Licensing Condition between Adverbs and a Japanese Verbal Suffix, *sugi**

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1.1 Introduction

This paper investigates the use of Japanese verbal suffix, *sugi*. It can be attached to verbs, adjectives and adjectival verbs and it adds the meaning of the excessiveness to the gradable elements mentioned in the sentences, which are the quantity, the amount, the degree, etc. It corresponds to 'too' or 'over+verb' in English; 'too' as in 'too much' or 'too many times' and 'over-verb' as in 'overeat,' 'overheat' or 'overrate.' In this thesis, the combination of verb and *sugi* (V+*sugi*) will be the main focus, and I will attempt to explain the structural relation between V+*sugi* and adverbs.

This paper is organized in the following way: first, some grammatical and ungrammatical examples will be provided in order to see how *sugi* is used and how it requires an adverb as gradable elements in the sentences in Section 2. Based on the observation, I will propose a hypothetical structure to account for the structural relation between the adverb and *sugi*. Section 3 will explain the validity of the hypothesized structure using examples with an adverb and *V+sugi*. After that, Section 4 will discuss the issue on the ambiguity found in Section 3. Then, Section 5 will conclude this paper.

2 Examples of how V+*sugi* is used

2.1   *Grammatical and Ungrammatical examples of V+sugi*   Among the combinations of verbs and *sugi*, there are some cases where V+*sugi* can express the excessiveness of the actions which verbs denote, such as *hashiri-sugi-ru* 'run too much' and *tabe-sugi-ru* 'eat too much.' In these cases, *sugi* emphasizes the excessiveness of the amount of the actions the verbs, *hashiru* and *taberu*, denote. In the first case, *sugi* emphasizes how much this person ran or how long he/she ran, and in the second case, it emphasizes the amount of food this person ate. Both verbs include the gradable implication, and thus, *sugi* can emphasize the excessiveness.

On the other hand, there are the other cases where V+*sugi* are ungrammatical because of the attached verbs even though it is pointed out that *sugi* "can mean the excessiveness of the quantity when it is attached to any verbs" (Yumoto 1997). For example, **oki-sugi-ta* 'woke up too much' and **i-sugi-ta* 'stayed too much' are ungrammatical even though V+*sugi* is a valid formation. Since the verbs, *okiru* and *iru*, do not include gradability, these V+*sugi* examples are realized as ungrammatical.[1]

These *V+sugi* cases can be saved by adverbs being attached. The ungrammatical **oki-sugi-ta* can be turned into grammatical by attaching an adverb *hayaku* 'early': **hayaku** *oki-sugi-ta* 'woke up too early.' The other example **i-sugi-ta* can also be grammatical when an adverb *nagaku* 'long' was attached: **nagaku** *i-sugi-ta* 'stayed too long.' In these cases, the adverb, *hayaku*, is modified by *sugi* and it expresses the excessiveness of 'earliness,' and also, another adverb, *nagaku*, is modified by *sugi* as well and it expresses the excessiveness of 'length.' These grammatical examples show that *sugi* requires adverbs when V+*sugi* does not include the gradability, and once the adverbs are added in the sentences, they are considered to be grammatical. These grammatical patterns suggest that *sugi* requires gradability in the same clause, and it can be included in the denotation of verbs or can be expressed by adjunct phrases.

2.2   *Where *V+sugi can occur in sentences*   It has shown that gradability is crucial in sentences in

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[1] The ungrammatical cases of V+*sugi* will be indicated as *V+sugi* in this paper, and it shows that V+*sugi* is well-formed, but ungrammatical because of attached verbs.

the form of either verbs or adverbs, and also, *V+*sugi* cases can be saved by adverbs, working as the required gradable elements. Now let us look at (1) with *V+*sugi*.

(1) *Kare-ga   choojoo-ni   tsuki-sugi-ta.
    He-NOM   the.summit-to   reach-*SUGI*-PAST
    He reached the summit too much.

First, *tsuki-sugi* is one of the combinations of *V+*sugi* because the verb, *tsuku*, meaning 'reach or arrive,' cannot refer to gradability. Since (1) does not have any adverbs with a function as gradable element, the whole sentence is considered to be ungrammatical. In the next example (2), an adverb, *hayaku* 'quickly' will be inserted to (1) in order to add the required gradability.

(2) Kare-ga   choojoo-ni   ***hayaku***   tsuki-sugi-ta.
    He-NOM   the.summit-to   quickly   reach-*SUGI*-PAST
    SUBJECT PP   Adv.
    He reached the summit too quickly.

(2) is grammatical because it has both *V+*sugi* and the adverb and the adverb is working as a gradable element. Hence, *sugi* can emphasize the manner of the action in (2).

   As indicated in (2), *kare-ga* is the subject of the sentence, *choojoo-ni* is the PP and *hayaku* is the adverb. The sentences in (3) share the lexical items and the order of the three elements, the subject, the PP and the adverb are differentiated by the scrambling. Since the lexical items are the same, they are all expected to mean the same as (2) and expected to be grammatical as well. However, the grammaticality depends on the order of the elements. The rest of the sentence patterns after scrambling (2) are as follows:

(3) a. Kare-ga   ***hayaku***   choojoo-ni   tsuki-sugi-ta.
         He-NOM   quickly   the.summit-to reach-*SUGI*-PAST
     b. Choojoo-ni   kare-ga   ***hayaku***   tsuki-sugi-ta.
         The.summit-to   he-NOM   quickly   reach-*SUGI*-PAST
     c. ?/*Choojoo-ni   ***hayaku***   [kare-ga   tsuki-sugi-ta.]
         The.summit-to   quickly   he-NOM   reach-*SUGI*-PAST
     d. ?? ***Hayaku***   [kare-ga   choojoo-ni   tsuki-sugi-ta.]
         Quickly   he-NOM   the.summit-to reach-*SUGI*-PAST
     e. ?/****Hayaku***   choojoo-ni   [kare-ga   tsuki-sugi-ta.]
         Quickly   the.summit-to he-NOM   reach-*SUGI*-PAST

The first two sentences (3, b) are both natural, and it is possible to capture the meaning of the excessiveness in these sentences, whereas the last three sentences (3c, d, e) are considered to be less acceptable. In (3a) and (3b), the adverb *hayaku* is modified by *sugi* and *sugi* emphasizes the manner of the action. Because of the higher acceptability, they can be regarded as grammatical. In contrast, the acceptability of the sentences (3c, d, e) is lower compared to the first three sentences of the pattern in (2) and (3a, b), and the grammatical judgements are different from each other. Among these three sentences, the acceptability of the sentence (3d) is slightly higher than the sentence (3c) and (3e), and thus, the sentence (3d) is marked as ?? and (3c) and (3e) are marked as ?/*.

   What makes these acceptability judgements different can be found in the order of the elements. In (3a) and (3b), the adverb shares the environment where it is preceded by the subject in the sentences, and the associations between the adverb and *sugi* are strong enough to maintain the acceptability. Conversely, the sentence (3c, d, e) all have its adverbs before the subjects, which makes the distance between the adverb and *sugi* far from each other. This distance may make the acceptability lower while making the association weaker. Therefore, the acceptability judgements made in (2) and (3) suggest that *sugi* requires the adverbial factors with positional restriction in sentences.

   Based on the grammatical pattern shown here, the position of the adverb contributes to the acceptability of the sentences. The sentence is considered to be grammatical when the adverb is placed between the subject and *V+*sugi*, whereas the sentence is considered to be unnatural when the adverb precedes the subject noun phrase (hereafter, NP) in the sentence. In order to provide a structural explanation to this phenomena, I will propose a hypothetical structure in the next section.

2.3   *Hypothesis*   Now I will hypothesize a structure (4) in order to explain the grammatical pattern extracted in Section 2.2. The grammatical judgments are indicated using a checkmark and ?/* in (4).

(4)

TP

?/*

Subject
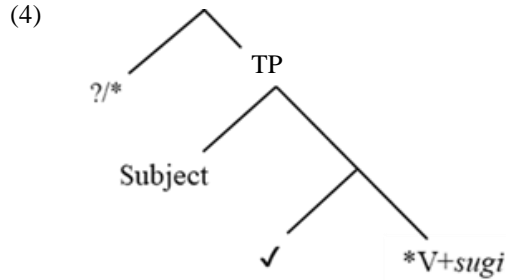
✓   *V+*sugi*

This is a structure for cases where verbs cannot refer to gradability. In this paper, V+*sugi* is considered to be a compound consisted of verb and a verbal suffix *sugi*, and thus, they are treated as one verbs in the structure. When the adverb is placed between the subject and *V+*sugi*, which means that the adverb is placed lower than the subject in the structure, the sentence is considered as grammatical, and the judgement is indicated by the checkmark in the structure. Also, when the adverb precedes the subject NP: the adverb is placed higher than the subject in the structure, the sentence is considered to be unnatural, and the judgement is made as ?/*.
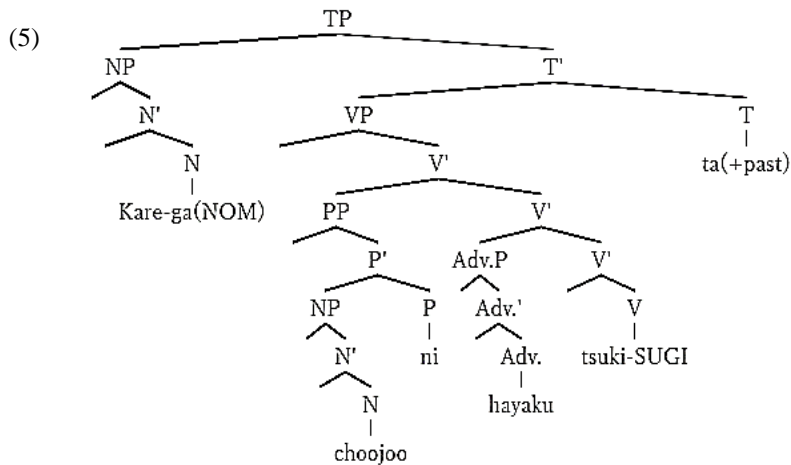
(4) also implies the licensing relation between the adverb and *V+*sugi* because the acceptability of the sentences varies depending on the position of the adverb even though the adverb can structurally c-command *V+*sugi* wherever it is placed in the structure. Based on the acceptability judgements of the sentences in (2) and (3), the association between the adverb and *V+*sugi* is stronger when the adverb appears in the same TP domain where *sugi* is placed, compared to when the adverb appears outside of the TP domain. In addition, this stronger association seems to contribute to the grammaticality of the sentences. Thus, it can be inferred that the environment where the adverb is within the TP domain allows the adverb to license *sugi*, which makes the association between the adverb and *V+*sugi* stronger and also makes the sentence acceptable. Now this hypothetical structure will be utilized to explain the licensing condition of the adverb in sentences, and tree diagrams of the sentences will be shown in the following section.

3 Analysis

3.1   *Analysis 1: Sentences with *V+sugi - grammatical examples*   In   this   section,   the   three grammatical cases, (2), (3a, b), introduced in Section 2.2 will be analyzed. The first sentence (2) includes the adverb preceding *V+*sugi* immediately.

(2) Kare-ga choojoo-ni **hayaku** tsuki-sugita.

The *V+*sugi* used in this sentence is ungrammatical because the verb, *tsuku*, cannot refer to the gradable elements as mentioned. In this sentence, the order of lexical items in this sentence is subject, PP, adverb and *V+*sugi*, which informally means that the adverb is placed very close to *V+*sugi*. The acceptability judgement suggests that the distance between the adverb and the suffix *sugi* is close enough for the strong association between them. In this environment, *sugi* emphasizes the excessiveness of what the adverb *hayaku* modifies: the manner of the action denoted by the verb *tsuku*. Now the structural relation between the adverb and *sugi* is shown in the tree diagram as follows.

(5)

```
                              TP
            ┌──────────────────┴───────────────┐
           NP                                  T'
           ╱╲                        ┌──────────┴──────────┐
          N'                        VP                     T
         ╱ ╲               ┌─────────┴────┐               │
        N                 V'            ta(+past)
        │          ┌───────┴───────┐
   Kare-ga(NOM)   PP              V'
                 ╱ ╲        ┌──────┴──────┐
                P'        Adv.P          V'
              ╱  ╲        ╱ ╲            ╱ ╲
            NP    P    Adv.'            V
            ╱╲    │    ╱ ╲              │
           N'    ni  Adv.         tsuki-SUGI
           ╱╲         │
          N         hayaku
          │
       choojoo
```

In (5), both the PP *choojoo-ni* and the Adv.P *hayaku* are attached to V' and stacked under the VP. According to the diagram, the adverb can structurally c-command *sugi* in this environment because the adverb and *sugi* share the same V'; second to the last V' under VP. At the same time, the adverb can license *sugi* because this sentence has its adverb lower than its subject and the adverb is placed within the same VP as where *sugi* is in accordance with the condition of the high acceptability of this sentence.
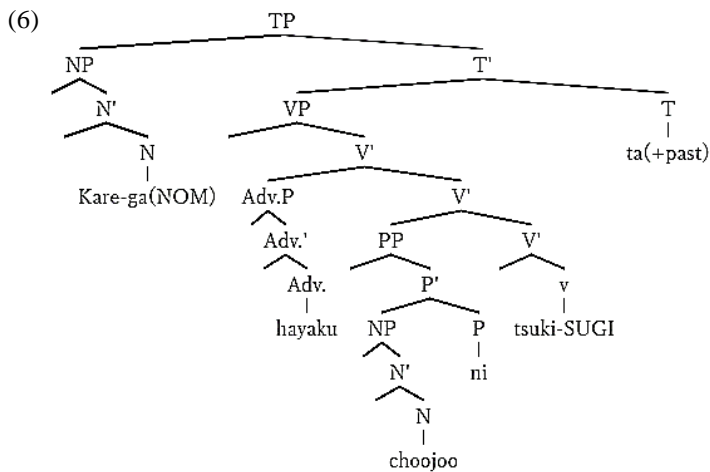
Thus, in (2), the adverb is placed between the subject and *sugi*, which structurally means that the adverb is placed lower than the subject. In this environment, the acceptability of the sentence is higher and the adverb *hayaku* can license *sugi* as hypothesized.

One thing we can notice in (5) is the domain where the adverb and *sugi* need to appear together can be VP because the adverb can be included in the same VP as where *V+sugi* is placed. (5) supports both hypotheses, the domain as either TP or VP. The following analysis will develop this discussion further.

Another grammatical sentence (3a) is introduced again as follows:

(3a) Kare-ga **hayaku** choojoo-ni tsuki-sugita.

This sentence is similar to the sentence (2) and the order of lexical items in this sentence is subject, adverb, PP and *V+sugi*. In this case, the adverb does not immediately precede V+*sugi*, but it is still placed between the subject and *V+sugi*. Based on the acceptability judgment of (3a), the distance between the adverb and *V+sugi* can be considered close enough to help the adverb to be associated with *sugi*, and the association is strong enough to maintain the acceptability of this sentence. Now the structural relation between the adverb and *sugi* is shown in the tree diagram as follows:

(6)

```
                              TP
            ┌──────────────────┴───────────────┐
           NP                                  T'
           ╱╲                        ┌──────────┴──────────┐
          N'                        VP                     T
         ╱ ╲               ┌─────────┴──────┐             │
        N                Adv.P             V'          ta(+past)
        │                 ╱╲         ┌──────┴──────┐
   Kare-ga(NOM)        Adv.'        PP            V'
                       ╱ ╲         ╱ ╲           ╱ ╲
                     Adv.         P'            v
                      │          ╱ ╲            │
                   hayaku      NP    P      tsuki-SUGI
                               ╱╲    │
                              N'    ni
                              ╱╲
                             N
                             │
                          choojoo
```

(6) shows that the adverb c-commands *V+sugi* structurally, and also, it can be said that this environment

allows the adverb *hayaku* to license *sugi* within the TP domain because of the higher acceptability of the sentence. This structure also supports the idea that the VP is the domain where the adverbs and **V+sugi* appear together.

Now the third grammatical sentence (3b) is going to be analyzed.

(3b) Choojoo-ni kare-ga ***hayaku*** tsuki-sugita.

The order of the lexical items in this sentence is PP, subject, adverb, and **V+sugi*. In (3b), the adverb *hayaku* immediately precedes **V+sugi*, *tsuki-sugi*, which is still between the subject and V+*sugi*. Also, based on the acceptability judgement, the adverb can be considered that it is strongly associated with *sugi* in (3b). This environment allows the adverb to be associated with *sugi* and *sugi* can emphasize the manner of the action denoted by the verb.

Now the structural relation between the adverb and *sugi* will be depicted in the tree diagram. In order to describe the structure higher than the TP, I will borrow the idea of the projection of the left periphery proposed by Rizzi (1997). First, the proposed structure by Rizzi is as follows:

(7)
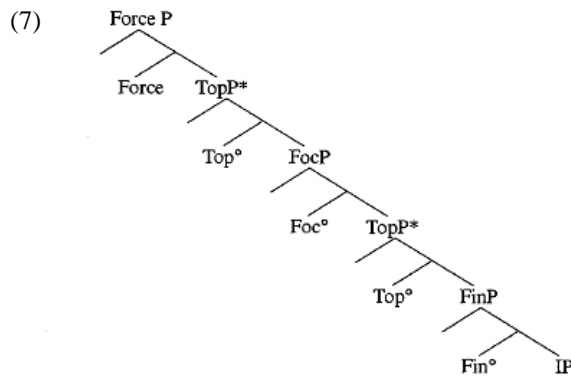
(Rizzi, 1997)

In (7), the projection of CP, namely, the left periphery, is splitted in some layers in order "to account for a number of ordering constraints involving elements of the C system" (Rizzi 297). In this paper, it will not be specified where exactly the adverbs should be placed in the left periphery, but the idea of left periphery is utilized to account for the elements appearing higher than TP. In the tree diagrams below, the functional heads above TP are described using CP with numbers. The tree diagram of (3b), (8) is drawn as follows:

(8)
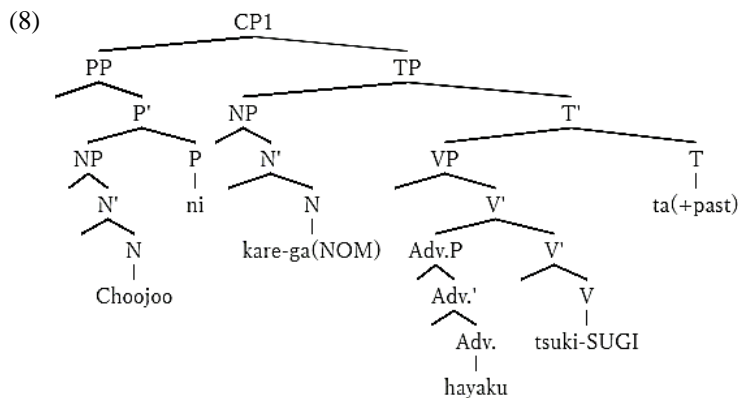
In (8), the PP choojoo-ni is adjoined to CP1 based on the split CP hypothesis. (8) shows that the adverb can structurally c-command *sugi*, and also, the adverb can license *sugi* because the adverb is placed lower than the subject in the structure based on the acceptability judgement. This time, the adverb is include in the same VP domain as where **V+sugi* is placed again.

Therefore, in the environment where the adverb is placed between the subject and *sugi*, the adverb is placed lower than the subject, which allows the adverb to license *sugi* in the domain of VP. It can also be inferred that the licensing condition makes the association between the adverb and *sugi* stronger, and makes
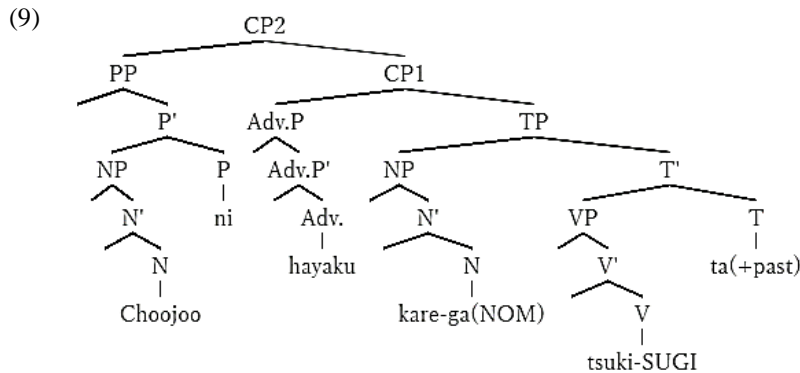
the acceptability of the sentence higher.

Based on the observation so far, when the adverb is placed between the subject and V+*sugi*, the adverb can be considered close enough to be associated with *sugi*, and *sugi* can modify the excessiveness of the manner of what the verb denotes. Also, structurally, the adverb can license *sugi* when the adverb is placed lower than the subject and they appear in the same VP domain. These environments are applicable to the cases of (2) and (3a, b), whose tree diagrams are all shown above as (5), (6) and (8) respectively. Thus, as hypothesized, the environment, where the adverb and *sugi* are placed in the same TP, allows the adverb to c-command and license *sugi* at the same time. When these conditions are met, the examples can be highly acceptable, leading to the higher grammaticality of the examples.

Moreover, the data so far supports the argument that the domain can be specified as VP instead of TP, where the adverb and *sugi* need to appear for the adverb to license *sugi*. In (2) and (3a, b), the adverb appears in the same VP domain as where *sugi* is placed and they are all considered to be acceptable. In order to investigate whether the new hypothesis can be valid, the other three sentences introduced as (3c, d, e) in Section 2.2 will be analyzed in the next section.

3.2   *Analysis 2: Sentences with *V+sugi - Ungrammatical example*   Now the sentences (3c, d, e) in Section 2.2 will be analyzed, which were considered to be less acceptable compared to the sentences (2) and (3a, b), and also, their tree diagrams will be drawn in the following. The first sentence is (3c) which is considered to be ungrammatical because of the linear word order.

(3c) ?/*Choojoo-ni **hayaku** [kare-ga tsuki-sugita.]

The order of the lexical items in this sentence is PP, Adv., subject NP and *V+*sugi*. In this case, the adverb *hayaku* is not placed between the subject NP and *V+*sugi*, but between the PP and the subject. Based on the acceptability judgement showing (3c) as unnatural, the distance between the adverb and *sugi* here is too far for the adverb to be associated with *sugi*. In this environment, the sentence cannot have the meaning of excessiveness appropriately because the association between the adverb and *sugi* is not strong enough for *sugi* to emphasize the gradability, contrary to the cases where the adverb is placed between the subject and *sugi* such as in the sentences (2) and (3a, b). Now a tree diagram of (3c) will be shown below to provide a structural explanation to this sentence.
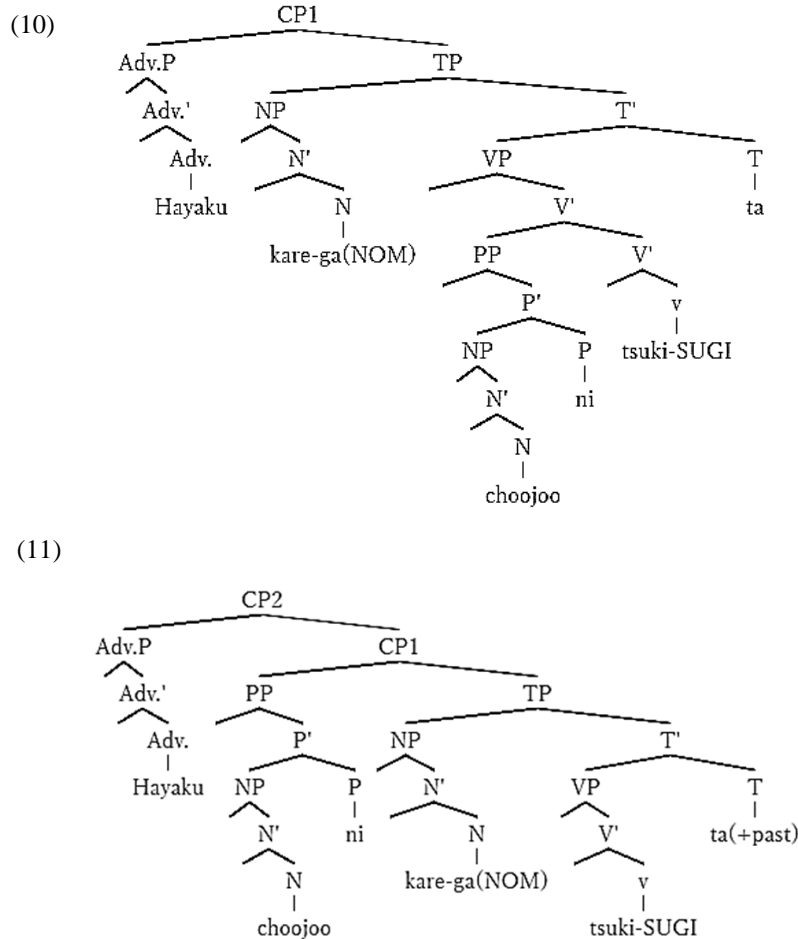
(9)

In (9), the PP and the adverb are placed higher than the TP as CP2 and CP1 respectively. Also, the adverb is placed outside of the TP range. The acceptability of this sentence indicates that the adverb cannot always license *sugi* even if the adverb can c-command *sugi* in the structure. Based on the hypothesis, since the adverb is placed outside of the TP domain where *sugi* is placed, the adverb cannot license *sugi* in this environment and this leads to the lower acceptability of the sentence.

Therefore, in the environment where the adverb precedes the subject NP after the scrambling, the adverb cannot be associated with *sugi* strongly. Since the adverb and *sugi* do not appear in the same TP domain, it cannot license *sugi*. In other words, this distance between the adverb and *sugi* make the sentence less acceptable and not completely grammatical. The same explanation is applicable to the last two sentences (3d) and (3e), which are both considered to be unnatural.

(3d) ??***Hayaku*** [kare-ga choojoo-ni tsuki-sugita.]

(3e) ?/****Hayaku*** choojoo-ni [kare-ga tsuki-sugita.]

In these sentences, the adverb is placed at the beginning, which informally means that the adverb is placed far from V+*sugi*. Based on the lower acceptability of (3d, e), this environment makes it difficult for the adverb to be associated with *sugi* and *sugi* cannot express the excessiveness of the action denoted by the verb *tsuku*. The structural relation between the adverb and *sugi* will be described in tree diagrams below.

(10)

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                        CP1
        ┌────────────────┴──────────────────┐
      Adv.P                                 TP
      ╱╲                   ┌─────────────────┴───────────┐
    Adv.'  NP              NP                            T'
    ╱╲     ╱╲         ┌─────┴────┐               ┌────────┴──────┐
  Adv.   N'          N'          VP              T
   │      │           │     ┌─────┴─────┐        │
 Hayaku   N       kare-ga(NOM) PP        V'      ta
          │                  ╱╲      ┌────┴────┐
       kare-ga(NOM)         P'       v
                         ┌───┴───┐   │
                        NP      P  tsuki-SUGI
                        ╱╲      │
                       N'      ni
                       ╱╲
                        N
                        │
                     choojoo
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(11)

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                        CP2
        ┌────────────────┴──────────────────┐
      Adv.P                                 CP1
      ╱╲              ┌──────────────────────┴───────────┐
    Adv.'  PP        PP                                  TP
    ╱╲   ╱╲      ┌────┴────┐            ┌─────────────────┴──────┐
  Adv.  P'      P'         NP          NP                       T'
   │   ╱╲    ┌───┴───┐    ╱╲     ┌──────┴─────┐        ┌─────────┴────┐
 Hayaku NP  NP       P   N'     N'            VP       T
        ╱╲  ╱╲       │   ╱╲      │      ┌──────┴───┐   │
       N'  N'       ni   N   kare-ga(NOM)  V'       ta(+past)
       ╱╲  ╱╲           │                 ╱╲
        N   N       kare-ga(NOM)          v
        │                                 │
     choojoo                          tsuki-SUGI
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The adverb is placed higher than TP as CP1 in (10) and as CP2 in (11). Also, the acceptability of these sentences suggest that the adverb cannot license *sugi* even when the adverb can c-command *sugi* in the structure. Since the adverb is placed outside of the TP domain, the adverb cannot license *sugi* in this environment, which makes this sentence less acceptable than the first three sentences (2) and (3a, b) and not completely grammatical.

Therefore, the distance between the adverb and *sugi* is informally considered to be far because the adverb is placed at the beginning of the sentence, which makes it difficult for the adverb to be strongly associated with *sugi*. In this environment, the sentence cannot have the meaning of the excessiveness. Structurally, the adverb is placed higher than the TP in the tree diagram and the adverb and *sugi* are not appearing in the same TP domain, which prevents the adverb from licensing *sugi* even though the adverb c-commands *sugi*.

In these ways, it can be stated that the reason why the acceptability of (3c, d, e) was lower than that of (2) and (3a, b) is the adverb precedes the subject NP, in other words, the adverb is placed outside of the TP range in the structure. In this environment, the association between the adverb and *V+*sugi* is not strong enough for *sugi* to emphasize the manner of the adverb.

3.3   *Discussion*   Based on the observation so far, when the adverb is not placed between the subject and *sugi* in sentences, the distance between the adverb and *sugi* is too far for *sugi* to emphasize the excessiveness of the action denoted by the verb. Also, the sentence is less acceptable and considered unnatural, when the adverb is placed higher than the subject, in other words, when the adverb is placed outside of the TP domain. This is because the adverb cannot license *sugi* even if the adverb can c-command *sugi* in the structure.

The observation of the sentences in (2) and (3) supports the hypothesized structure. The association between the adverb and *sugi* is stronger when the adverb is placed between the subject of the sentence and *sugi*, and it is weaker when the adverb precedes the subject NP. Structurally, when the adverb is placed inside of the TP, the adverb can license *sugi* and *sugi* can add the meaning of excessiveness to the sentence, whereas when it is placed outside of the TP, the adverb cannot license *sugi* even if the adverb can c-command *sugi* in the structure. Thus, the hypothesized structure is supported by the given observation.

Also, the observations of the sentences in (2) and (3a, b) support the idea that the adverb needs to be placed in the same VP domain as where *sugi* is placed. In three sentences, the adverb was placed outside of both TP and VP and they were all considered to be unnatural. Thus, the domain where the adverb and *sugi* need to appear together can be specified as VP domain based on the observation so far. However, the hypothesis which states that the domain is specified as TP is still valid as well because the VP is placed within the TP, and moving a phrase out of the TP and moving a phrase out of VP meant the same in the given examples. In order to specify which domain may be better in terms of explaining more similar cases using the same hypothesis, another case with topicalization is introduced here.

(12) *Taro-wa   koto-o   uketome-*sugi*-da.
      Taro-TOP   things-ACC take-*SUGI*-PRES
      Taro takes things too much.

This sentence is not because of the combination of the verb *uketome-ru* 'take or accept' and *sugi*. It is not very difficult to interpret this situation as where Taro had many things to take care of and the amount of was too much, however, it will be more common to refer to this situation with the adverb *sinkoku-ni* 'seriously' taking into account the collocation. (12) with the adverb, the sentence (13) is as follows.

(13) Taro-wa   koto-o   ***shinkoku-ni***   uketome-*sugi*-da.
      Taro-TOP   things-ACC seriously   take-*SUGI*-PRES
      SUBJECT   OBJECT   Adv.   *V+sugi*
      Taro takes things too seriously.

(13) is an example of a grammatical sentence with an adverb and *V+sugi*. Here, the association between the adverb and *sugi* is considered strong enough for this sentence to be highly acceptable because the adverb is placed between the subject NP and *V+sugi*. This environment strengthens the association between the adverb and *sugi*, and the stronger association helps the grammaticality of this sentence. The structural relation between the adverb and *sugi* is described in the following tree diagram.

(14)
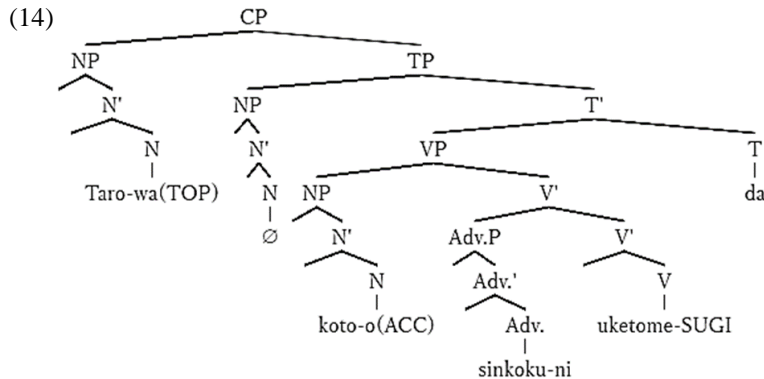
In (14), the subject is placed at the left branch of CP because the case marker is realized as *wa* in (13), which indicates that the subject NP is topicalized. Also, the object NP *koto-o* is adjoined to VP. In this

environment, the adverb can c-command *sugi* as well as license *sugi* because they are placed in the same TP domain and VP domain at the same time. Thus, *sugi* can emphasize the excessiveness of the adverb in this sentence and (13) is considered to be grammatical.

The same analysis can be provided to (13) as given in Section 3.1 and 3.2. The elements in (13), the subject NP, the object NP and the adverb, are differentiated through scrambling and it will be found that there is a correlation between the order of the elements and the structural relation. The analysis will not be repeated because it takes the same process as the analysis above, however, this time, we can notice that the domain where the adverb and *V+sugi* is CP because of the topicalization.

Now that there are three possible candidates to be the domain where the adverb and *V+sugi* are required to appear together, which are VP, TP and CP. It is easy to reduce the candidate as the choice between VP and CP because the structure cannot account for cases with topicalizaton when TP is the border which the adverb cannot cross over based on the observation in this chapter. Also, in order to account for as many cases as possible, it is reasonable to establish the hypothesis as follows: the CP domain is the domain where the adverb and *sugi* are required to appear together so that the adverb can c-command *sugi* as well as license *sugi*.

Some grammatical and ungrammatical examples with an adverb and *V+sugi* were discussed with respect to the linear order and the structural relation of the adverb and *V+sugi* in this section. They suggested that sentences with *V+sugi* could be saved by an adverb with a gradable feature with the restriction on the position of the adverb in the sentences. They need to appear in the same CP domain so that the adverb can license *sugi* in the structure: it is not enough for the adverb only to c-command *sugi*. In this context, this CP where the adverb and *sugi* need to be placed together do not consist the same CP domains with the structure higher than the CP, which are indicated as CP1 and CP2 in the provided tree diagrams. When the adverb can successfully license *sugi*, sentences can be considered to be acceptable and this leads to the higher acceptability and the higher grammaticality. To sum up the discussion so far, some important factors regarding V+*sugi* and the licensing condition between adverbs and *sugi* are listed below.

1. When a verb can refer to gradable elements, V+*sugi* is grammatical.
2. When there is a *V+*sugi* in a sentence, an adverb working as a gradable element is required in the sentence.
3. When there is an adverb in the sentence, it is required to appear in the same CP domain as where *sugi* is placed.
4. Only when the adverb can both c-command and license *sugi*, can the sentence be acceptable and grammatical.

4 More to investigate - Ambiguity

Here, one of the issues on the ambiguity found in the analysis so far will be introduced. In the analysis made above, the grammatical judgements were based only on one of the meanings of the adverb. However, the special adverb *hayaku* can cause the ambiguity because of the two functions that *hayaku* has, as a time adverb and as a manner adverb.

In the analysis above, the adverb *hayaku* were all considered as a manner adverb, however, the adverb has another function as a time adverb meaning 'early.' Let us look at an example whose context is easier to be interpreted as both meanings.

(15) *Kanojo-wa   doa-o   shime-*sugi*-ta.
       She-TOP   the.sliding.door   close-*SUGI*-PAST.
       She closed the sliding door too much.

This sentence is ungrammatical because the verb utilized in this sentence *shime-ru* 'close' does not include gradability and the combination of the verb and *sugi* is realized as ungrammatical. Thus, an adverb *hayaku* will be added to the sentence (15) to turn this sentence to be grammatical.

(16) Kanojo-wa   doa-o   ***hayaku***   shime-*sugi*-ta.
        She-TOP   the.sliding.door   early/quickly   close-*SUGI*-PAST
        SUBJECT   OBJECT   Adv.
   *She closed the door too quickly/early.*

The adverb *hayaku* in this sentence can be interpreted as both as a time adverb and as a manner adverb. When it is interpreted as a time adverb, the sentence means that the time she closed the sliding door was too early, and when it is interpreted as a manner adverb, (16) means that the speed she closed the door was too fast. The structure of (16) will be described in the following.
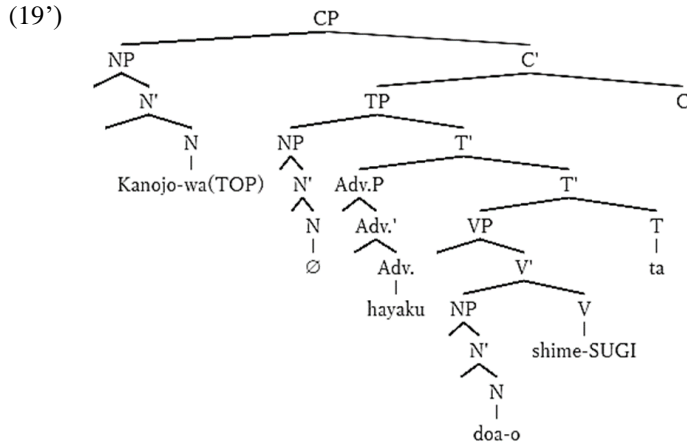
(17)
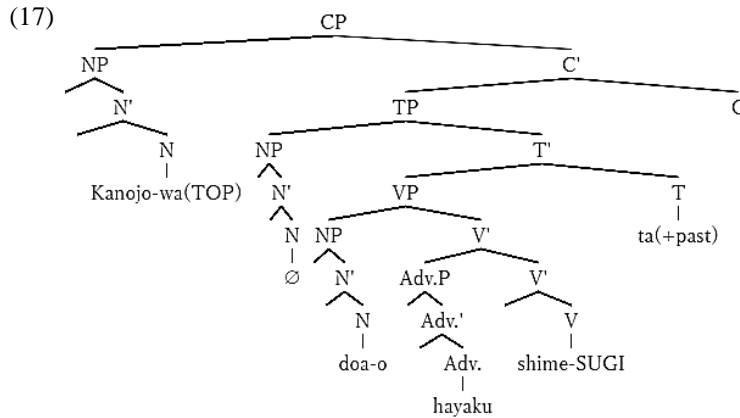
Since this sentence has a topicalized subject NP, the top layer is CP. As (17) indicates, (16) is acceptable and grammatical because the adverb is placed in the same CP domain as where *sugi* is placed. In this environment, the adverb can c-command and license *sugi* at the same time, which makes (16) grammatical. Now one of the sentences created through the scrambling of (16) will be analyzed below.

(18) Kanojo-wa   ***hayaku***   doa-o   shime-sugi-ta.
     She-TOP   early/quickly   the.sliding.door   close-SUGI-PAST

(18) is considered to be acceptable and grammatical because its adverb is placed between the subject NP and V+*sugi* from the perspective of linear order. Also, the adverb can be interpreted both as 'early' and as 'quickly.' Now the tree diagram of (18) will be drawn as follows.
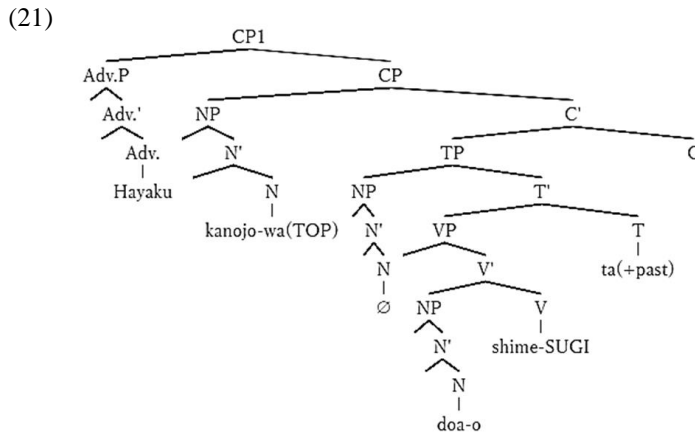
(19)
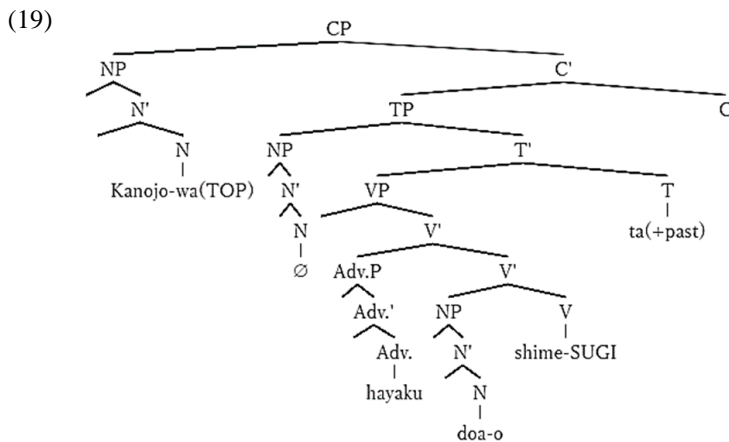
The order of the elements in (18) is subject NP, adverb, object NP and *V+*sugi*. In this order, the association between the adverb and *sugi* is strong enough for *sugi* to emphasize the excessiveness of the action denoted by the verb. In the structure (19), the topicalized subject NP is adjoined to the highest layer, CP. Also, the object NP is considered to be a complement of the verb *shime* 'close' and the adverb is considered as an adjunct in this structure. The adverb is included in the VP domain where *sugi* is placed, and thus, this structure allows the adverb not only to c-command *sugi* but also to license *sugi*. Also, another tree diagram which can be drawn for (18) is described below.

(19')

```
                                    CP
                    NP                          C'
                         N'              TP                    C
                    N         NP              T'
            Kanojo-wa(TOP)  N'   Adv.P              T'
                         N    Adv.'      VP              T
                         |         |          |
                         ∅       Adv.        V'          ta
                                  |       
                                hayaku    NP      V
                                          N'   shime-SUGI
                                          N
                                          |
                                        doa-o
```

In (19'), the adverb is adjoined to T' instead of V' and everything else is placed the same as (19). These two trees can illustrate the ambiguity caused by the special adverb *hayaku*, because two possible trees can be drawn for one sentence with one difference in the structure, the position where the adverb is adjoined. These two difference structures could reflect the meaning differences as well. Now, (18) will be compared to the other sentence where only one interpretation of the adverb *hayaku* is possible.

(20) ***Hayaku***   [kanojo-wa   doa-o   shime-sugita.]
      Early   she-TOP   the.sliding.door   close-SUGI-PAST

The acceptability of (20) is expected to be lower based on the observation made above. However, this can be considered as one of the grammatical cases obtained through the scrambling of (18), which only allows the interpretation of the adverb as a time adverb. The tree diagram is as follows.

(21)

```
                          CP1
        Adv.P                      CP
        Adv.'     NP                        C'
        Adv.     N'          TP                    C
        |                 
      Hayaku     N      NP          T'
               |        N'    VP          T
        kanojo-wa(TOP)  N    V'          ta(+past)
                        |  
                        ∅  NP      V
                           N'   shime-SUGI
                           N
                           |
                         doa-o
```

In (21), the topicalized subject NP is adjoined to CP, and also, the object NP *doa-o* is treated as a complement of the V *shime-SUGI* here. Moreover, the adverb is placed higher than the CP as CP 1 based on the split CP hypothesis. This structure was considered to be ill-formed in the previous chapter because this environment is not supposed to allow the adverb to c-command and license *sugi* at the same time. However, considering the acceptability and the grammaticality of (20), (21) should be considered well-formed if the adverb is working as a time adverb and modifying the earliness of the action denoted by the verb. If this assumption holds true, the adverb needs to c-command and license *sugi* at the same time in this environment. Since the adverb could not be adjoined to the structure higher than the CP in order for the adverb to license *sugi* in the hypothesis, there needs to be a revised rule for each type of adverb in order to account for both cases where the adverb is working as a time adverb and as a manner adverb.

Thus, the observation of (16), (18) and (20) suggest that the meaning ambiguity can be explained by different structures. When the adverb is working as a time adverb, the adverb is adjoined to T' as an adjunct

and the adverb can be modified by *sugi* even when it is placed outside of the CP where *sugi* is placed. On the other hand, when the adverb is working as a manner adverb, the adverb is adjoined to V' as an adjunct and it is required to be within the CP domain so that it can c-command and license *sugi* at the same time. The restriction on the domain found in Section 3 is applicable to the case of a manner adverb, but not necessarily to the case of a time adverb.

5 Conclusion

Based on the data with adverbs and V+*sugi*, the following two points have been discussed: how the CP domain plays a role in the structural relation between the adverb and *sugi*, and how an ambiguity in the meaning occurs when a special adverb *hayaku* is used as a gradable element in sentences. The position of the adverb as a licenser is significant because it contributes to both the acceptability and the grammaticality of sentences, and the adverb and *sugi* are required to occur in the same CP domain so that the adverb can both c-command and license *sugi* in structures. Also, this paper predicted that the special adverb *hayaku*, meaning early/quickly depending on its function, causes the ambiguity: the function as a time adverb and as a manner adverb. Based on the data, when it is adjoined to V', it is working as a manner adverb, and when it is adjoined to T', it is working as a time adverb.

As a concluding remark of this paper, the licensing conditions proposed in Section 3 and 4 are listed as follows. These requirements are for sentences with adverbs as a gradable element and *V+*sugi* and when this condition is met, the sentence can be grammatical.

1. When a verb can refer to gradable elements, V+*sugi* is grammatical.
2. When there is a *V+*sugi* in a sentence, an adverb working as a gradable element is required in the sentence.
3. When there is an adverb in the sentence, it is required to appear in the same CP domain as where *sugi* is placed.
4. Only when the adverb can both c-command and license *sugi*, can the sentence be acceptable and grammatical.
5. The sequence of the subject NP and *V+*sugi* will lower the acceptability of the sentences. In this environment, it is difficult to determine which usage of the adverb is applied to the sentences when the adverb can be used as more than two types of adverbs.
6. The adverb with two types of implications, such as a time adverb and a manner adverb, can be distinguished where it is placed in the structure.
7. In the case where the adverb is used as a manner adverb, the hypothesized structure proved in Chapter 2 is applicable and the adverb is required to be placed within the same CP domain as where *sugi* is placed. In this environment, the adverb can c-command and license *sugi* at the same time, and the sentence can include the excessiveness of the manner of the action denoted by the verb.
8. When the adverb is used as a time adverb, the position of the adverb can be anywhere in the sentences, even if it is outside of the CP domain, and the sentences are considered to be both acceptable and grammatical unless the sentence has the sequence of the subject NP and *V+*sugi*.

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