

**DA-DELETION:
CLASSIFICATION OF CLAUSE-FINAL ELEMENTS IN JAPANESE***

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1. Copula in Japanese

In Japanese, nominal predication is followed by the copula, which essentially comes in one of the four exponents. Among the exponents, *de ar-u* is the most basic one in the sense that it can usually replace any other form. It implicates formal style, unlike the others.

- (1) kanozyo wa gakusha de ar -u
she TOP scholar DE be-NONPAST
‘She is a scholar.’

This sequence is standardly analyzed as in (2), following Martin (1975).

- (2) *Analysis:* de ar-u
COPULA.INFINITIVE V-NONPAST

De derives from *ni te* as in (3), at least diachronically.

- (3) ni te > nte > nde > de
DAT/LOC GERUND

The other exponents *da*, \emptyset , and *na*, appear in (4–6). In most cases, they are not interchangeable with one another.

- (4) kanozyo wa gakusha da to omo-u
she TOP scholar DA C think-NONPAST
‘She is a scholar.’

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- (5) kanozyo wa gakusha \emptyset rasi-i
 she TOP scholar seem-NONPAST

‘She seems to be a scholar.’

- (6) sizuka na hito ga i-ru
 quiet NA person NOM be-NONPAST

‘There is a quiet person.’

As a working hypothesis, let us assume (7). This hypothesis is to be reconsidered later.

- (7) *Analysis*: The three forms *da*, \emptyset , and *na* are contraction or deletion of *de ar-u*.

Among the contracted/deleted forms, *na* in (6) has a rather straightforward distribution compared to the other two. This is examined in section 2. After that, the distribution of *da* in (4) and \emptyset in (5) are examined in sections 3-7. Section 8 clarifies the structure of a construction that is relevant to the main observation. Section 9 summarizes the results. Section 10 observes some more phenomena of what will be called *beki*-group morphemes. Sections 11 and 12 respectively provide an analysis of *da* and \emptyset , and *na*.

2. Distribution of *Na*

In a relative (8) or an appositive clause, the contracted form is *na* (9), and not *da* or \emptyset .

- (8) gakusya de ar-u hito
 scholar DE be-NONPAST person

‘a person who is a scholar’

- (9) gakusya {**da* /** \emptyset* /*na*} hito
 scholar DA NA person

Na in (9) has anomaly due to an independent factor. That is, modification by genitive-assigned noun phrase (10) is preferred over a relative clause with a noun and *na*. (See Sawada (2007).)

- (10) gakusya no hito
 scholar GEN person

If the predicate in the relative clause is an adjectival noun (11), which cannot take the genitive case marker (13), the anomaly with *na* disappears (12).

- (11) sizuka de ar-u hito
 quiet DE be-NONPAST person

‘a person who is a quiet’

(12) sizuka {*da/*∅/na} hito
quiet DA NA person

(13) *sizuka no hito
quiet GEN person

The modifiee of a relative clause need not be a noun, but can be an adjectival noun such as *you* ‘seems.’

(14) kanozjo wa sizuka de ar-u you da
she TOP quiet DE be-NONPAST seem DA

‘She seems to be a quiet.’

(15) kanozjo wa sizuka {*da/*∅/na} you da
she TOP quiet DA NA seem DA

To summarize this section, *na* has a straightforward distribution: relative or appositive clause, and is not interchangeable with the other two contracted forms.

3. Distribution of *Da* and ∅

As noticed at least by Martin (1975), Inoue (1969), Kuno (1973), and Ueyama (1992), the interrogative complementizer *ka* in a matrix environment appears with the non-contracted form (16) and ∅ (17), but not *da*.

(16) ?kanozjo wa gakusya de ar-u ka
she TOP scholar DE be-NONPAST Q

‘Is she is a scholar?’

(17) kanozjo wa gakusya {*da /∅} ka
she TOP scholar DA Q

In embedded interrogative clause, the non-contracted form (18), *da* (19), and ∅ are allowed.

(18) [kanozjo ga gakusya de ar-u ka] wakar-ana-i
she NOM scholar DE be-NONPAST Q understand-NEG-NONPAST

‘(I) do not know whether she is a scholar.’

(19) [kanozjo ga gakusya {da /∅} ka] wakar-ana-i
she NOM scholar DA Q understand-NEG-NONPAST

Considering *da/∅*-alternation (but not the distribution of *de aru*), Ueyama (1992) makes a generalization that can be expressed essentially as (20).

- (20) *Generalization*: \emptyset -form copula appears in Japanese in environments where Subject-Aux Inversion occurs in languages like English.

She derives her generalization from the following assumptions:

- (21) Analysis:
- a. Interrogative C must bear [+WH] (Rizzi 1991).
 - b. A predicate that selects an interrogative clause marks the embedded C as [+WH].
 - c. The other way to assign [+WH] to C is to move a [_I [+WH]] to C.
 - d. *Da*-form of the copula blocks I-to-C movement.

From these assumptions, it follows that a matrix interrogative clause in Japanese requires I-to-C movement, and cannot have *da*.

However, Ueyama does not explain why *de aru* (16) is allowed in an environment where *da* is not. If her intension underlying (21d) is that phonologically explicit *da* includes some features not included in \emptyset , which blocks I-to-C movement, then it is natural to assume that the non-contracted form *de aru* has as much features as *da*, and hence blocks I-to-C movement as well.

Furthermore, Ueyama's analysis meets challenge by the existence of much wider range of morphemes than *ka* that follow the copula and have idiosyncratic restriction on the exponent of the copula. The next four sections observe this fact more extensively.

4. No Contraction

First of all, a few number of morphemes do not allow any form of contracted copula. They only allow the non-contracted form.

-- *Beki* 'ought to'

- (22) kanozyo wa gakusya de ar-u beki da
 she TOP scholar DE be-NONPAST BEKI DA

'She ought to be a scholar.'

- (23) kanozyo wa gakusya { *da / * \emptyset } beki da
 she TOP scholar DA BEKI DA

-- *Na* 'do not'

- (24) kimi wa gakusya de ar-u na
 you TOP scholar DE be-NONPAST NA

'Do not be a scholar.'

(25) kimi wa gakusya{*da /*∅} na
you TOP scholar DA NA

-- *Mai* 'I bet not'

(26) kanozyo wa gakusya de ar-u mai
she TOP scholar DE be-NONPAST MAI
‘I bet she is not a scholar.’

(27) kanozyo wa gakusya {*da /*∅} mai
she TOP scholar DA MAI

These morphemes seem to share the common property that they denote strong modality.

5. Obligatory *Da*-Deletion

Some morphemes allow only ∅, and not *da*.

--*Ka* INTERROGATIVE (matrix)

(28) ?kanozyo wa gakusya de ar-u ka
she TOP scholar DE be-NONPAST KA
‘Is she a scholar?’

(29) kanozyo wa gakusya {*da /∅} ka
she TOP scholar DA KA

--*Rasi-i* ‘seems’

(30) kanozyo wa gakusya de ar-u rasi-i
she TOP scholar DE be-NONPAST RASI-I
‘She seems to be a scholar.’

(31) kanozyo wa gakusya {*da /∅} rasi-i
she TOP scholar DA RASI-I

--*Mitai* ‘seems, as if’

(32) kanozyo wa gakusya de ar-u mitai da
she TOP scholar DE be-NONPAST MITAI DA
‘She seems to be a scholar.’
‘She looks as if she is a scholar.’

- (33) kanozyo wa gakusya {*da /∅} mitai da
 she TOP scholar DA MITAI DA

--*Nara* 'if'

- (34) kanozyo ga gakusya de ar-u nara
 she NOM scholar DE be-NONPAST NARA
 'if she a scholar'

- (35) kanozyo ga gakusya {*da /∅} nara
 she NOM scholar DA NARA

--*Sa* 'after all,' RESIGNATION

- (36) douse kanozyo wa gakusya de ar-u sa
 after.all she TOP scholar DE be-NONPAST SA
 'After all, she a scholar!'

- (37) douse kanozyo wa gakusya {*da /∅} sa
 after.all she TOP scholar DA SA

6. Optional *Da*-Deletion

Some morphemes allow both *da* and ∅-forms.

--*Ka* INTERROGATIVE (embedded)

- (38) kanozyo ga gakusya de ar-u ka wakar-ana-i
 she NOM scholar DE be-NONPAST KA understand-NEG-NONPAST
 'I do not know whether she is a scholar.'

- (39) kanozyo ga gakusya {da /∅} ka wakar-ana-i
 she NOM scholar DA KA understand-NEG-NONPAST

--*Ne* 'isn't it?'

- (40) ?kanozyo wa gakusya de ar-u ne
 she TOP scholar DE be-NONPAST NE
 'She is a scholar, isn't she?'

- (41) kanozyo wa gakusya {da /∅} ne
 she TOP scholar DA NE —(41) with ∅ has a feminine flavour.

--*Yo* 'you know?'

- (42) ?kanozyo wa gakusya de ar-u yo
 she TOP scholar DE be-NONPAST YO

'You know what? She is a scholar.'

- (43) kanozyo wa gakusya {da / \emptyset } yo
 she TOP scholar DA YO —(43) with \emptyset has a feminine flavour.

7. No *Da*-Deletion

The remaining majority of the morphemes do not allow \emptyset .

--*To* COMPLEMENTIZER

- (44) kanozyo ga gakusya de ar-u to omo-u
 she NOM scholar DE be-NONPAST C think-NONPAST

'I think that she is a scholar.'

- (45) kanozyo ga gakusya {da /* \emptyset } to omo-u
 she NOM scholar DA C think-NONPAST

--*Sou* 'I heard that'

- (46) kanozyo wa gakusya de ar-u sou da
 she TOP scholar DE be-NONPAST SOU DA

'I heard that she is a scholar.'

- (47) kanozyo wa gakusya {da /* \emptyset } sou da
 she TOP scholar DA SOU DA

--*Ga* 'although'

- (48) kanozyo wa gakusya de ar-u ga
 she TOP scholar DE be-NONPAST GA

'although she is a scholar'

- (49) kanozyo wa gakusya {da /* \emptyset } ga
 she TOP scholar DA GA

--*Keredo* ‘although’

(50) kanozyo wa gakusya de ar-u keredo
 she TOP scholar DE be-NONPAST KEREDO
 ‘although she is a scholar’

(51) kanozyo wa gakusya {da /*∅} keredo
 she TOP scholar DA KEREDO

--*Kara* ‘because’

(52) kanozyo wa gakusya de ar-u kara
 she TOP scholar DE be-NONPAST KARA
 ‘because she is a scholar.’

(53) kanozyo wa gakusya {da /*∅} kara
 she TOP scholar DA KARA

--*Shi* ‘and’

(54) kanozyo wa gakusya de ar-u shi
 she TOP scholar DE be-NONPAST SHI
 ‘She is a scholar, and . . .’

(55) kanozyo wa gakusya {da /*∅} shi
 she TOP scholar DA SHI

--*Tomo* ‘indeed’

(56) kanozyo wa gakusya de ar-u tomo
 she TOP scholar DE be-NONPAST TOMO
 ‘Indeed, she is a scholar.’

(57) kanozyo wa gakusya {da /*∅} tomo
 she TOP scholar DA TOMO

--*Naa* ‘I am sentiment about’

(58) kanozyo wa gakusya de ar-u naa
 she TOP scholar DE be-NONPAST NAA
 ‘I am sentiment about the fact that she is a scholar.’
 ‘I suspect she is a scholar.’

- (59) kanozyo wa gakusya {da /*∅} naa
 she TOP scholar DA NAA

--Zo INTENSIFY

- (60) kanozyo wa gakusya de ar-u zo
 she TOP scholar DE be-NONPAST ZO
 ‘Didn’t you know that she is a scholar?’

- (61) kanozyo wa gakusya {da /*∅} zo
 she TOP scholar DA ZO

--Wa FEMININE

- (62) ?kanozyo wa gakusya de ar-u wa
 she TOP scholar DE be-NONPAST WA
 ‘She is a scholar.’ — *feminine*

- (63) kanozyo wa gakusya {da /*∅} wa
 she TOP scholar DA WA

--Ze MASCLINE

- (64) ?kanozyo wa gakusya de ar-u ze
 she TOP scholar DE be-NONPAST ZE
 ‘She is a scholar.’ — *mascline*

- (65) kanozyo wa gakusya {da /*∅} ze
 she TOP scholar DA ZE

8. On The Ambiguity of *To*

A note regarding *to* in section 7 (44) is made in this section. *To* in (66) allows only *da*. On the otherhand, there is another *to* that seems to allow only \emptyset (67).

- (66) tanaka ga yamada wo gakusya {da /*∅} to omot-ta
 Tanaka NOM Yamada ACC scholar DA to think-PAST
 ‘Tanaka thought that Yamada is a scholar.’

- (67) tanaka ga yamada wo gakusya {*da /∅} to minas-i-ta
 Tanaka NOM Yamada ACC scholar DA to regard-EPN-PAST
 ‘Tanaka regarded Yamada as a scholar.’

From this fact, one may think that the restriction on the form of contracted copula is rather complicated with *to*. In the following, four pieces of evidence are provided for the claim that *to* in (66) is a complementizer with structure (68) and *to* in (67) is a particle, i.e., postposition or case marker, with structure (69). In (69), there is no position for any form of the copula to appear. Then, construction (67) becomes irrelevant for the purpose of observing the contracted form of the copula.

(68) tanaka ga [yamada wo gakusya da] to omot-ta
Tanaka NOM Yamada ACC scholar DA C think-PAST

(69) tanaka ga yamada wo [gakusya to] minas-i-ta
Tanaka NOM Yamada ACC scholar PRTC regard-EPN-PAST

First, in (69), the non-contracted form is not allowed.

(70) tanaka ga yamada wo gakusya de ar-u to omot-ta
Tanaka NOM Yamada ACC scholar DE be-NONPAST to think-PAST

(71) *tanaka ga yamada wo gakusya de ar-u to minas-i-ta
Tanaka NOM Yamada ACC scholar DE be-NONPAST to regard-EPN-PAST

Second, the embedded subject with accusative case marking in (66) can be replaced by a nominative case (72). This does not happen with (67) as in (73).

(72) tanaka ga yamada ga gakusya da to omot-ta
Tanaka NOM Yamada NOM scholar DA to think-PAST

‘Tanaka thought that Yamada is a scholar.’

(73) *tanaka ga yamada ga gakusya to minas-i-ta
Tanaka NOM Yamada NOM scholar to regard-EPN-PAST

‘Tanaka regarded Yamada as a scholar.’

This indicates that (66) is an exceptional case marking construction, whereas the accusative phrase in (67) is the direct object of the matrix predicate *minas-* ‘regard.’

Third, *gakusya da to* in (66) cannot be scrambled (74). In (67), scrambling is possible (75).

(74) *tanaka ga gakusya da to yamada wo t omot-ta
Tanaka NOM scholar DA to Yamada ACC think-PAST

‘Tanaka thought that, a scholar, Yamada is.’

- (75) tanaka ga gakusya to yamada wo t minas-i-ta
Tanaka NOM scholar to Yamada ACC regard-EPN-PAST
'Tanaka regarded as a scholar, Yamada.'

This indicates that *gakusya da to* is not a constituent in (66) but *gakusya to* in (67) is.

Fourth, the difference appears also in which categories can replace the nominal position. *To* in construction (66) allows a predicate of other categories, whereas *to* in (67) allows only noun. This is observed in the contrast in (76, 77) with an adjectival noun.

- (76) tanaka ga yamada wo sizuka da to omot-ta
Tanaka NOM Yamada ACC quiet DA to think-PAST
'Tanaka thought that Yamada is quiet.'

- (77) *tanaka ga yamada wo sizuka to minas-i-ta
Tanaka NOM Yamada ACC quiet to regard-EPN-PAST
'Tanaka regarded Yamada as quiet.'

Similarly, an adjective cannot replace the nominal phrase in (67).

- (78) tanaka ga yamada wo kasiko-i to omot-ta
Tanaka NOM Yamada ACC clever-NONPAST to think-PAST
'Tanaka thought that Yamada is clever.'

- (79) *tanaka ga yamada wo kasiko-i to minas-i-ta
Tanaka NOM Yamada ACC clever-NONPAST to regard-EPN-PAST
'Tanaka regarded Yamada as clever.'

Nor does a verb.

- (80) tanaka ga yamada ?wo /ga hasit-ta to omot-ta
Tanaka NOM Yamada ACC NOM run-PAST TO think-PAST
'Tanaka thought that Yamada ran.'

- (81) *tanaka ga yamada wo hasit-ta to minas-i-ta
Tanaka NOM Yamada ACC run-PAST TO regard-EPN-PAST
'Tanaka regarded Yamada as ran.'

This follows if the noun in (66) is a predicate, whereas the noun in (67) is not. The latter must be either an argument or an adjunct of the matrix predicate *minas-* 'regard.' The structural difference is also reflected in their respective English translations.

This section verified that the *to* that is not followed by *da* is not a complementizer.

9. Generalization

To summarize the restrictions on contraction from sections 3–7, we get table (82).

(82)

Exponent	Interpretation	Contraction	Category
beki	‘ought to’	*	Adjectival Noun
na	‘do not’	*	
mai	‘I bet not’	*	
ka	INTERROGATIVE (matrix)	∅	
rasi-ku	‘seems’	∅	Adjective
mitai	‘seems, as if’	∅	Adjectival Noun
d(e)arou	‘is probably’	∅	
nara	‘if’	∅	
sa	‘after all,’ RESIGNATION	∅	
ka	INTERROGATIVE (embedded)	da/∅	
ne	‘isn’t it?’	da/∅	
yo	‘you know?’	da/∅	
to	∅	da	
sou	‘I heard that’	da	Adjectival Noun
ga	‘although’	da	
keredo	‘although’	da	
kara	‘because’	da	
shi	‘and’	da	
tomo	‘indeed’	da	
naa	‘I am sentiment that’	da	
zo	INTENSIFY	da	
wa	FEMININE	da	
ze	MASCLINE	da	

Accordingly, the morphemes can be classified into four groups.

(83) *Beki*-group. These allow *de aru*, but do not allow contracted forms.

(84) *Matrix-ka*-group. These allow *de aru* and ∅, but do not allow *da*.

(85) *Embedded-ka*-group. These allow *de aru*, *da*, and ∅.

(86) *To*-group. These allow *de aru* and *da*, but do not allow ∅.

10. *Beki-Group*

This section observes additional phenomena related to *beki*-group. Among the classes of morphemes, the class including *beki* has straightforward characteristics given in (87).

- (87) *Generalization*: The morphemes that disallow contraction (*beki*-group) express strong modality.

Besides the restriction on contraction, there are additional arguments that suggest the significance of establishing the *beki*-group.

First, *beki*, *na*, *mai* prohibit the past affix *-ta*.

- (88) *gakusya de at-ta beki da
scholar DE be-PAST BEKI DA

‘It ought to have been cold.’

- (89) *gakusya de at-ta na
scholar DE be-PAST NA

‘Have not be cold.’

- (90) *gakusya de at-ta mai
scholar DE be-PAST MAI

‘I bet it was cold.’

Other morphemes allow the past morpheme freely.

- (91) gakusya de at-ta rasi-i
scholar DE be-PAST seem-NONPAST

‘She seems to have been a scholar.’

- (92) gakusya de at-ta ne
scholar DE be-PAST isn’t.it

‘(She) used to be a scholar, isn’t she?’

- (93) gakusya de at-ta sou da
scholar DE be-PAST I.heard.that DA

‘I heard that (she) used to be a scholar.’

Second, adjectival predication also has a contracted form in (95), which is (unlike the optional contraction in nominal predication) obligatory when the adjective and the verb *aru* are adjacent (94).

(94) samu-ku *(mo /sae) ar-u
 cold-A also/even be-NONPAST
 ‘It is also/even cold.’

(95) samu-i
 cold-NONPAST
 ‘It is cold.’

The three morphemes *beki*, *na*, *mai* again constitute a group in that they prohibit contracted form of adjectives.

(96) samu-ku sae ar-u beki da
 cold-A even be-NONPAST BEKI DA
 ‘It ought to be even cold.’

(97) *samu-i beki da
 cold-NONPAST BEKI DA

(98) samu-ku sae ar-u na
 cold-A even be-NONPAST NA
 ‘Do not be even cold.’

(99) *samu-i na
 cold-NONPAST NA

(100) samu-ku sae ar-u mai
 cold-A even be-NONPAST MAI
 ‘I bet it will not be even cold.’

(101) *samu-i mai
 cold-NONPAST MAI

Other morphemes such as *rasi*, *ne*, *sou* allow contraction of the adjective.

(102) samu-ku sae ar-u rasi-i
 cold-A even be-NONPAST seem-NONPAST
 ‘It even seems that it is cold.’

(103) samu-i rasi-i
 cold-NONPAST seem-NONPAST

- (104) samu-ku sae ar-u ne
 cold-A even be-NONPAST isn't.it
 'It is even cold, isn't it?'
- (105) samu-i ne
 cold-NONPAST isn't.it
- (106) samu-ku sae ar-u sou da
 cold-A even be-NONPAST I.heard.that DA
 'I heard that it is even cold.'
- (107) samu-i sou da
 cold-NONPAST I.hears.that DA

The two additional phenomena observed in this section suggest that the idiosyncratic nature of *beki*-group regarding the choice of the contracted form of the copula is not determined by the phonological/morphological peculiarity of *da*.

11. Analysis of *Da* and \emptyset

This section proposes an analysis of the distribution of *de aru*, *da*, and \emptyset . The analysis to be made is based on the assumptions in (108).

- (108) a. The gerundive affix *-te* has pleonastic and meaningful usages.
 b. Contraction of *ni te* into *de* as in (3) takes place synchronically in the derivation. Only with the *de* derived from the meaningful *-te*, *de aru* is contracted to *da*.
 c. What has been referred to so far to as \emptyset is (underlying) absence of the copula rather than contraction/deletion. In the relevant cases, the morpheme directly selects an NP without a copula.

Let us look at point (108a). Based on the different interpretations of *te iru* construction, Ogihara (1998) proposes that *-te* is ambiguous with respect to the value of feature [PERFECT], where [-PERFECT] has no aspectual contribution, and [+PERFECT] has semantic contribution with respect to eventuality. (109) and (110) with an instantaneous verb *taore*- 'fall' respectively have concrete result interpretation and experiential interpretation.

- (109) tanaka wa ima taore-te i-ru
 Tanaka TOP now fall-TE ASP-NONPAST
 'Tanaka is lying down now.'

- (110) tanaka wa kyonen taore-te i-ru
Tanaka TOP last.lear fall-TE ASP-NONPAST

‘Tanaka has the experience of having fallen down last year.’

Ogihara analyzes *-te* in the respective constructions as [-PERFECT] and [+PERFECT]. Likewise, (111 and 112) with a durative verb *tabe-* ‘eat’ respectively have on-going (progressive) interpretation and experiential interpretation.

- (111) tanaka wa ima tabe-te i-ru
Tanaka TOP now eat-TE ASP-NONPAST

‘Tanaka is eating now.’

- (112) tanaka wa kyonen tabe-te i-ru
Tanaka TOP last.year eat-TE ASP-NONPAST

‘Tanaka has the experience of having eaten last year.’

He analyzes *-te* in the respective constructions as [-PERFECT] and [+PERFECT]. What is characteristic of interpretation with [+PERFECT] is that there is an implicit or explicit event that happened in the past interval that caused the experiential state. The present work follows Ogihara’s analysis of *-te*.

The next point (108b) stands on the assumption (108a). It will be assumed that the pleonastic and the meaningful *-te* are contracted with the particle *ni* to respectively become the pleonastic $de_{[-PERFECT]}$ and the meaningful $de_{[+PERFECT]}$ (113).

- (113) a. $ni\ te_{[-PERFECT]} \rightarrow de_{[-PERFECT]}$
b. $ni\ te_{[+PERFECT]} \rightarrow de_{[+PERFECT]}$

The two instances of *de* in turn have different restriction regarding contraction.

- (114) a. $de_{[-PERFECT]} aru \rightarrow \dots$ (no contraction)
b. $de_{[+PERFECT]} aru \rightarrow da_{[+PERFECT]}/na_{[+PERFECT]}$ (optional contraction)

Based on these assumptions, let us consider *beki*-group. *Beki*-group morphemes are incompatible with *-te* with [+PERFECT] (115–118). *Beki* is to be interpreted as deontic modal, and *mai* is to be interpreted as epistemic modal.

- (115) tanaka wa ima yuka ni taore-te i-ru beki da / mai
Tanaka TOP now floor at fall-TE ASP-NONPAST should DA should.not

‘Tanaka should (not) be lying down now.’

(116) *tanaka wa kyonen yuka ni taore-te i-ru beki da /mai
 Tanaka TOP last.year floor at fall-TE ASP-NONPAST should DA should.not

‘Tanaka should (not) have the experience of having fallen down last year.’

(117) tanaka wa ima tabe-te i-ru beki da /mai
 Tanaka TOP now eat-TE ASP-NONPAST should DA should.not

‘Tanaka should (not) be eating now.’

(118) *tanaka wa kyonen tabe-te i-ru beki da /mai
 Tanaka TOP last.year eat-TE ASP-NONPAST should DA should.not

‘Tanaka should (not) have the experience of having eaten last year.’

With *na*, the [-PERFECT] concrete result and on-going interpretations are unnatural, but they are still better than experiential interpretation.

(119) ?ima yuka ni taore-te i-ru na
 now floor at fall-TE ASP-NONPAST NA

‘Do not be lying down now.’

(120) *kyonen yuka ni taore-te i-ru na
 last.year floor at fall-TE ASP-NONPAST NA

‘Do not have the experience of having fallen down last year.’

(121) ?ima tabe-te i-ru na
 now eat-TE ASP-NONPAST NA

‘Do not be eating now.’

(122) *kyonen tabe-te i-ru na
 last.year eat-TE ASP-NONPAST NA

‘Do not have the experience of having eaten last year.’

This and the previous observation regarding past tense indicate that the morphemes -*te*_[+PERFECT], *ta*, *beki*, *mai*, *na* are concerned with the same semantic domain, namely modality/tense, and are exclusive of one another. Then, (124) would be prohibited underlyingly.

(123) ni -*te*_[-PERFECT] ar-u beki

(124) *ni -*te*_[+PERFECT] ar-u beki

Under the assumption of contraction rules (113), it follows that *beki*-group morpheme can cooccur with the pleonastic *de*_[-PERFECT] but not with the contentful *de*_[+PERFECT].

(125) $de_{[-PERFECT]}$ ar-u beki

(126) $*de_{[+PERFECT]}$ ar-u beki

In turn, rules in (114) require that *de aru* that appears with a morpheme in *beki*-group remains as is, and does not undergo any contraction.

(127) $*da$ beki

Regarding the distribution of *da*, Niimura (2007) observes its optionality in the complement clause of the complementizer *to*. Unlike the grammaticality assumed in the present work, Niimura judges that *da* can be optionally deleted with the acceptability depending on whether the nominal is a predicate or not.

(128) watasi wa sono otoko wo {sensei /gityou} (da) to omot-te i-ru
I TOP that man ACC teacher chairperson DA C think-TE ASP-NONPAST

(129) watasi wa sono otoko wo {tanaka /ano hito }?(da) to omot-te i-ru
I TOP that man ACC Tanaka that person DA C think-TE ASP-NONPAST

The nominal in (128) is argued to be a predicate, whereas the nominal in (129) is to be an argument. He considers this as essentially similar to the optionality of *to be* in English exceptional case marking/small clause construction. In English, the same optionality difference holds between constructions in which the nominal is a predicate or an argument.

(130) I consider the man (to be) {tall/a teacher/the president}

(131) I consider the man *(to be) {John/that man/the robber we were talking about}

The test that is used to identify whether the nominal is predicational is to replace *be* with *become*, which is proposed by Higgins (1979). If replacement is possible, then the nominal is a predicate.

(132) the man {is/became} tall {a teacher/the president}
—*predicational*

(133) the man {is/*became} {John/that man/the bank robber we were talking about}
—*non-predicational*

Niimura observes that the same contrast holds for Japanese. (134) is an adjective, which is clearly a predicate. Hence it cooccurs with *nar-* ‘become.’ The nominal in (135) is predicational, and *da* can be replaced with *nar-*. In (136), this is not possible.

(134) sono otoko ga se ga takaku nat-ta
that man NOM high NOM high become-PAST
‘That man became high.’ —*predicational*

- (135) sono otoko ga {sensei /gityou } {da /ni nat-ta }
 that man NOM teacher chairperson DA to become-PAST

‘That man is/became a teacher/chairperson.’ —*predicational*

- (136) sono otoko ga {tanaka /ano hito } {da /*ni nat-ta }
 that man NOM Tanaka that person DA to become-PAST

‘That person is/became Tanaka/that person.’ —*non-predicational*

Niimura’s analysis is essentially as the following. There are two entries for *da*. One of them functions as a predicate, and the other does not. When the nominal is a predicate (128, 135), the non-predicational *da* is used, and this *da* becomes obligatory only when it is morphologically required, such as in finite clauses. When the nominal is not a predicate (129, 136), a predicate is required. The predicational *da* can fulfil this role, but *nar-* ‘become,’ which only works as a copular element, cannot be used. *Da* is obligatory in this case regardless of morphological requirements because of the necessity of a predicate.

Besides the grammaticality judgement regarding the deletion of *da*, Niimura’s and the present analysis may appear to have a potential conflict: his analysis assumes a non-predicational *da*, whereas the present analysis allows the appearance of *da* only when it carries the meaning [+PERFECT]. However, [PERFECT] and [PREDICATE] (non-predicate) are different features, and the two accounts can be made compatible. Under the assumption that *da* is synchronically derived from *de aru*, the origin of the [+PREDICATE] feature shall be the verb *ar-* ‘be.’ Depending on the feature of *de* and *ar-*, we can distinguish three cases. If *de* is [–PERFECT], then contraction into *da* does not happen (137a). If *de* is [+PERFECT], two different *das*, with different values of [PREDICATE], are derived (137b, c).

- (137) a. $de_{[-PERFECT]} aru * \rightarrow \dots$
 b. $de_{[+PERFECT]} aru_{[-PREDICATE]} \rightarrow da_{[+PERFECT -PREDICATE]}$
 c. $de_{[+PERFECT]} aru_{[+PREDICATE]} \rightarrow da_{[+PERFECT +PREDICATE]}/na_{[+PERFECT +PREDICATE]}$

The two *das* in (137b, c) are what Niimura distinguishes in his analysis.

Next, let us consider the matrix-*ka*-group. The morphemes in this group do not necessarily contain strong modality as part of their interpretation and are compatible with past tense, but a contrast similar to (123, 124) should be assumed.

- (138) ni $te_{[-PERFECT]} ar-u rasi-ku$

- (139) *ni $te_{[+PERFECT]} ar-u rasi-ku$

Then it will follow that *de aru* but not *da* can cooccur with the morphemes in this group.

- (140) de aru rasi-ku

(141) *da rasi-ku

Another point that makes matrix-*ka*-group different from *beki*-group is that it allows \emptyset . This will follow under the assumption that matrix-*ka*-group select a nominal in addition to selecting a clause (108c). (142) occurs not by contraction but underlyingly.

(142) tanaka ga gakusha rasi-ku
Tanaka NOM scholar seem-A

As for arguments for this claim, some constructions allow a nominal without the copula but does not allow a clause. For some of the morphemes that belong to matrix-*ka*-group, relevant constructions can be found. One construction is where a nominal and *rasi-ku* is used to mean ‘is typical of.’ This interpretation becomes salient in environments like (143). Even though *rasi-ku* can select a clause in a neutral context, clauses cannot appear in this construction (144, 145).

(143) tanaka wa gakusya rasi-i koto wo sita
Tanaka TOP scholar seem-NONPAST fact ACC did
‘Tanaka did something that is typical of a scholar.’

(144) *tanaka wa hasi-ru rasi-i koto wo sita
Tanaka TOP run-NONPAST seem-NONPAST fact ACC did
‘Tanaka did something typical of running.’

(145) *tanaka wa samu-i rasi-i koto wo sita
Tanaka TOP cold-NONPAST seem-NONPAST fact ACC did
‘Tanaka did something typical of being cold.’

In such situation, *de aru* cannot appear either (146).

(146) *tanaka wa gakusya de ar-u rasi-i koto wo si-ta
Tanaka TOP scholar DE be-NONPAST seem-NONPAST fact ACC do-PAST
‘Tanaka did something typical of being a scholar.’

A different construction is relevant for *mita-ku* and *rasi-ku* (147). In this construction, *mita-ku* and *rasi-ku* modify the predicate. Again, this construction does not allow clauses (148, 149).

(147) tanaka wa gakusya mita-ku/rasi-ku benkyou si-ta
Tanaka TOP scholar like-A seem-A study do-PAST
‘Tanaka studied like a scholar.’

(148) *tanaka wa hasi-ru mita-ku/rasi-ku aru-i-ta
Tanaka TOP run-NONPAST like-A seem-A walk-ASP-PAST
'Tanaka walked as if he is running.'

(149) *tanaka wa samu-i mita-ku/rasi-ku hurue-te i-ta
Tanaka TOP cold-NONPAST like-A seem-A shiver-TE ASP-PAST
'Tanaka was shivering as if he was cold.'

In such situation, *de aru* cannot appear (150).

(150) *tanaka wa gakusya de ar-u mita-ku/rasi-ku benkyou si-ta
Tanaka TOP scholar DE be-NONPAST like-A seem-A study do-PAST
'Tanaka studied as if he is a scholar.'

(151) tanaka ga gakusya de ar-ou mono nara tondemonai koto ni nar-u
Tanaka NOM scholar DE be-YOU thing if ridiculus fact to become-NONPAST
'It would be ridiculous if Tanaka were a scholar.'

(152) *tanaka ga hasi-ru de ar-ou mono nara tondemonai koto ni
Tanaka NOM run-NONPAST DE be-YOU thing if ridiculus fact to
nar-u
become-NONPAST
'It would be ridiculous if Tanaka were running.'

(153) *tanaka ga samu-i de ar-ou mono nara tondemonai koto ni
Tanaka NOM cold-NONPAST DE be-YOU thing if ridiculus fact to
nar-u
become-NONPAST
'It would be ridiculous if Tanaka were cold.'

Again, *de aru* cannot appear after the nominal (154).

(154) *tanaka ga gakusya de ar-u de ar-ou mono nara tondemonai koto
Tanaka NOM scholar DE be-NONPAST DE be-YOU thing if ridiculus fact
ni nar-u
to become-NONPAST
'It would be ridiculous if Tanaka were a scholar.'

In the above, at least for some morphemes in the matrix-*ka*-group, it has been shown that there are constructions where they can select a nominal but not a clause. In that case, *de ar-u* cannot appear. This suggests that, in the cases referred to so far as \emptyset -form, the copula is

underlyingly absent and the relevant morpheme is selecting an NP. It still remains to be extensively shown that this is true for other morphemes in the group, but this is beyond the reach of the present work.

Although it is difficult to give environments where the embedded-*ka*-group does not allow a clause, we shall assume that these morphemes also allow NP complement, just by analogy from the morphemes in matrix-*ka*-group.

- (155) tanaka ga gakusya ne
Tanaka NOM scholar NE

‘Tanaka is a scholar, right?’

These morphemes, unlike the previous ones, do not seem to have any semantic restriction on their complements. They simply provide meta-linguistic information, or interrogative force. They should allow *-te*_[+PERFECT]. From this it follows that they can have both *de ar-u* and *da*.

- (156) tanaka ga gakusya ne
Tanaka NOM scholar NE

‘Tanaka is a scholar.’

- (157) tanaka ga gakusya de ar-u
Tanaka NOM scholar DE be-NONPAST

‘Tanaka is a scholar.’

Finally, let us go on to the *to*-group. These morphemes are either logical connectors, pleonastic morphemes, or they express at most meta-linguistic information. There is no clear reason to assume that they have semantic restriction on their complement. At the same time, there is no clear evidence that they select a nominal. This consideration gives us the two forms of the copula in (158, 159).

- (158) tanaka ga gakusya de ar-u to omo-u
Tanaka NOM scholar DE be-NONPAST C think-NONPAST

‘I think that Tanaka is a scholar.’

- (159) tanaka ga gakusya da to omo-u
Tanaka NOM scholar DA C think-NONPAST

‘I think that Tanaka is a scholar.’

Table (160) gives a summary of the analysis provided in this section. The four classes of morphemes are characterized by two factors: (i) whether they underlyingly allow *-te*_[+PERFECT], and (ii) whether they can select an NP in addition to selecting a TP. These factors interact with the assumptions made in (108), and give the desired result.

argument for assuming both the relative clause and attributive structures in pronominal positions. However, that is not the case. Actually, *da* and *na* are complementary. First observe relative clauses in past ending. (164) is a relative clause with a noun, and (165) is its contracted form.

(164) gakusya de at-ta hito
 scholar DE be-PAST person
 ‘person who was a scholar’

(165) gakusya d-at-ta hito
 scholar DE-be-PAST person

(166, 167) are similar pairs with adjectival noun.

(166) sizuka de at-ta hito
 quiet DE be-PAST person
 ‘person who was quiet’

(167) sizuka d-at-ta hito
 quiet DE-be-PAST person

In a relative clause in the default form, the contracted ending *da* is not allowed. (169) shows this with noun in (168) and (171) with adjectival noun in (170).

(168) gakusya de ar-u hito
 scholar DE be-NONPAST person
 ‘person who is a scholar’

(169) *gakusya da hito
 scholar DA person

(170) sizuka de ar-u hito
 quiet DE be-NONPAST person
 ‘person who is quiet’

(171) *sizuka da hito
 quiet DA person

Here comes the use of the attributive form. *Na* appears just where *da* cannot, as if its purpose is to complement *da*. (172) is grammatical instead of (169) and (173) is so instead of (171). The reason (172) is not completely grammatical was already discussed.

(172)?? gakusya na hito
scholar NA person
‘person who is a scholar’

(173) sizuka na hito
quiet NA person
‘person who is quiet’

The complementarity of *da* and *na* suggests that they are allomorphs. There is diachronic evidence that the origin of the two forms are similar, and this also suggests that they may have the same underlying form in a synchronic derivation. If this is correct, then (172, 173) share the same underlying forms as (168, 170). This brings us to the conclusion that there is no need of assuming ad-nominal form as a distinct underlying form. *Na* is merely one of the forms that appear when the underlying form *ni te ar-u* (\rightarrow *de ar-u*) is contracted. Depending on the environment of contraction, the result becomes either *da* or *na*.

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