not show evidence that nominal adjectives are not associated with [-V].

Nominal adjectives cannot assign an accusative case, either. This fact suggests according to Case theory that they do not seem to be associated with the feature [-N]. Then, is the nominal adjective associated with the feature [+N]?

Although there is no strong positive evidence that the nominal adjectives are or are not associated with the syntactic feature [+N], on the basis of several pieces of empirical evidence shown above, it seems to be fair to assume that they form a natural class with nouns. As we have discussed above, the difference between noun and nominal adjective could be deduced from the hypothesis that the former is a free morpheme and the latter, a bound morpheme. We tentatively conclude that nominal adjective is a special class of noun, whose features are specified as [+N, -V] like those of nouns. Semantically, nominal adjectives are characteristically abstract nouns, describing some property of an object concerned. Nominal adjectives are bound, behaving in different ways from regular nouns, as discussed above. In the case of nominal adjectives, the copulas *na* and *da* both attach directly to them as a bound morpheme, but not to the maximal projection of [-V].

²⁵ The following examples are also ambiguous between noun and nominal adjective: *makka na/no* (meaning *scarlet*), *shikaku na/no* (meaning *square*), *jiwaru na/no* (meaning *mean*), and *kamoku na/no* (meaning *quiet*).

²⁶ Recall that according to Kitagawa and Ross's (1982) analysis discussed in the preceding section, *no* is deleted only when the prenominal modifier is [+V].

Let us now turn to a discussion of the properties of what I call adjectival verbs. As we saw in (42), the adjectival verb conjugates with respect to tense, mood and subordinating types. This fact suggests that the adjectival verb is associated with the feature [+V]. Kageyama (1982) and Miyagawa (1987) give supporting evidence for this hypothesis, pointing out that adjectives, verbs and what we call nominal adjectives take the dependent morpheme *-soo* (meaning *appears*). The relevant data were shown in (14), and are repeated below in (57):

- (57) a. Adj. : OK Kore wa oishi - soo da
 (This TOP delicious appear COPULA)
 'This appears to be delicious'
- b. N.Adj. : OK/? Koko wa shizuka-soo da
 (Here TOP quiet appear COPULA)
- c. V : OK Kare- wa tabe-soo da.
 (He TOP eat appear COPULA)
 'He appears to eat much'
- d. N : * Kore-wa hana -soo da.
 (This TOP flower appear COPULA)

(57) seems to indicate that the three categories in question form a natural class, and that they all share the feature [+V]. However, given our conclusion above that nominal adjectives are bound morphemes, there is another obvious way to analyze the data. That is, *oishi*, *shizuka*, and *tabe* are stems of an adjective (*oishi-i*), an adjectival verb (*shizuka-na*) and a verb (*tabe-ru*) respectively, and are all bound morphemes. On the other hand, the noun *hana* in (57d) is a free morpheme. Hence, it may well be that *-soo* attaches to bound morphemes but never to free morphemes. Thus, we claim that (57) does not provide direct evidence to support the existence of [+V] in adjectival nouns.

However, Miyagawa (1987:44) gives another piece of evidence in support of the claim that the nominal adjective is associated with the feature [+V], as shown in (58) - (59):

- (58) a. Adj.N.: Zuibun shizuka-da.
 (very quiet COPULA)
 'It's very quiet'
- b. N. : *Zuibun otoko da.
 (very man COPULA)
- c. Adj. : Zuibun utskushi-i.
 (very beautiful)
 'It's very beautiful'
- d. V. : Zuibun tabe-ru.
 (very eat)
 '(He) eats a lot'

These examples show that adjectives, verbs, and nominal adjectives can be modified by adverbs such as *zuibun*, meaning *quite a bit*. Here, Miyagawa (1987) uses the term 'adjectival noun' ambiguously to refer to both adjectival verbs and nominal adjectives in our terms, assuming that they have the same feature complex. In our terms, (58) and (59) seem to indicate that not nominal adjectives, but adjectival verbs form a natural class with verbs and adjectives. Thus, we hypothesize that adjectival verbs, like verbs and adjectives, have the feature [+V]. Miyagawa's (1987) generalization for the examples above may then be restated as follows: nouns cannot be modified by degree

adverbs such as *sugoku* (very) and *kanari* (rather); but nominal adjectives, adjectives and verbs are.

- (59) a. Adj.: Kanari hayai
 (rather fast)
 b. N.: *Kanari egao -da
 (rather smiling face COPULA)
 c. Adj.V: Kanari shizuka-da
 (rather quiet COPULA)
 d. V.: Kanari aru-ku
 (rather walk))
 'walk much'

Another piece of evidence that the adjectival verbs are associated with the feature [+V] can be found when we examine the distribution of the genitive Case marker *no*. According to Kitagawa and Ross (1982), the paradigm (31), which is repeated below in (62), is accounted for by a universal rule of modifier insertion as in (60), and a language specific rule in Japanese, *NO*-deletion as in (61).

- (60) MOD insertion Rule
 [NP X NP] --> [NP X MOD NP]

(61) *NO*-deletion

[NP X NP] --> [NP X MOD NP]

where: (a) NP ≠ e (i.e., the head of NP is occupied by a phonologically full lexical item), and
 (b) X = [...tense] (i.e., X is tensed [+V])

- (62) a. [NP[NP Yamada] no hon]
 Yamada GEN book
 'Yamada's book'
 b. [NP[PP koko kara] no michi]
 here from GEN road
 'A road from here'
 c. [NP[AP utukushii] (*no) hito]
 pretty (*GEN) person
 'pretty person'
 d. [NP[S Yamada-ga kaita] (*no) hon]
 Yamada NOM write (*GEN) book
 'a book that Yamada wrote'

Miyagawa (1987), adopting Kitagawa and Ross's analysis of *no*, provides an analysis for examples such as the following:

- (63) a. *kirei- na no hana
 pretty COP GEN flower
 b. kirei- na hana
 pretty COP flower

The structure of (63) is (64):

- (64) [NP[Adj.V kirei-na] (*no) hana]

He assumes that *no* is first automatically inserted between the adjectival verb and the head noun by the MOD insertion rule, but is later deleted due to the *NO*-deletion rule. In our terms, *NO*-deletion applies only when the prenominal modifier is [+V]. Hence, the fact that *no* cannot appear in (63) provides another piece of evidence that adjectival verbs are [+V].

So far, I have mainly discussed that the adjectival verb seems to be associated with the feature [+V]. Next, I need to examine whether the feature [-N] is included in the feature specification of adjectival verbs. The commonality among adjectival verbs, adjectives and stative verbs are found in the respect that there are a few transitive nominal adjectives: e.g., *kirai-na* (meaning *dislike*), *suki-na* (meaning *like*), and *shimpai-na* (meaning *worry about*). In the preceding section, it was shown that nominative Case is assigned to an NP when the NP is directly dominated by the maximal projection of [+V]. In the case of transitive adjectival verbs, both the subject and the object are accompanied by the nominative Case particle *ga* as in the cases of stative verbs and adjectives, as shown in (65). In other words, a transitive adjectival verb does not assign accusative Case. This fact suggests that adjectival verb is not associated with the feature [-N]. According to Case theory, the structural Case-assigners are generally [-N]. The empirical facts show that adjectival verbs like *hokori-na* (meaning *proud*) which take two arguments lack an ability to assign accusative case, unlike the normal transitive verbs.

- (65) a. Mary *ga* John *ga* *kirai* *na* *koto*
 NOM NOM hateful COP fact-that
 'The fact that Mary hates John'
 b. Mary *ga* John *ga* *shimpai* *na* *koto*
 NOM NOM worrying COP fact-that
 'The fact that Mary is worrying about John'

Summarizing the arguments thus far, adjectival verbs in Japanese are associated with [+V]. As to the value of the feature [+/-N], we showed one reason for not including [-N] in the feature matrix for adjectival verbs.

Then, are adjectival verbs associated with the feature [+N]? Miyagawa (1987) claims that what corresponds to English adjectives, which are [+V, +N], in Japanese are adjectival verbs (in his term, adjectival nouns), and not adjectives. That is, he claims that adjectival verbs have the feature matrix [+V, +N].

As noted in the previous section, Miyagawa (1987) points out that there are no properties shared exclusively by adjectives and nouns, and based on this observation, he concludes that Japanese adjectives lack the feature [+N]. In Section 2, we showed in support of Miyagawa that an important generalization indicating that adjectives and nouns form a natural class in English does not apply in the case of Japanese. In English, the objects of adjective and noun are both Case marked by *of*. On the other hand, in Japanese, the object of adjectives is marked by the nominative Case marker *ga* and that of nouns by the genitive Case marker *no*. Hence, the Case marking properties of adjectives and nouns do not show that they form a natural class in Japanese.

However, if the argument above indicates indeed that Japanese adjectives lack the feature [+N], one might think that the very same argument leads us to the conclusion that adjectival verbs also lack this feature. As shown below, however, it seems that there is no positive evidence that indicates that [+N] is needed to be included in the feature specification of adjectival verbs. The objects of adjectival verbs and nouns are accompanied by different Case markers: in the former case, *no*; in the latter, *ga*.

- (66) a. toshi no hakai
(city of destruction)
'destruction of city'
b. Mary wa kodomo ga shimpai da
(TOP child NOM worry COP)
'Mary is worrying about (her) child'

(66) shows that in Japanese, the object of nouns and that of adjectival verbs are accompanied by different case particles, *no* and *ga* respectively, and they do not seem to share a common Case marking property like English Inherent Case assigners, i.e., adjectives and nouns do. Thus, if the feature [+ N] is assumed for *of*-insertion in English, then, there does not seem to be any reason to suppose that Japanese adjectival verb has this feature.

Thus, to the extent that it is reasonable to suppose that Japanese adjectives are not associated with the feature [+N], it is reasonable to state that adjectival verbs also lack the feature [+N]. I tentatively conclude here that contrary to Miyagawa (1987), adjectival verbs lack the feature [+N].

In this section, I argued that when we examine the so-called nominal adjective, we shall distinguish it from its form including the copula (which we call the adjectival verb). Further, I argued that its stem has the feature [+N, -V] and that the form including the stem and the copula has the same feature as adjectives, [+V].

5. Conclusion

In this paper, I argued that the two types of Japanese adjectives -- adjectives and adjectival verbs in my terms -- have the same syntactic feature [+V].

I began by noting that one of the main issues at stake was the definition of the so-called 'adjectives' and the so-called 'adjectival nouns'. I proposed that the full form, but not the stem, of adjectives, should be termed 'adjective'. Similarly, the full form of adjectival noun was termed 'adjectival verb'; and the stem was termed nominal adjective. I assumed that the two adjectives have the following structures:

- (67) a. Adjective: *utsukushi -i* (*beautiful*)
 [Adj[STEM_{utsukushi}] -i]
- b. Nominal Adjective and Adjectival Verb: *kirei-na*
 (*beautiful*)
- | | | |
|---------|---------------------------|--|
| | (i) | (ii) |
| N. Adj. | [N.Adj _{kirei}] | [Adj.v[N.Adj _{kirei}] -na]
(attributive) |
| N. Adj. | [N.Adj _{kirei}] | [Adj.v[N.Adj _{kirei}] -da]
(predicative) |
| N. Adj. | [N.Adj _{kirei}] | [Adj.v[N.Adj _{kirei}] -de aru]
(original form of predicative) |

On the basis of this assumption, I have provided evidence bearing on the possible feature specifications of 'adjectives', 'nominal adjectives', and 'adjectival verbs'. The analysis proposed in this paper attempted to provide a syntactic and morphological account of these adjectives by examining empirical data of Modern Japanese.

It is worth noting here that the feature analysis proposed in this paper is not what has standardly been assumed. Miyagawa (1987) has proposed that the stem of adjectives bears the feature [+ V], and what he calls 'adjectival noun', which seems to correspond to what I term nominal adjective, has features [+ N, + V]. In this paper, I argued that the adjectives and the adjectival verbs are both associated with [+ V] with no value for [+ /-N]; and the stem of adjectival verbs, which I termed the nominal adjective, is associated with [+ N, -V]. We argued that the nominal adjective is a bound morpheme which is associated with the same syntactic features as nouns.

Although I have certainly left many issues unsolved and many avenues unexplored, I have proposed the hypothesis that those two adjectives, adjective and adjectival verb, which have been claimed to be different, are actually specified by the same syntactic feature. The standard hypothesis, which I argued against, that nominal adjectives/adjectival verbs, as opposed to adjectives, have the syntactic feature [+ N] was proposed because of the strong nouniness of the stem of the adjectival verb. We have proposed in this paper that it is the stem of the adjectival verb that has the feature [+ N], and that the adjectival verb itself has the same feature specification as adjectives in Japanese.²⁷

References

- Contreras, (1987) "Small Clauses in Spanish and English" *Natural Language and Linguistic Theory* 5, 225-244.
- Chomsky, N. (1970) "Remarks on Nominalization," in R. A. Jacobs and P. S. Rosenbaum, eds., *Readings in English Transformational Grammar*, Ginn and Co., Waltham, Mass.
- _____. (1981) *Lectures on Government and Binding*, Foris Publications, Dordrecht, Holland.
- _____. (1986) *Knowledge of Language*, Praeger, New York.
- Chomsky, N. and H. Lasnik (1977) "Filters and Control," *Linguistic Inquiry* 8, 425-504.
- Emonds, J. (1985) *A Unified Theory of Syntactic Categories*, Foris Publications, Dordrecht, Holland.
- Fukui, N. (1986) *A Theory of Category Projection and Its Applications*, Doctoral dissertation, MIT.
- Kageyama, T. (1982) "Word Formation in Japanese," *Lingua* 57, 215-258.
- Kitagawa, C. and C.N.G. Ross (1982) "Prenominal Modification in Chinese and Japanese," *Linguistic Analysis* 9, 19-53.

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- Kuno, S. (1972) "Functional Sentence Perspective: a Case Study from Japanese and English," *Linguistic Inquiry*. 3, 269-320.
- _____. (1973) *The Structure of the Japanese Language*, MIT Press, Cambridge, Mass.
- _____. (1987). "Subject Raising" in M. Shibatani ed., *Syntax and Semantics* 5. 17-50.
- Lieber, R. (1980) "Argument Linking and Compounds," *Linguistic Inquiry* 14, 251-285.
- Martin, J. (1975) *A Reference Grammar of Japanese*, Yale University Press, New Haven.
- Matsushita, D. (1930) "Hyoujun Nihon Kougo hou" (Standard Japanese Language). Chubunkan Shoten, Tokyo.
- Miyagawa, S. (1987) "Lexical Categories in Japanese," *Lingua* 62, 29-51.
- Riemsdijk, H.C. van. (1983) "The case of German adjectives," in F. Heny and B. Richards (eds.), *Linguistic categories: Auxiliaries and related puzzles I*, Reidel, Dordrecht.
- Saito, M. (1982) "Case Marking in Japanese: A Preliminary Study," ms., MIT.
- _____. (1985) *Some Asymmetries in Japanese and Their Theoretical Implications*, Doctoral dissertation, MIT.