

Da and the Zero Form as the Two Contracted Forms of the Japanese Copula*

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This paper investigates copular constructions with nominal predicates in Japanese. Assuming the principles of Distributed Morphology (Halle and Marantz (1993)), it is claimed that the present tense form da is the morphologically contracted form of dearu, following Nishiyama (1999) and Watanabe (2011). Further, the zero form of the copula is taken into consideration, which previous researchers have not paid enough attention to. I propose that the zero form is another morphologically contracted form of dearu. The main finding of this paper is that a descriptive generalization is drawn by taking into account the zero form of the copula. Dearu can contract in all and only the contexts where both of the following conditions are met: (i) when it is used in indicative clauses, and (ii) when it is not used adnominally.

Keywords: copula, contraction, indicative, adnominal form

1. Introduction

This paper focuses on copular constructions with nominal predicates in Japanese. The Japanese copula has two present tense forms, *dearu* and *da*, as exemplified in (1)¹.

- (1) Taro-wa isya dearu/da.
Taro-Top doctor is

Analyses differ as to what the relation between the two forms is; some claim that the syntactic status is different between *dearu* and *da* (e.g. Kubo (1992)) and others claim that *da* is the contracted form of *dearu* (e.g. Nishiyama (1999)). The argument developed in this paper stands on the latter analysis. I give historical facts as evidence supporting the claim that *dearu* is the basic form.

Further, the zero form of the copula is taken into consideration, which previous researchers have not paid enough attention to. Following the Distributed Morphology framework (Halle and Marantz (1993)), I claim that the zero form is another morphologically contracted form of *dearu*. This is because a sentence without an overt copula has no difference in meaning from a sentence with an overt copula, as observed from the gloss of (2). This suggests that both sentences have the same syntactic structure.

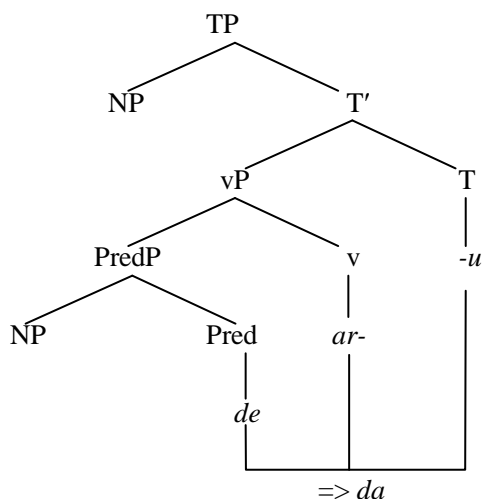
- (2) Taro-wa gakusei dearu/*da/∅ rasii/mitaيدا.
Taro-Top student is seem (Narahara (2002: 157))

My proposal is that the realization of the zero form is constrained by morpho-phonological operations. *Da* has a structure as in (3), which is based on Nishiyama's (1999) and Watanabe's (2011) structures.

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¹ The abbreviations used in this paper are: Acc=Accusative, Excl=Exclamation, Gen=Genitive, Neg=Negation, Nom=Nominative, Q=Question Particle, Top=Topic, m=masculine, 3ms=third person masculine.

(3) *dearu* => *da*



The contraction to *da* is attributable to optional Fusion, as Nishiyama (1999) proposes. The item may be deleted after insertion due to a phonological operation. In this case, the copula is covert.

As we will see below, an empirically adequate generalization about the distribution of the contracted forms of the copula has never been provided in previous literature. The main finding of this paper is that an empirically adequate descriptive generalization is drawn by taking into account the zero form of the copula. *Dearu* can contract in all and only the contexts where both of the following conditions are met: (i) when it is used in indicative clauses, and (ii) when it is not used adnominally.

The organization of the paper is as follows. In section 2, the basic data of the distribution of *dearu* and *da* in various environments are presented. The morphosyntactic status of *dearu* and *da* is examined in section 3. First, previous studies are reviewed. Then, following Nishiyama (1999) and Watanabe (2011), I claim that *da* is the morphologically contracted form of *dearu*. I also propose that the zero form is another morphologically contracted form of the copula. In section 4, the data presented in section 2 are further classified and a descriptive generalization about the environments where *dearu* can contract is given. In section 5, I discuss the generalization given in section 4 and investigate the morphological make-up of *dearu* and *da*. In addition, problems are briefly described which cannot be explained by the proposal put forth in this paper. Section 6 concludes the paper.

2. The Distribution of *Dearu* and *Da*

2.1 The Basic Facts Concerning *Dearu* and *Da*

Dearu and *da* appear in various environments. They attach to NPs, APs, and PPs as illustrated in (4).

- (4) a. Taro-wa isya dearu/da. (NP)
 Taro-Top doctor is
 b. Taro-wa siawase dearu/da. (AP)
 Taro-Top happy is
 c. Kono okurimono-wa Hanako-kara dearu/da. (PP)
 this present-Top Hanako-from is
 ‘This present is from Hanako.’

In this paper, I concentrate on sentences where the copula attaches to NPs.²

² Although adjectives are not under consideration here, *da* after nominal adjectival predicates behaves in the same way

Dearu and *da* also have past tense forms: *deatta* and *datta* respectively. The main concern in this paper is the behavior of the copula in the present tense, but the past tense forms are taken into account in section 5.2.

Dearu appears in any type of clause. It can appear in main clauses and subordinate clauses. Among main clauses, *dearu* can appear in declarative sentences, interrogative sentences, and sentences with modals.³ Among subordinate clauses, it can appear in declarative clauses, interrogative clauses, relative clauses, comparative clauses, and adverbial clauses. *Da* can appear in some of these environments, but its distribution cannot be explained only by relating it to the clause type of the environment, as we see in the next section.

2.2 The Distribution of *Dearu* and *Da*

In this section, we see the distribution of *dearu* and *da* in various environments. The environments are divided into three groups: (i) where both *dearu* and *da* are allowed, (ii) where only *dearu* is allowed, and (iii) where only *da* is allowed. The specific environments are listed below.

(i) Environments where both *dearu* and *da* are allowed are: declarative sentences (5), sentences with a modal *sooda* ‘I heard that’ (6), subordinate declarative clauses with the complementizer *to* (7), conditional clauses with *to* ‘if’ (8), subordinate interrogative clauses (9), and adverbial clauses with *kara* ‘because’ (10).

(5) Taro-wa gakusei dearu/da.

Taro-Top student is
‘Taro is a student.’

(6) Taro-wa gakusei dearu/da sooda.

Taro-Top student is I.heard.that
‘I heard that Taro is a student.’

(7) Taro-ga doroboo dearu/da to sinziru riyuu-ga aru.

Taro-Nom robber is C believe reason-Nom is
‘There is a reason to believe that Taro is a robber.’

(8) Taro-ga doroboo dearu/da to Hanako-ga kanasimu daroo.

Taro-Nom robber is if Hanako-Nom feel.sad I.think
‘If Taro is a robber Hanako will feel sad.’

(9) a. Taro-ga gakusei dearu/da ka Hanako-ni tazuneta.

Taro-Nom student is Q Hanako-to asked

b. Taro-ga gakusei dearu/?da kadooka Hanako-ni tazuneta.⁴

Taro-Nom student is whether Hanako-to asked

‘I asked Hanako whether Taro is a student.’

c. Dare-ga gakusei dearu/da ka wakaranai.

Who-Nom student is Q don’t.know

‘I don’t know who is a student.’

as *da* after nominal predicates in the environments examined in section 2.2.

³ In this paper, I define a modal as a functional category which expresses the mental attitude of the speaker, following Moriwaka (2009). With this definition, elements such as sentence-final particles, question particles, and honorifics are classified as modals.

⁴ Although Kubo (1992: 208) judges (i) as unacceptable, I (and some other Japanese native speakers) feel that it is not so bad.

(i)*Taro-wa Hanako-ga bengoshi da kadouka tazune-ta.

Taro-Top Hanako-Nom lawyer is whether ask-past

‘Taro asked whether Hanako is a lawyer or not.’

Since the sentence is not completely acceptable, I have put a ‘?’ on (9b).

- (10) Taro-ga gakusei dearu/da kara, gakuhi-ga kakaru.
 Taro-Nom student is because school.fee-Nom cost
 ‘(I) have to pay school fees because Taro is a student.’
- (ii) Environments where only *dearu* is allowed are: main interrogative clauses (11), main clauses with modals other than *sooda* ‘I heard that’ (12), subordinate declarative clauses with *koto* (13), subordinate declarative clauses with *yoo(-ni)* (14), conditional clauses with *nara* ‘if’ (15), relative clauses (16), cleft constructions (17), *no da* constructions (18), comparative clauses (19), and adverbial clauses with *node* ‘because’ (20).
- (11) Dare-ga gakusei ??dearu/*da ka?⁵
 who-Nom student is Q
 ‘Who is a student?’
- (12) a. Taro-wa gakusei deari/*da uru.
 Taro-Top student is could
 b. Taro-wa gakusei deari/*da tai.⁶
 Taro-Top student is want.to
 c. Taro-wa gakusei dearu/*da bekida.
 Taro-Top student is should
 d. Taro-wa gakusei de(-wa-)aru/*da mai
 Taro-Top student is won’t.be
 e. Taro-wa gakusei dearu/*da yooda.
 Taro-Top student is seem
 f. Taro-wa gakusei dearu/*da rasii/mitaida.
 Taro-Top student is seem
 g. Taro-wa gakusei dearu/*da kamosirenai
 Taro-Top student is may
 h. Taro-wa gakusei dearu/*da daroo.⁷
 Taro-Top student is I.think
- (13) Taro-ga gakusei dearu/*da koto-o wasureta/nozonda.
 Taro-Nom student is C-Acc forgot/wished
 ‘I forgot/wished that Taro is a student.’
- (14) Taro-ni gakusei dearu/*da yoo(-ni) meizita.
 Taro-to student is C ordered
 ‘I ordered Taro to be a student.’
- (15) Taro-ga doroboo dearu/*da nara, Hanako-wa kanasimu daroo.
 Taro-Nom robber is if Hanako-Top be.sad I.think
 ‘If Taro is a robber Hanako will feel sad.’
- (16) Titioya-ga isya dearu/*da gakusei-ga soko-ni iru.
 father-Nom doctor is student-Nom there-at is
 ‘A student whose father is a doctor is there.’

⁵ Somehow, using the question particle *ka* at the end of matrix interrogative clauses does not sound perfect. The question particle has other forms and the distribution is complicated, so I tentatively put main interrogative clauses aside and focus on the problem in section 5.3.1.

⁶ As can be seen from the form of *dearu* in (12a, b), the verb which appears in sentences with the modals *uru* ‘could’ and *tai* ‘want to’ takes the adverbial form (*renyookei*). *Da* does not have an adverbial form, so this possibly is the reason why *da* cannot appear with *uru* ‘could’ and *tai* ‘want to.’ I do not take *uru* ‘could’ and *tai* ‘want to’ into account in the subsequent sections.

⁷ The form *dearu-daroo* can be replaced with *dear-oo*, which may be the morphological counterpart of *daroo* if *daroo* is segmented as *dar-oo*.

- (17) Taro-ga gakusei dearu/*da no-wa kyuzitu dake da.
 Taro-Nom student is C-Top holidays only is
 ‘It is only on holidays when Taro is a student.’
- (18) Taro-ga gakusei dearu/*da no da.
 Taro-Nom student is no is
 ‘It is Taro who is a student.’
- (19) Taro-ga kagakusya dearu/*da yori Hanako-wa suugakusya da.
 Taro-Nom scientist is than Hanako-Top mathematician is
 ‘Hanako is more a mathematician than Taro is a scientist.’
- (20) Taro-ga gakusei dearu/*da node, gakuhi-ga kakaru.
 Taro-Nom student is because school.fees-Nom cost
 ‘(I) have to pay school fees because Taro is a student.’

(iii) Environments where only *da* is allowed are: main clauses with sentence-final particles (21).

- (21) a. Kare-wa syusyoo ??dearu/da zo.⁸
 he-Top prime minister is Excl
 b. Kare-wa syusyoo ??dearu/da yo.
 c. Kare-wa tensai ??dearu/da ne.
 he-Top genius is Excl
 d. Kare-wa tensai ??dearu/da na.

The forms *dearu/da* can be absent in some of the environments listed above. Among the environments where both *dearu* and *da* are allowed, *dearu/da* can be absent in main clauses (22), subordinate declarative clauses with the complementizer *to* (23), and subordinate interrogative clauses (24).

- (22) Are-wa tosyokan dearu/da/∅. (Narahara (2002: 11))
- (23) Taro-ga/o doroboo dearu/da/∅ to sinziru riyuu-ga aru.
- (24) a. Taro-ga gakusei dearu/da/∅ ka Hanako-ni tazuneta.
 b. Taro-ga gakusei dearu/?da/∅ ka dooka Hanako-ni tazuneta.
 c. Dare-ga gakusei dearu/da/∅ ka wakaranai. (Narahara (2002: 169))

Among the environments where only *dearu* is allowed, *dearu/da* can be absent in sentences with modals such as *rasii/mitaida* ‘seem’ (25a), *kamosirenai* ‘maybe’ (25b), *daroo* ‘I think’ (25c), and in conditional clauses with *nara* ‘if’ (26).

- (25) a. Taro-wa gakusei dearu/*da/∅ rasii/mitaida. (Narahara (2002: 175))
 b. Taro-wa gakusei dearu/*da/∅ kamosirenai. (Narahara (2002: 175))
 c. Taro-wa gakusei dearu/*da/∅ daroo.⁹
- (26) Taro-ga doroboo dearu/*da/∅ nara, Hanako-wa kanasimu daroo.¹⁰

⁸ Although the sentences with *dearu* are not completely unacceptable, they are stylistically odd and are not spoken in daily conversation.

⁹ Inoue (2007) claims that *daroo* ‘I think’ is made up of two modals, *(no)da + roo*. If this is on the right track, apparently two *da*’s are adjacent and it is reasonable that *da* cannot appear in sentences with *daroo* ‘I think,’ since if *da* is phonetically realized, there would be a sequence of the same elements (cf. Obligatory Contour Principle, see Leben (1973), Goldsmith (1976), McCarthy (1986) among others). This may be an independent reason why *da* cannot appear in sentences with the modal *daroo* ‘I think’.

¹⁰ It is possible to explain on independent grounds the reason why *da* cannot appear in adverbial clauses with *nara* ‘if.’ *Nara* ‘if’ consists of two morphemes, *na* and *ra*. One piece of evidence supporting this is that *ra* is a morpheme present

Among the sentence-final particles with which *da* is allowed but *dearu* is not, *dearu/da* can be absent with *yo* and *ne* as illustrated in (27).

- (27) a. Kare-wa syusyoo ??dearu/da/∅ yo.
 b. Kare-wa tensai ??dearu/da/∅ ne.¹¹

As observed from the data, *dearu* can appear in almost all of the environments. In contrast, the distribution of *da* is restricted. It cannot be explained only by relating it to the clause type of the environment it occurs in, however, because *da* can appear in any type of clause. Then, how can we account for the distribution of *da*? Before we make a more detailed classification of the data in section 4, I review previous works and claim that *da* is the morphologically contracted form of *dearu* in the next section.

3. The Morphosyntactic Status of *Dearu*, *Da* and the Zero Form

In this section I discuss the relation between *dearu* and *da*. First previous studies concerning the nature of the copula are reviewed. Then I claim that *da* is the morphologically contracted form of *dearu*, giving historical facts as supporting evidence. My main proposal is that the zero form, which exists in the environments where the copula can be absent, is another morphologically contracted form of *dearu*.

3.1 Previous Studies

Nishiyama (1999) examines the copula which attaches to adjectival predicates. He follows Nakayama (1988) and Urushibara (1993) and assumes that *da* is the morphologically contracted form of *dearu*. As a piece of evidence supporting his claim, he gives the fact that the contraction cannot apply when there is an element between *de* and *aru* as in (28).

- (28) Yoru-ga sizuka-de-mo-aru/*da-mo (aru).
 night-Nom quiet-de-even-aru/da-even
 ‘The night is even quiet.’

(Nishiyama (1999: 186))

in another item introducing a conditional clause, *tara* ‘if.’ Examples of *tara* ‘if’ are in (i).

- (i) a. Taro-ga doroboo dat-tara, Hanako-wa kanasimu daroo.
 Taro-Nom robber was-if Hanako-Top be.sad I.think
 ‘If Taro is a robber, Hanako would be sad.’
 b. Taro-ga ki-tara, osie-tekudasai.
 Taro-Nom came-if tell-please
 ‘If Taro comes, please tell me.’
 c. Taro-ga yasakiat-tara, Hanako-wa yorokobu daroo.
 Taro-Nom was.kind-if Hanako-Top be.happy I.think
 ‘If Taro is kind, Hanako would be happy.’

Since *tara* ‘if’ obviously consists of *ta* (the tense morpheme) and *ra*, *ra* could naturally be analyzed as an independent morpheme, possibly a morpheme with a conditional meaning. If so, then what about *na*? *Na* seems to be the adnominal form of *da* given the fact that *da* cannot appear in sentences with *nara* ‘if’ not only when it is attached to an NP but also when it is attached to a nominal adjective as in (ii).

- (ii) Yoru-ga sizuka-nara, yoku nemur-eru.
 night-Nom quiet-if well sleep-can
 ‘If it is quiet during the night, I can sleep well.’

If *na* is the adnominal form of *da*, we can explain the fact that *da* cannot appear before *nara* by the same reasoning as the discussion in note 9. A sequence of the same elements is prohibited. However, a problem arises as to why the adnominal form *na* can appear in contexts where there is apparently no nominal element after it. It may be possible to posit a null nominal element between *na* and *ra*, for example *no*, but I leave the problem open for now.

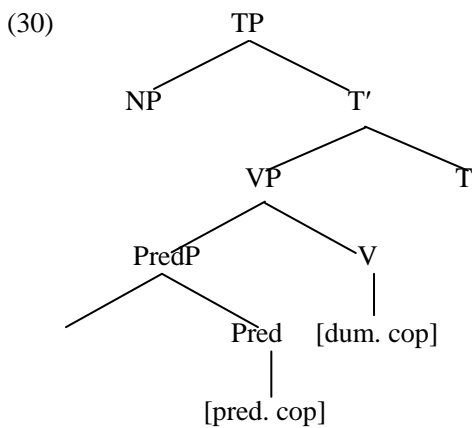
¹¹ As Okutsu (1978) and Narahara (2002) (among others) note, when the copula is absent before particles such as *yo* and *ne*, the sentence sounds feminine. This is not the case when the copula is present.

Nishiyama (1999) proposes that *de*, which is required in secondary predicate constructions in (29), is the semantically contentful copula (the ‘predicative copula’) while *ar-* is the semantically vacuous copula (the ‘dummy copula’).

(29) John-ga sakana-o hadaka-de tabeta.
 John-Nom fish-Acc naked-*de* ate
 ‘John ate the fish naked.’

(Nishiyama (1999: 188))

According to Nishiyama (1999), the predicative copula *de* is the Pred head in the sense of Bowers (1993) and the dummy copula *ar-* projects VP selected by T. The structure which he proposes is in (30).

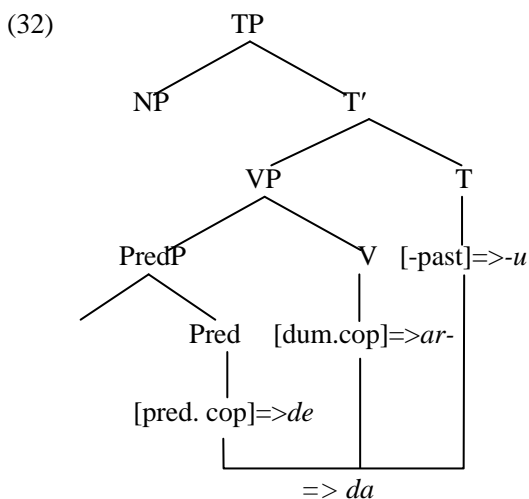


In the framework of Distributed Morphology, Nishiyama (1999) gives the following phonological insertion rules for the realization of the predicative copula, the dummy copula, and Tense.

- (31) a. [pred.cop, dum.cop, -past] ⇔ /da/
 b. [pred.cop] ⇔ /de/
 c. [dum.cop] ⇔ /ar/
 d. [-past] ⇔ /u/ / V_

(Nishiyama (1999: 197))

From (31b-d), the structure in (30) is realized as *dearu* in the present tense. Nishiyama (1999) claims that the contraction of *dearu* to *da* is due to Fusion that is applied optionally and gives the rule (31a) for the realization of the contraction. When the rules (31a-d) are applied to the structure (30), the result is as follows:



Nishiyama (1999) claims that Fusion cannot apply when there is an intervening element between *de* and *aru*. According to him, this characteristic of Fusion gives explanation for the fact that *da* cannot appear in (28).

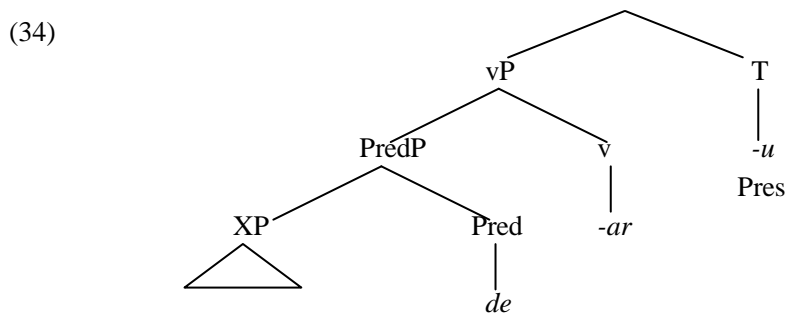
If we adopt Nishiyama's (1999) account, predictions would be made that the meaning of *dearu* and *da* would be the same and that the contraction can always apply when there is no intervening element between *de* and *aru*. The first prediction is borne out because there is basically no difference in meaning between the two forms. However, the second prediction is not true. We have seen in section 2 that there are many environments where *da* cannot appear even if there is no intervening element between *de* and *aru*. For example, in main clauses with modals other than *sooda* 'I heard that' (12), relative clauses (16), and adverbial clauses with *node* 'because' (20), *da* cannot appear even if *de* and *aru* are adjacent. Nishiyama (1999: 187) mentions an example (33) in which *da* cannot appear even if there is no intervening element between *de* and *aru*. He notes a possibility that this is a complex NP with an appositive clause (see his note 9).

- (33) Yoru-wa sizuka-*da/dearu beki-da.
 night-Top quiet-be should
 'The night should be quiet.'

(Nishiyama (1999: 187))

However, we cannot explain all the other examples in the same way. Although I agree with Nishiyama (1999) that *da* is the morphologically contracted form of *dearu*, the environments where the contraction can apply are restricted by more than just adjacency. This problem is dealt with in section 4.

Watanabe (2011) modifies Nishiyama's (1999) structure and uses vP instead of VP. The revised structure he proposes is in (34).



(Watanabe (2011: 10))

I adopt Watanabe's (2011) argument and use vP in the structure I give for *dearu* in section 3.3.

3.2 *Da as the Morphologically Contracted Form of Dearu*

3.2.1 *Dearu as the Basic Form*

Dearu has a wider distribution than *da*, as observed from the data presented in section 2. Furthermore, since the word order does not change and there is basically no difference in meaning between the two forms, there is no evidence that the difference between the two forms is syntactic. Taking the assumption that the derived form cannot appear where the basic form cannot appear, I claim that *dearu* is the basic form and that *da* is the contracted form of *dearu*.¹² Assuming the principles of Distributed Morphology (Halle and Marantz (1993)), I also claim that the difference between the two forms is morphological, following Nishiyama (1999) and Watanabe (2011).

¹² The behavior of *dearu/da* with sentence-final particles goes against the prediction that the distribution of *dearu* should be wider than that of *da*, if *dearu* is the basic form. In most constructions the prediction is correct, so something special must be taking place in sentences with sentence-final particles. I tentatively put this construction aside and exclude it in the subsequent sections. I discuss the problem briefly in section 5.3.2.

One may alternatively insist that *da* is the basic form because it is possible to analyze *dearu* as *de* (as the adverbial form of *da*) + *aru* (ordinary stative verb). However, as I have noted above, *da* has a narrower distribution than *dearu*. Under the assumption that the derived form cannot appear where the basic form cannot appear, it is unlikely that *da* is the basic form. The crucial fact is provided from the environments where the copula is clearly in its end form (*syuusikei*). In such environments, the copula is neither used adnominally nor adverbially so *da* should be able to appear if it is the basic form.¹³ Significantly, *da* is not allowed in such environments, for example, in sentences with modals such as *beki* ‘should’, *mai* ‘won’t be’, *rasii/mitaida* ‘seem’, *daroo* ‘I think’, and *kamosirenai* ‘maybe’ (12). If *da* is the basic form and *dearu* is derived from *da*, this behavior of *da* is unexpected. I thus conclude that *dearu* is the basic form and *da* is derived from *dearu*.

3.2.2 The Historical Facts

Pieces of evidence supporting the view that *dearu* is the basic form come from historical facts. For one thing, when we compare the earliest examples of *dearu* and *da* in *Syoogakukan Nihon Kokugo Daiziten* (Syoogakukan Japanese Dictionary), the time when *dearu* first appeared in written form (before the 13th century as in (35a)) is earlier than that of *da* (1473 as in (35b)).

- (35) a. Wagoze-wa imayoo-wa zyoozu-teari-keru yo.¹⁴
 you-Top balladry-Top good-is-past Excl
 ‘You were very good at balladry.’ (Heike Monogatari, Syoogakukan Nihon Kokugo Daiziten)
- b. Zaketu-no titi azi-ni-mo nara-nu toki da zo.
 mixed-blood-Gen milk taste-to-even become-Neg time is Excl
 ‘The milk of a mixed-blood does not even taste.’
 (Ninden Ganmoku Syoo, Syoogakukan Nihon Kokugo Daiziten)

For another, as Narahara (2002) notes, *dearu* historically went through phonetic erosion and contraction in (36) on the way to *da*.

- (36) *de aru* → *de ar* → *dea* → *da* (Narahara (2002: 142))

The form *dea* appears in classic writings as in (37). It has a meaning of assertion and is used at the end of a sentence.

- (37) Bonnin-yori-mo dyuuzai-ni husyoozuru koto dea.
 Ordinary.people-than-even heavy.sentence-to given that *dea*
 ‘(He) would be given a heavier sentence than ordinary people.’
 (Isoho Monogatari, Syoogakukan Nihon Kokugo Daiziten)

Dea developed into *da* (mainly used in the Eastern Japan) and into *zya* (mainly used in the Western Japan). *Zya* is in use in classic writing as in (38). The use and the meaning of *zya* is the same as that of *dea*.

¹³ *Da* cannot be used adnominally as it is (just like in adverbial contexts; see note 6). It must be in its adnominal form *na*. *Da* cannot appear before nominal elements, as in the examples of subordinate declarative clauses with *koto* (13), *yoo(-ni)* (14), and relative clauses (16). Considering the fact that *da* has an adnominal form, it is unsurprising that *da* cannot appear in these environments. The fact that *da* cannot appear before nominal elements provides no evidence for the claim that *da* is not the basic form.

¹⁴ In this example *dearu* is in its adverbial form and the first consonant is voiceless, resulting in the form *teari*.

(38) Nikkui hito zya zo.
 hateful person zya Excl
 ‘What a hateful person (he) is!’

(*Kansyo Retuden, Syoogakukan Nihon Kokugo Daiziten*)

To summarize, these facts show that *dearu* emerged before *da* and give support to the view that *dearu* is the basic form of the copula.

3.3 The Two Contracted Forms: Da and the Zero Form

The main concern in this section is the environments where the copula can be absent as in (39).

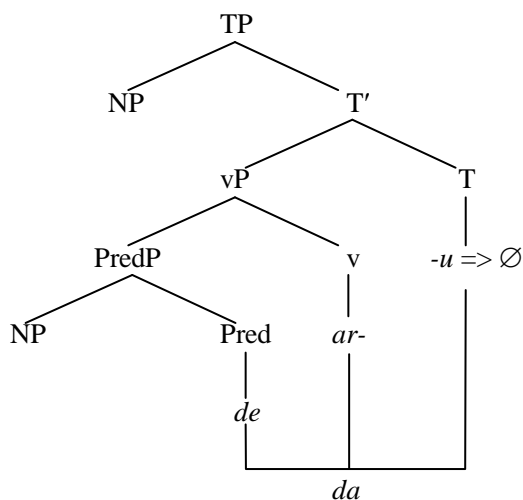
(39) Taro-wa gakusei dearu/*da/∅ rasii/mitaida.
 Taro-Top student is seem

(Narahara (2002: 175))

Importantly, a sentence without an overt copula has no difference in meaning with a sentence with an overt copula, as observed from the gloss for (39). This suggests that both sentences have the same syntactic structure.

I thus propose that the zero form of the copula is another morphologically contracted form of *dearu*, in addition to *da*. The structure of the sentences with *da*, which is based on Nishiyama’s (1999) and Watanabe’s (2011) structures, is presented below.¹⁵

(40) *dearu* => *da*



I adopt the idea that the contraction of *dearu* to *da* is due to optional Fusion, which Nishiyama (1999) proposes.

¹⁵ An alternative to the proposal that the zero form of the copula is the contracted form of *dearu* is to analyze sentences with the zero form of the copula as small clauses in Japanese, as some researchers do for languages such as Arabic and Hebrew (cf. Rapoport (1987)). However, environments where the zero form of the copula can appear do not manifest the characteristics of small clauses, which do not contain a temporal projection. That is, they can contain temporal adverbs such as *ima* ‘now,’ as in (i).

- (i) a. ?Are-wa ima tosyokan ∅. (main clause)
 that-Top now library is
- b. ?Taro-ga ima gakusei ∅ to sinziru riyuu-ga aru. (subordinate clause with complementizer *to*)
- c. Taro-ga ima gakusei ∅ ka/ka dooka Hanako-ni tazuneta. (subordinate interrogative clause)
- d. Dare-ga ima gakusei ∅ ka wakaranai.
- e. Taro-wa ima gakusei ∅ rasii/mitaida. (sentence with a modal)
- f. Taro-ga ima doroboo ∅ nara, Hanako-wa kanasimu daroo. (conditional clause with *nara* ‘if’)

For this reason, I reject the possibility of these environments being small clauses.

The item may be deleted after insertion due to a phonological operation. In this case, the copula is covert.

Claiming that the zero form is a morphologically contracted form of the copula has a significant consequence. As we have seen in section 3.1, the generalization previously given is empirically inadequate. Taking into account the zero form of the copula enables us to draw an empirically adequate descriptive generalization about the distribution of the contracted forms of the copula. The descriptive generalization is presented in the next section.

4. The Descriptive Generalization about the Contracted Forms of the Copula

To draw a generalization about the environment where *dearu* can be contracted, the data in section 2 are classified in two ways: (i) when the predicate is an adjective, whether the adjectival predicate takes the form *-i* or *-kuaru*, and (ii) whether *dearu/da* can be replaced with *na*. Each of these is discussed in detail in sections 4.1 and 4.2. In section 4.3, the data in sections 4.1 and 4.2 are put into a table and the descriptive generalization drawn from the data is presented.

4.1 *-I* and *-Kuaru*

4.1.1 The Data

The set of data provided in section 2 is put into two groups: when the predicate is an adjective, (i) the adjectival predicate takes the form *-kuaru* or (ii) the adjectival predicate takes the form *-i*.

(i) Contexts where the adjectival predicate takes the form *-kuaru* are: main clauses with modals such as *beki* ‘should’ (41a), *mai* ‘won’t be’ (41b), subordinate clauses with *koto* when the matrix verb is a wishing verb (42), and subordinate clauses with *yoo(-ni)* (43).

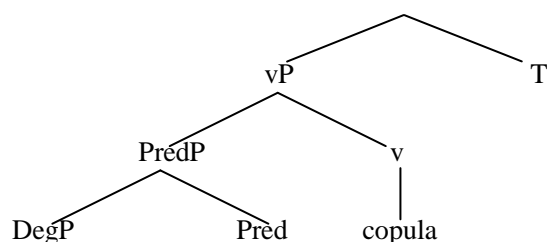
- (41) a. Taro-wa yarasikuaru bekida.
Taro-Top kind should
b. Taro-wa yarasiku(-wa-)jaru mai
Taro-Top kind won’t.be
- (42) Taro-ga yarasikuaru koto-o Hanako-wa nozonda.
Taro-Nom kind C-Acc Hanako-Top wished
‘Hanako wished that Taro were kind.’
- (43) Taro-ni yarasikuaru yoo(-ni) meizita.
Taro-to kind C ordered
‘I ordered Taro to be kind.’

(ii) In all other environments, the adjectival predicate takes the form *-i*.

4.1.2 *-I/-Kuaru* as Indicative/Subjunctive

Watanabe (2011) gives the common structure (44), which is identical to the one of *dearu* introduced in section 3.1, for the *-i* and *-kuaru* forms of adjectival predicates.

(44)



(Watanabe (2011: 12))

In the framework of Distributed Morphology, Watanabe (2011) attributes the alternation between the two forms to the morpho-syntactically conditioned choice of vocabulary items. According to his vocabulary insertion rules, the structure (44) results in the form *-kuaru* when it is not in the environment [indicative, -past]. This implies that the *-kuaru* form of the adjective appears in subjunctive contexts. His analysis is based on his note that the modal meaning of *beki* ‘should,’ which takes the *-kuaru* form of the adjectival predicate, should be subjunctive. The data presented in section 4.1.1 support his analysis, since two out of three constructions in which the adjectival predicate takes the form *-kuaru* (excluding *beki* ‘should’) are claimed to be subjunctive on independent grounds. Watanabe (1996) claims that complement clauses with *koto* are subjunctive from their distributional similarity with French subjunctives, and Uchibori (2000) claims that complement clauses of *yoo(-ni)* are subjunctive.

Hence, in this paper I treat the *-i* and *-kuaru* forms of the adjective as indicating the indicative/subjunctive mood of the clause. Although I know of no study analyzing sentences with *mai* ‘won’t be’ as subjunctive, they are alleged to be subjunctive. This is because *mai* ‘won’t be’ takes adjectival predicates with the form *-kuaru* and the modal meaning of *mai* ‘won’t be’ fits well with the claim that sentences with *mai* ‘won’t be’ are subjunctive.¹⁶

4.2 Na

4.2.1 The Data

Next the set of data presented in section 2 are classified in another way: (i) environments where *dearu/da* can be replaced with *na*, and (ii) environments where the replacement is impossible.

(i) The environments where *dearu/da* can be replaced with *na* are: sentences with the modal *yooda* ‘seem’ (45), relative clauses (46), subordinate clauses with *koto* (47), cleft constructions (48), *no da* constructions (49), comparative clauses (50), and adverbial clauses with *node* ‘because’ (51).

(45) ??Taro-wa gakusei na yooda.

Taro-Top student is seem

(46) ??Titioya-ga isya na gakusei-ga soko-ni iru.

father-Nom doctor is student-Nom there-at is

‘A student whose father is a doctor is there.’

(47) ??Taro-ga gakusei na koto-o wasureta/nozonda.

Taro-Nom student is C-Acc forgot/wished

‘I forgot/wished that Taro is/were a student.’

(48) Taro-ga gakusei na no-wa kyuzitu dake da.

Taro-Nom student is C-Top holidays only is

‘It is only on holidays when Taro is a student.’

(49) Taro-ga gakusei na no da.

Taro-Nom student is no is

‘It is Taro who is a student.’

¹⁶ The distinction between subjunctive and indicative corresponds to the distinction between deontic modals and epistemic modals. The meaning of deontic modals also fits well with the meaning of subjunctive clauses.

- (50) ?Taro-ga kagakusya na yori Hanako-wa suugakusya da.
 Taro-Nom scientist is than Hanako-Top mathematician is
 ‘Hanako is more a mathematician than Taro is a scientist.’
- (51) Taro-ga gakusei na node, gakuhi-ga kakaru.
 Taro-Nom student is because school.fee-Acc cost
 ‘(I) have to pay school fees because Taro is a student.’

In this paper I regard sentences with the modal *yooda* ‘seem’ (45) and relative clauses (46) as environments where the zero form can appear but *da* cannot, although at first sight they seem to be environments where *dearu/da* can be replaced with *na*. Consider the examples in (52).

- (52) a. Taro-wa gakusei no yooda.
 Taro-Top student *no* seem
- b. Titioya-ga isya no gakusei-ga soko-ni iru.
 father-Nom doctor *no* student-Nom there-at is

In sentences with the modal *yooda* ‘seem’ (45) and in relative clauses (46), the sentence is degraded if *dearu* is replaced with *na*. This contrasts with replacing *dearu* with *no*, which yields a perfect sentence, as the examples in (52) show. They are analyzed as NP+the zero form copula+*no* (whatever its status is), represented as (53).

- (53) a. Taro-wa gakusei \emptyset no yooda.
 Taro-Top student is *no* seem
- b. Titioya-ga isya \emptyset no gakusei-ga soko-ni iru.
 father-Nom doctor is *no* student-Nom there-at is

(ii) In all other environments, the replacement is impossible.

4.2.2 *Na* as the Adnominal Form

The simplest account of *na* is that, like the *na* form of *dearu* with nominal adjectives in adnominal uses, the *na* form of the copula with nominal predicates is the adnominal form.^{17,18} In fact, in the contexts in which *dearu* can be replaced with *na*, a nominal element follows the copula. *Koto* in (47) and *no*, whatever its status is, in cleft constructions (48), *no da* constructions (49), and in *node* ‘because’ (51), can all be analyzed as a nominal element. In comparatives, although the sentence with *na* is degraded, the sentence improves when *no* is inserted after *na*, as in (54).

- (54) Taro-ga kagakusya dearu/na no yori Hanako-wa suugakusya da.
 Taro-Nom scientist is *no* than Hanako-Top mathematician is
 ‘Hanako is more a mathematician than Taro is a scientist.’

In this paper I treat the *na* form in sentences with nominal predicates as the adnominal form of the copula.

¹⁷ However, Whitman (1981) and Baker (2003) (among others) propose that prenominal APs are, even though they appear to be attributive, a type of relative clauses.

¹⁸ Hiraiwa (2001), who investigates Nominative-Genitive Conversion, notes that the copula must take the *na* form (although his observation is not restricted to nominal predicates). Nishiyama (1999) mentions that the copula attached on nominal predicates takes the *no* form in relative clauses but says nothing about the *na* form of the copula in sentences with nominal predicates.

4.3 The Descriptive Generalization

The data from sections 4.1.1 and 4.2.1 are summarized in Table 1.

Table 1. The distribution of *da* and the zero form and the result of the two tests

	<i>da</i>	∅	<i>-i</i> or <i>-kuaru</i>	<i>da/dearu</i> → <i>na</i>
Main clauses	OK	OK	<i>-i</i>	*
Complement clauses+ <i>to</i>	OK	OK	<i>-i</i>	*
Subordinate interrogative clauses	OK	OK	<i>-i</i>	*
Conditional clauses+ <i>to</i> ‘if’	OK	*	<i>-i</i>	*
<i>sooda</i> ‘I heard that’	OK	*	<i>-i</i>	*
Adverbial clauses+ <i>kara</i> ‘because’	OK	*	<i>-i</i>	*
<i>rasii</i> ‘seem’	*	OK	<i>-i</i>	*
<i>mitaida</i> ‘seem’	*	OK	<i>-i</i>	*
<i>kamosirenai</i> ‘maybe’	*	OK	<i>-i</i>	*
<i>yooda</i> ‘seem’	*	OK	<i>-i</i>	*
<i>daroo</i> ‘I think’	*	OK	<i>-i</i>	*
Conditional clauses+ <i>nara</i> ‘if’	*	OK	<i>-i</i>	*
Relative clauses	*	OK	<i>-i</i>	*
<i>beki</i> ‘should’	*	*	<i>-kuaru</i>	*
<i>mai</i> ‘won’t be’	*	*	<i>-kuaru</i>	*
Subordinate clauses+ <i>koto</i> (wishing verb in main clause)	*	*	<i>-kuaru</i>	??
Subordinate clauses+ <i>yoo(-ni)</i>	*	*	<i>-kuaru</i>	*
Subordinate clauses+ <i>koto</i> (factive verb in main clause)	*	*	<i>-i</i>	??
Cleft constructions	*	*	<i>-i</i>	OK
<i>No da</i> constructions	*	*	<i>-i</i>	OK
Comparatives	*	*	<i>-i</i>	?
Adverbial clauses+ <i>node</i> ‘because’	*	*	<i>-i</i>	OK

The descriptive generalization drawn from the data is:

Dearu cannot be contracted in constructions (i) where adjectival predicates take the form *-kuaru*, i.e. when it is used in subjunctive clauses, or (ii) where *dearu* can be replaced with *na*, i.e. when *dearu* is used adnominally. We can paraphrase this into the following descriptive generalization:

(55) In the present tense, *dearu* can contract in all and only the contexts where both of the following conditions are met:

- (i) when it is used in indicative clauses, and
- (ii) when it is not used adnominally.¹⁹

5. Proposal

This section is composed of three subsections. In the first subsection it is claimed that the descriptive generalization given in section 4 can be related to the universal tendency of the copula to be absent in present indicative clauses. In section 5.2, I investigate the morphological make-up of *dearu* and *da*. Two environments

¹⁹ It is possible to analyze *na* as another contracted form which appears in adnominal contexts, formed from *da* by a phonological change from *d* to *n*, however.

excluded in the previous sections are examined in section 5.3.

5.1 The Copula in Other Languages

The descriptive generalization presented in section 4 is repeated below.

(56) In the present tense, *dearu* can contract in all and only the contexts where both of the following conditions are met:

- (i) when it is used in indicative clauses, and
- (ii) when it is not used adnominally.

The contexts where the conditions are met are reminiscent of the contexts where the copula can be absent in languages such as Russian, Arabic, and Hebrew. In these languages the copula is absent in the present tense. As observed from the examples (57)-(59) below, in the (a) sentences in the present tense the copula is absent while in the (b) sentences in the past tense the copula must be overt.

(57) Russian (Pustet (2003: 34-35))

a. Éto dom

This house

'This is a house.'

b. Éto by-l dom

This was.3ms house

(58) Arabic (Benmamoun (2000: 3))

a. Omar muǰallim

Omar teacher

'Omar is a teacher.'

b. Omar kan muǰallim

Omar was.3ms teacher

(59) Hebrew (Rapoport (1987: 30, 37))

a. Ha-yeled student

the-boy student

'The boy is a student.'

b. Ha-yeled haya student

the-boy was.m student

In subjunctive clauses the copula is overt (although it can take the past tense form as its morphological basis even in the present tense as in Russian). This means that the copula is absent in present indicative clauses. Given this match, I claim that the fact that *dearu* can be contracted (into the zero form, since in other languages only the zero form appears) in present indicative clauses is a manifestation of the universal tendency of the copula to be absent in present indicative clauses.²⁰

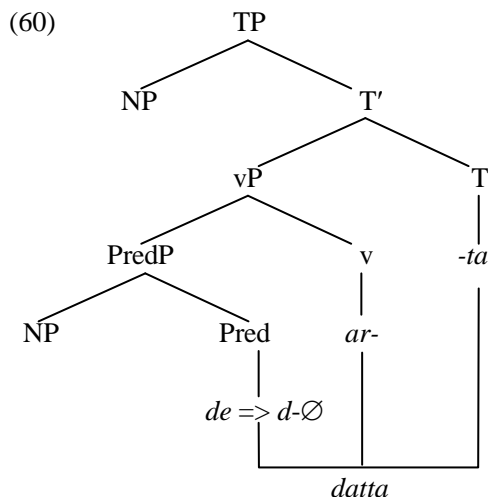
5.2 The Morphological Make-up of Dearu and Da

When we look at the morphological make-up of *da*, notice that although *da* is in the present tense, the present morpheme *-(r)u* which is attached on verbal stems in the present tense (e.g. *tabe-ru* 'eat', *kak-u* 'write') is absent.

²⁰ One possible explanation for this tendency is that the copula in present indicative clauses, where both tense and mood are in the most unmarked form, is carrying very little information and thus is easily dropped.

This characteristic can be clearly observed when we compare it with the past tense form of *da*, *datta*. Also, comparing *dearu* and *da* as well as the past forms *deatta* and *datta*, note that from both *dearu* and *deatta*, *-e* is dropped on the way to *da* and *datta*. The distribution of the past forms *deatta* and *datta* is investigated in this section. From the distribution, we conclude that the dropping of *-e* is a phonetic phenomenon triggered by the environment inside a word.

The past forms of *dearu* and *da* are *deatta* and *datta*, respectively. In a way similar to the present counterpart, the morphological make-up of *datta* is analyzed as follows.



Datta is different from *da* only in that the tense morpheme is overt. We may expect that the distribution of *deatta* and *datta* is the same as that of *dearu* and *da*.

However, the distribution of *deatta* and *datta* is simpler than what we may expect. The past form cannot appear in sentences with modals such as *-beki* ‘should’ and *-mai* ‘won’t be,’ subordinate clauses with *koto* with “wishing verbs” in the main clause, subordinate clauses with *yoo(-ni)*, or conditional clauses with *to* ‘if,’ as in the examples below.²¹

- (61) *Taro-wa gakusei deatta/datta bekida.
 Taro-Top student was should
- (62) *Taro-wa gakusei deatta/datta mai.
 Taro-Top student was won't.be
- (63) *Taro-ga gakusei deatta/datta koto-o nozonda.
 Taro-Nom student was C-Acc wished
- (64) *Taro-ni gakusei deatta/datta yoo(-ni) meizita.
 Taro-to student was C ordered
- (65) *Taro-ga doroboo deatta/datta to Hanako-ga kanasimu/kanasinda daroo.
 Taro-Nom robber was if Hanako-Nom feel/felt.sad I think
 (Intended to mean) ‘If Taro was a robber Hanako will feel/would have felt sad.’

Both *deatta* and *datta* can appear in all other contexts, although many examples with *deatta* are degraded. Some examples are given below.

²¹ The acceptability of *deatta/datta* does not change according to the tense of the matrix clause in most environments, as can be seen from the examples.

- (66) Taro-wa gakusei deatta/datta.
Taro-Top student was
- (67) Taro-ga doroboo deatta/datta to sinziru riyuu-ga aru/atta.
Taro-Nom robber was C believe reason-Nom is/was
- (68) Taro-ga gakusei deatta/datta ka Hanako-ni tazuneru/tazuneta.
Taro-Nom student was Q Hanako-to ask/asked
- (69) Taro-wa gakusei deatta/datta yooda.
Taro-Top student was seem
- (70) Taro-ga doroboo deatta/datta nara, Hanako-wa kanasimu/kanasinda daroo.
Taro-Nom robber was if Hanako-Top be/was.sad I.think
'If Taro is a robber, Hanako would be sad.'
'If Taro was/had been a robber, Hanako would have been sad.'

As we have seen in section 4.1.2, the environments where the past forms are completely excluded are subjunctive (except for conditional clauses with *to* 'if'). We can account for the fact by claiming that the subjunctive meaning and the conditional meaning are not consistent with the past tense, although the conditional clause with *nara* 'if' (70) remains an exception.²² The ungrammaticality of *deatta* and *datta* in these environments has nothing to do with the nature of the copula.

From the distribution, we observe that *datta* appears in all of the environments where *deatta* occurs, unlike its counterpart in the present tense. Since only *-e* is dropped when *deatta* becomes *datta*, this means that the dropping of *-e* can occur in any context. The dropping of *-e* can be analyzed as an optional phonetic phenomenon, in which *-e* is dropped because of the continuance of vowels, *-e* and the *a* of *ar-*. If this is so, the dropping of *-e* is a phenomenon triggered by the environment inside a word, not the environment outside. It is not constrained by the type of the sentence or the elements in the sentence. It would then be reasonable that this dropping can happen in all of the contexts above.

Here again historical fact supports my claim. Frellesvig (1995) reports that in Old Japanese 'hiatus was eliminated by eliding one of the vowels to signal unity of some prosodic domain' (p. 71) in morpheme boundaries. Frellesvig (1995) also cites Unger's (1975) claim that when there is a sequence of two vowels, V_1-V_2 , V_1 is regularly dropped and claims that the regular case of this kind of vowel elision is $\dots CV_1-V_2 \dots \Rightarrow \dots CV_2 \dots$. For example, *katuwo* 'bonito' is derived from *kata-uwo* 'hard + fish' by dropping *-a*. Summing up, in Old Japanese the continuance of two vowels was eliminated by eliding the first vowel. This historical fact gives support to the argument that the dropping of *-e* in *datta* is a phonetic phenomenon, triggered by the continuance of vowels.

Turning back to sentences with the present forms *dearu* and *da*, the dropping of *-e* occurs in all contexts, as it does with the past forms, since it is a phonetic phenomenon.²³ I propose that the narrow distribution of *da* is due

²² In some languages the past tense can appear in subjunctive clauses, for example Italian. However, it deserves attention that in such languages the temporal interpretation of the subjunctive clause is only a temporal agreement with the superordinate verbal form, not indicating a temporal relation between two events (cf. Giorgi (2009)). Thus, in the Italian example (i) temporal agreement is enforced between the verb in the subordinate subjunctive clause and the superordinate verb.

(i) a. Gianni crede che Maria sia/ *fosse incinta.

'Gianni believes that Maria is (PRES SUBJ)/ *was (PAST SUBJ) pregnant.'

b. Gianni credeva che Maria fosse/ *sia incinta.

'Gianni believed that Maria was (PAST SUBJ)/ *is (PRES SUBJ) pregnant.' (Giorgi (2009: 1842))

The interpretation of the sentence would be that the event of the subordinate clause is simultaneous with that of the main clause, as Giorgi (2009) notes. This means that the past form of the verb in subjunctive clauses does not indicate that the event of the subordinate clause is prior to the event of the main clause. The situation may be similar in adverbial clauses with *nara* 'if,' since the past tense form of the verb does not necessarily indicate that the event of the subordinate clause is prior to the event of the main clause. See the translation of the example (70). Although conditional clauses with *to* 'if' and *nara* 'if' are analyzed as indicative in this paper, they seem to have properties similar to subjunctive clauses.

²³ If this claim is on the right track, a prediction would be made that the form *daru* should be possible by dropping only

to the other dropped item, the tense morpheme, although I cannot give a satisfactory account to why the dropping of the tense morpheme causes the narrow distribution of *da*. I leave the problem for future research.

5.3 Remaining Problems

5.3.1 Main Interrogative Clauses

In the previous sections I have excluded main interrogative clauses because the situation in main interrogative clauses is complicated. The problem of main interrogative clauses is described in this section.

In main interrogative clauses the question particle *no* can be used instead of *ka*. The question particle can also be absent. Below is the distribution of *dearu/da/∅* in main interrogative clauses. The examples in (71) are *Wh*-questions and the examples in (72) are yes-no questions.

- (71) a. Dare-ga gakusei ??dearu/*da/??∅ ka?
 Who-Nom student is Q
 b. Dare-ga gakusei ?dearu/*da/*∅/na no?
 c. Dare-ga gakusei *dearu/da/∅ ∅?
- (72) a. Taro-ga gakusei ??dearu/*da/?∅ ka?²⁴
 b. Taro-ga gakusei ?dearu/*da/*∅/na no?
 c. Taro-ga gakusei *dearu/*da/∅ ∅?

In sentences with the question particle *ka* in (71a) and (72a), the sentence does not sound very good with any form of the copula, *dearu*, *da*, or the zero form. For some reason, matrix interrogative clauses with the question particle *ka* in the present tense are degraded, since the sentence is not perfect even with verbs other than the copula as in (73a) or with adjectives as in (73b).²⁵

-e from *dearu*. Here the process of derivation would be the same as *deatta* into *datta*. However, the form *daru* does not exist in Modern Japanese, as far as I know. I have no explanation for the impossibility of applying only the dropping of *-e* to *dearu*. For some reason, in the present tense, the dropping of *-e* can apply only when the dropping of the tense morpheme applies concomitantly.

²⁴ Narahara (2002) and Morikawa (2009) judge the zero form of the copula in main yes-no questions with the question particle *ka* as perfectly acceptable, but I feel that it is not perfect, although it is better than main *Wh*-questions with *ka*.

²⁵ The acceptance of main interrogative sentences is improved by inserting *no* after the verb. *No* can be freely inserted between *dearu* and the question particle *ka* in subordinate interrogative clauses as well, as illustrated in (i) and (ii) (*da* cannot appear before *no* as it is; it must take the form *na*).

- (i) Dare-ga gakusei dearu/*da/na no ka?
 who-Nom student is no Q
 ‘Who is a student?’
- (ii) a. Taro-ga gakusei dearu/*da/na no ka Hanako-ni tazuneta.
 Taro-Nom student is no Q Hanako-to asked
 b. Taro-ga gakusei dearu/*da/na no ka dooka Hanako-ni tazuneta.
 Taro-Nom student is no whether Hanako-to asked
 ‘I asked Hanako whether Taro is a student.’
 c. Dare-ga gakusei dearu/*da/na no ka wakaranai.
 Who-Nom student is no Q don’t.know
 ‘I don’t know who is a student.’

Furthermore, *no* can also be freely inserted between ordinary verbs and the question particle *ka* (iii)-(ix).

- (iii) Dare-ga gakkoo-ni kuru ??(no) ka?
 who-Nom school-to come no Q
 ‘Who is coming to school?’
- (ix) a. Taro-ga gakkoo-ni kuru (no) ka Hanako-ni tazuneta.
 Taro-Nom school-to come no Q Hanako-to asked
 b. Taro-ga gakkoo-ni kuru (no) ka dooka Hanako-ni tazuneta.
 Taro-Nom school-to come no whether Hanako-to asked

- (73) a. ??Dare-ga tabe-te-iru ka?
 Who-Nom eat-gerund-is Q
 ‘Who is eating?’
 b. ??Dare-ga yasasii ka?
 Who-Nom kind Q

The unacceptability of the sentences (71a) and (72a) thus cannot be attributed to *dearu/da* used in matrix interrogative clauses. Their degraded status is due to the question particle *ka* in matrix interrogative clauses in the present tense.

As for (71b) and (72b), the copula before the question particle *no* is used adnominally, since *da* has to be in its adnominal form. We have seen in section 4.2.2 that the form *na* appears before *no*, whatever its status is, so we can think that the main interrogative clauses with the question particle *no* is the same as the environments where *dearu* is used adnominally.

Da is fully acceptable only when the question particle is in the zero form, as in (71c). Carrying out the two tests in section 4 to classify the data, the adjectival predicate is in the form *-i* as in (74) and *da* cannot be replaced with *na* as in (75) in main interrogative clauses with the zero question particle.

- (74) Dare-ga yasasii Ø?
 who-Nom kind Q
 ‘Who is kind?’
 (75) *Dare-ga gakusei na Ø?
 who-Nom student is Q

Main interrogative clauses then are indicative clauses and the copula is not used adnominally. Given the descriptive generalization repeated below, it is natural that *da* can appear in main interrogative clauses with the zero question particle. In this respect, the behavior of main interrogative clauses with the zero question particle is the same as subordinate interrogative clauses.

- (56) In the present tense, *dearu* can contract in all and only the contexts where both of the following conditions are met:
- (iii) when it is used in indicative clauses, and
 - (iv) when it is not used adnominally.²⁶

However, when the question particle is in the zero form, *dearu* is not allowed as in (71c) and (72c), unlike subordinate interrogative clauses. The contraction of *dearu* seems to be obligatory. I have no evidence to explain this behavior of *dearu*, so I leave the issue open.

5.3.2 Sentences with Sentence-final Particles

Another problem left aside in the previous sections is the distribution of *dearu* and *da* in sentences with sentence-final particles. As we have seen in section 2.2, in main clauses with sentence-final particles only *da* is allowed as in (76).

‘I asked Hanako whether Taro would come to school.’

c. Dare-ga gakkoo-ni kuru (no) ka wakaranai.
 Who-Nom school-to come *no* Q don’t.know

²⁶ It is possible to analyze *na* as another contracted form which appears in adnominal contexts, formed from *da* by a phonological change from *d* to *n*, however.

- (76) a. Kare-wa syusyoo ??dearu/da zo.
 he-Top prime minister is Excl
 b. Kare-wa syusyoo ??dearu/da yo.
 c. Kare-wa tensai ??dearu/da ne.
 he-Top genius is Excl
 d. Kare-wa tensai ??dearu /da na.

As I have mentioned in note 12, this distribution of *dearu* and *da* apparently goes against the claim that *dearu* is the basic form and the prediction that *dearu* has a wider distribution than that of *da*. The two tests in section 4 show that the clause is indicative and the copula is not used adnominally. That is, the adjectival predicate takes the *-i* form (77) and *da* cannot be replaced with *na* (78).

- (77) a. Kare-wa yasasii zo.
 he-Top kind Excl
 b. Kare-wa yasasii yo.
 c. Kare-wa yasasii ne.
 d. Kare-wa yasasii na.
- (78) a. *Kare-wa syusyoo na zo.
 he-Top prime minister is Excl
 b. *Kare-wa syusyoo na yo.
 c. *Kare-wa tensai na ne.
 he-Top genius is Excl
 d. *Kare-wa tensai na na.

According to the generalization in (56), *dearu* can contract when it is in an indicative clause and it is not used adnominally. Then *dearu* can contract in sentences with sentence-final particles. The problem is that the contraction seems to be obligatory, in contrast to the contraction in other environments, which is always optional. One possible explanation is that *dearu* as a literary expression is incompatible with sentence-final particles, which are colloquial expressions. I leave this problem open for now.

6. Concluding Remarks

The topic of this paper is the contraction of *dearu*. Assuming the theory of Distributed Morphology (Halle and Marantz (1993)), I have claimed that *da* is the morphologically contracted form of *dearu*, following Nishiyama (1999) and Watanabe (2011). I have further proposed that the zero form is another morphologically contracted form of the copula.

The main finding of this paper is that an empirically adequate descriptive generalization is drawn by taking into account the zero form of the copula. This paper has revealed that *dearu* can contract in all and only the contexts where both of the following conditions are met: (i) when it is used in indicative clauses, and (ii) when it is not used adnominally.

A problem I cannot consider in this paper is the difference between the distribution of *da* and the distribution of the zero form, observed in Table 1. The descriptive generalization about the environments where only the zero form is allowed is stated as follows: in main clauses with epistemic modals and in relative clauses. As discussed in section 5.2, the morphological make-up of *dearu* and *da* points to the idea that there is a relation between the dropping of the tense morpheme and the contraction of *dearu*. I presume that the dropping of the tense morpheme is related to the difference between the distribution of *da* and the distribution of the zero form, but I do not have evidence to support this. This is a topic for future research.

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