

# Why *kono akai hana* and *akai kono hana* Are Both Possible in Japanese: A Word Grammar Account

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## Abstract

It is an interesting fact that *kono akai hana* and *akai kono hana* are both possible in Japanese, while in English, only *this red flower*, the structure corresponding to the former, is possible. How do we explain this fact? To my knowledge, there has been no satisfactory answer so far to this old but not easy question in the literature on Japanese linguistics. In this paper I shall try to solve this problem within the framework of Word Grammar (henceforth abbreviated as WG; Hudson 1990, 2007b, 2010a, 2010b, 2010c).

The problem this article addresses is why one can say *this red flower* and *red this flower* in Japanese but not in English. The answer given is very simple: it depends on an analysis of the relevant English form as a DP with the *as the* head, while the relevant Japanese form is an NP with *flower* as the head. This, together with a precedence concord principle from Word Grammar, is supposed to account for the contrast between Japanese and English.

The central mystery to be explained is thus the free relative ordering of determiner and adjective in Japanese and the restricted order in English (*this+red+flower*). The explanation requires default dependent-to-governor linear ordering with a no-crossing constraint on "edges" plus the assumption that in English determiners are the heads/governors of the nouns that accompany them, but in Japanese determiners are dependent on the noun.

## 1. Introduction

It is a gripping fact that *kono akai hana* and *akai kono hana* are both possible in Japanese, while in English, only *this red flower*, the structure corresponding to the former, is possible. How we explain this fact is an intriguing and challenging problem. To my knowledge, there has been no satisfactory answer so far to this old but not easy question in the literature on Japanese linguistics. In this paper I shall try to

solve this problem within the framework of Word Grammar (henceforth abbreviated as WG, Hudson 1990, 2007b, 2010a, 2010b, 2010c).

An analysis is offered in terms of WG to explain these contrastive facts in Japanese and English. These facts are accounted for by the Precedence Concord Principle, the Promotion (Demotion) Principle and the Extra Dependency.

I will begin with a discussion of the key concepts in Word Grammar for this study of the internal structure of noun phrases containing Japanese and English determiners.<sup>1</sup> Next, I will present data from Japanese and English. Then, I will demonstrate how Japanese and English data are handled quite neatly in WG using the Precedence Concord Principle.

## 2. Word Grammar in a Nutshell

Word Grammar is a theory of language structure which Richard Hudson of University College London has been building since the early 1980's. It is still changing in detail, but the main ideas are the same. These ideas themselves developed out of two other theories that he had proposed: Systemic Grammar (now known as Systemic Functional Grammar), due to Michael Halliday, and then Daughter-Dependency Grammar, his own invention.

Here are the main ideas, most of which come from the latest version of the WG encyclopedia and WG Homepage (2010b), together with an indication of where they originally came from.

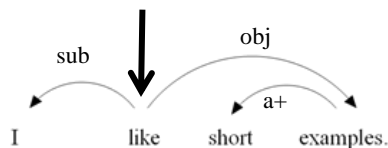
- It (i.e. WG) is monostratal - only one structure per sentence, no transformations. (From Systemic Grammar)

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<sup>1</sup> As will be discussed later in the paper, there is syntactic evidence against categorizing these Japanese demonstratives as determiners.

- It uses word-word dependencies - e.g. a noun is the subject of a verb. (From John Anderson and other users of Dependency Grammar, via Daughter Dependency Grammar; a reaction against Systemic Grammar where word-word dependencies are mediated by the features of the mother phrase.)
- It does not use phrase structure - e.g. it does not recognise a noun phrase as the subject of a clause, though these phrases are implicit in the dependency structure. (This is the main difference between Daughter Dependency Grammar and Word Grammar.)
- It shows grammatical relations/functions by explicit labels - e.g. 'subject' and 'object' as shown in (1). (From Systemic Grammar)

(1)



- It uses features only for inflectional contrasts - e.g. tense, number but not transitivity. (A reaction against excessive use of features in both Systemic Grammar and current Transformational Grammar.)
- It uses default inheritance, as a very general way of capturing the contrast between 'basic' or 'underlying' patterns and 'exceptions' or 'transformations' - e.g. by default, English words follow the word they depend on, but exceptionally subjects precede it; particular cases 'inherit' the default pattern unless it is explicitly overridden by a contradictory rule. (From Artificial Intelligence)
- It views concepts as prototypes rather than 'classical' categories that can be defined by necessary and sufficient conditions. All characteristics (i.e. all links in the network) have equal status, though some may for pragmatic reasons be harder to override than others. (From Lakoff and early Cognitive Linguistics, supported by work in sociolinguistics)
- It presents language as a network of knowledge, linking concepts about words, their meanings, etc. - e.g. *kerb* is linked to the meaning 'kerb', to the form /ke:b/, to the word-class 'noun', etc. (From Lamb's

Stratificational Grammar, now known as Neurocognitive Linguistics)

- In this network there are no clear boundaries between different areas of knowledge - e.g. between 'lexicon' and 'grammar', or between 'linguistic meaning' and 'encyclopedic knowledge'. (From early Cognitive Linguistics)
- In particular, there is no clear boundary between 'internal' and 'external' facts about words, so a grammar should be able to incorporate sociolinguistic facts - e.g. the speaker of *jazzed* is an American. (From sociolinguistics)

In this theory, word-word dependency is a key concept, upon which the syntax and semantics of a sentence build. Dependents of a word are subcategorised into two types, i.e. complements and adjuncts. These two types of dependents play a significant role in this theory of grammar.

Let me give you a flavour of the syntax and semantics in WG, as shown in Figure 1.<sup>2</sup>

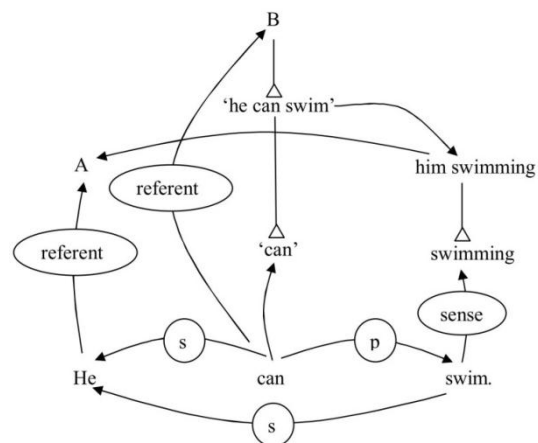


Figure 1: Syntax and Semantics in WG

### 3. The Data from Japanese and the Analysis

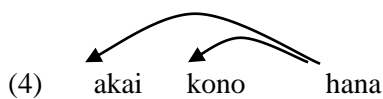
What is the structure of *akai kono hana*? Consider the following data first:

(2) akai kono hana

<sup>2</sup> A letter above or below the dependency arrow represents a grammatical function: 's' stands for subject, 'o' for object, 'c' for complement, 'a<' for pre-adjunct, '>a' for post-adjunct, etc. The vertical arrow shows the root (head, parent) of the sentence.

red this flower  
 (3) kono akai hana

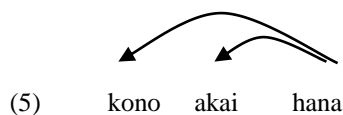
If we take the WG view that in a word combination like *akai hana*, the word which provides the basic meaning is the head (also called as parent in the paper) of the combination, and the other is its dependent (i.e. depends on it), then *hana* is the head of the whole structure *akai hana*. In general, the word which is expanded is the head and the words which expand it are said to depend on it. The structure for *akai kono hana* is shown in (4), where the arrow points from the head to its dependent.



The head has a certain number of characteristics; in a pair of words related by dependency, the head is the one

- from which the other word takes its position
- which controls the inflected form (if any) of the other
- which controls the possibility of occurrence of the other
- which denotes the more general case of which Head + Dependent is an instance (i.e. Head + Dependent is a kind of Head, not vice versa). (Hudson 1984)

Because there is no tangling in dependency relation in (4) and the No-tangling Principle requires that there should be no tangling in dependency lines when the order of two dependents is reversed, it is predicted that *kono akai hana* is also grammatical, which is in fact the case as in (5).<sup>3</sup>



The same dependency pattern is also found in similar structures in (6) - (9), where a different determiner *ano* is used with the common noun as the head in the NP.

- (6) ano subarasii asa  
 that beautiful morning  
 (7) subarasii ano asa  
 (8) ano ameno hi  
 that rainy day  
 (9) ameno ano hi

Much the same is true of a relative clause modifier used with a determiner as shown in (10) and (11).

- (10) ano karega katta hon  
 that he-Sub bought book  
 (11) karega katta ano hon

Thus, these data imply that nouns like *hana* etc are actually heads and the determiners, like other adjectives, are dependents in these nominal structures in Japanese.<sup>4</sup>

A further piece of evidence that the noun is a head in the so-called NPs in Japanese comes from the behaviour of two determiners and one adjective in the structure at issue. Consider further data in (12) - (17). Phrases like the following are all possible in Japanese.

- (12) John-no kono akai hon  
 John-Gen this red book  
 (13) John-no akai kono hon  
 (14) kono John-noakai hon  
 (15) kono akai John-nohon  
 (16) akai John-nokono hon  
 (17) akai kono John-nohon

Since all the permutations in order of the words *John-no*, *kono* and *akai* are allowed before the common noun and since *akai* is obviously an adjective and therefore a dependent of *hon*, we have to assume that the same is true of *John-no* and *kono* given the No-tangling Principle, although they both translate as determiners in English.

<sup>3</sup> The No-tangling Principle states that in surface structure no dependencies should tangle with each other - i.e. dependency lines must not cross except when required to do so for coordination or clitics.

<sup>4</sup> I notice that it is a matter for discussion whether or not Japanese demonstratives such as *kono*, *sono*, and *ano* are proper determiners in the X-bar tradition. For the sake of simplicity, let us suppose throughout the paper that these demonstratives can be called as determiners.

Morphologically, demonstratives such as *kono*, *sono*, and *ano* seem to be composed of *ko*, *so*, *a*, and a dependent particle *-no*, which explains why *kono*, etc. behave exactly the same as other adjectives, since *-no* changes the base pronoun into a kind of adjective, which attach quite freely with nouns as long as the derived structures are semantically interpreted.

As to the internal structure of *kono*, *kono* is considered to have the structure in which *ko*, deictic pronoun referring to a place 'more or less near the speaker, is attached to the genitive-case marker *-no*.

#### 4. The Data from English and the Analysis

In contrast, English involves a situation where only the structure *this red flower* corresponding to (3) is possible and *\*red this flower* corresponding to (2) is not allowed. Before getting into a detailed analysis of why this structure is ungrammatical in English, let us consider engrossing facts about the word order in English and try to find a way in which to explain the facts.

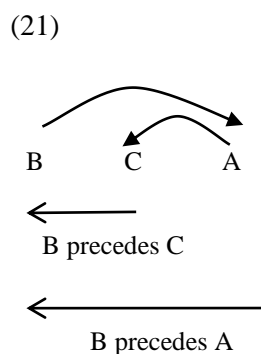
- (18) I teach bilingual students.
- (19) \*I bilingual teach students. (\* because the arc *bilingual* ← *students* crosses the arc *I* ← *teach*)

This fact is accounted for by the Precedence Concord Principle (PCP), as formulated in (20).

(20) Precedence Concord Principle :

A word must have the same precedence relation as its head to the latter's head. (Hudson 2010b)

Precedence concord is the very general principle that makes phrases hang together -- i.e. that in general bans discontinuous phrases. It assumes that words have 'precedence relations' to one another, showing which comes before which. Precedence concord means that two words have to have the same precedence relationship to some other word: so if A follows B, and C has precedence concord with A, then C must also follow B. The diagram in (21) represents the basic rationale of the Precedence Concord Principle (now known as 'Order Concord' in Hudson (2010b)).

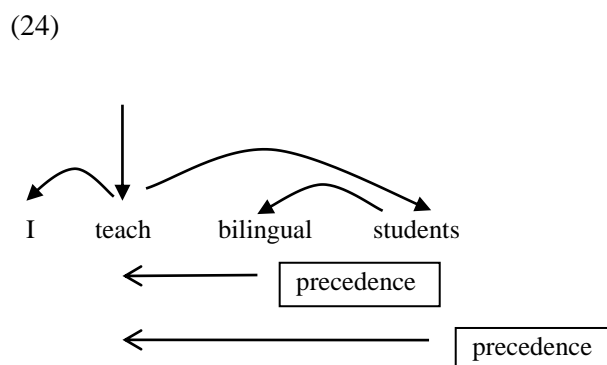


Thus, in (21) the word C has the same precedence concord as the word A to the word B. Put alternatively in terms of dependency, the principle states that if C depends on A and A on B, then C must have the same precedence (before/after) relations as A to B, as in (21).

To see how well it works to give an elegant elucidation for discontinuous phrases in English, let us come back to earlier examples (18) and (19), repeated as (22) and (23) below.

- (22) I teach bilingual students.
- (23) \*I bilingual teach students. (\* because the arc *bilingual* ← *students* crosses the arc *I* ← *teach*)

The diagram in (24) corresponds to the structure of (22). The precedence is displayed by arrows below the structure in (24) where *bilingual* has the same precedence as *students* to *teach*.

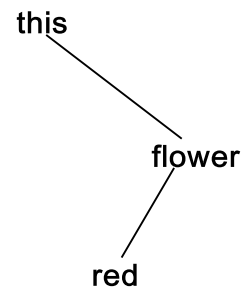
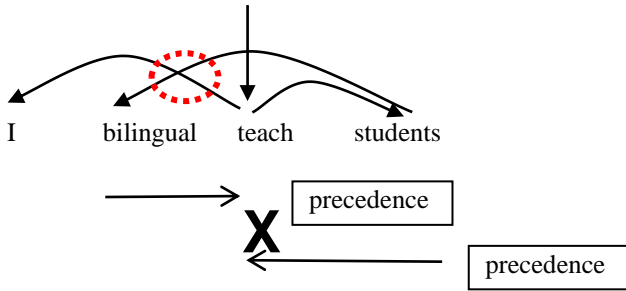


As shown in (24), if *students* in *I teach bilingual students* depends on *teach*, and follows *teach*, then any other word which depends on *students* must also follow *teach*. This is exactly the reason why *bilingual* has to come between *teach* and *students* in (24).

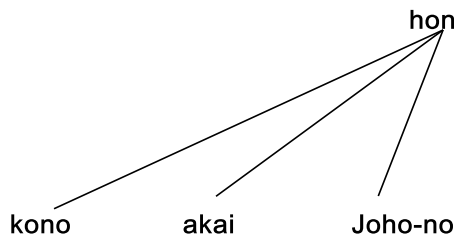
Let us consider then the case with (23), the structure of which is shown in (25). In (25) tangle of dependency line is represented by a

circle in broken line. The principle rules out *\*I bilingual teach students*, on the grounds that *bilingual* depends on *students* but does not share its precedence relation to *teach*, as in (25), where clash in precedence is indicated by two arrows pointing at each other below the diagram. (27)

(25)



What the PCP predicts will be much more transparent in the Tesnière-style stemma. The structure below represents *kono akai John-no hon* in stemma. (26)



The PCP predicts that the order of three words headed by *hon* will be free as long as they appear before their governing head *hon*.

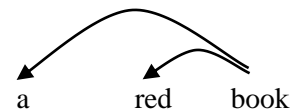
On the other hand, an order restriction on the three words in *this red flower* in English will be easily explained by the dependency relation between the words and their linear order (precedence in order). The principle predicts that *red* has to appear between *this* and *flower* because *flower*, dependent of *this*, appears after *this*, and *red* is a dependent of *flower*. See the structure in (27).

### 5. Why *\*red a book* Is not Possible

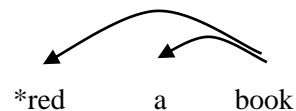
In this section, I will show within the framework of WG why we have to take a determiner as head in the NP in English. My claim is that the Precedence Concord Principle blocks the word order adjective > determiner > noun such as *\*red this flower* if determiners is defined as head in English.<sup>5</sup>

If we take a noun as head of the phrase, then what the No-tangling Principle will predict based on the dependency structure in (28) is that (29) should be grammatical, which on the contrary is not the case.

(28)



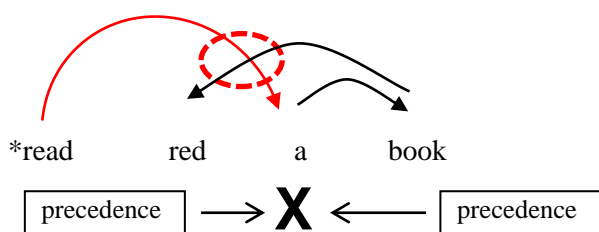
(29)



In contrast, to take a determiner rather than a noun as head, together with the Precedence Concord Principle will produce the correct result, which is attested by (30).

<sup>5</sup> ' $\beta > \alpha$ ' indicates that  $\beta$  precedes  $\alpha$ .

(30)



Although *red* is a dependent of *book* in (30), it does not have the same precedence as *book* to *a*, which is automatically predicted to be ungrammatical by the Precedence Concord Principle.

Additionally, there is also semantic evidence supporting that determiners are actually heads in English. They must be heads because *this flower* is an expansion of *this*, which can always occur without *flower*; it cannot be an expansion of *flower*, because this is impossible without *this*. Therefore *flower* must depend on *this*, not the other way round. In Japanese, on the other hand, *kore* (corresponding to *this*) cannot be expanded, but *hana* can, which implies that *hana* is a head in (2) or (3).

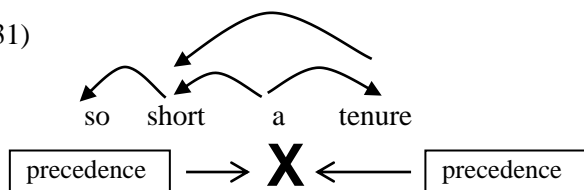
To sum up, fitting the required order of determiner > adjective > noun in English NPs into the grammar of English necessarily involves a rule which takes a determiner as head. This view is shared with the so-called DP analysis (Abney 1987).

## 6. Apparent Counter-examples

As Murata (2003) points out, however, there are structures which the Precedence Concord Principle seems to predict to be ungrammatical, yet do exist in English. Below are some such apparent counter-examples.

In (31) there is obviously violation of the Precedence Concord Principle with the word *short* (and also violation of the No-tangling Principle), which has to come to the right of *a*.

(31)



In English noun phrases the determiner canonically precedes the pronominal adjectives, both the lexical and the phrasal ones.

(32) a. a big house

b. a very big house

(33) a. \*big a house

b. \*very big a house

A notable exception are the adjectival phrases which are introduced by *as*, *so*, *too*, *how*, *this* and *that*. When they occur in a nominal which contains the indefinite article, they precede the determiner (Huddleston and Pullum 2002, 435).

(34) a. It's so good a bargain I can't resist buying it. (*ibid.*)

b. How serious a problem is it? (*ibid.*)

c. \*They're so good bargains I can't resist buying them. (van Eynde 2007)

d. \*How serious problems are they? (*ibid.*)

(35) a. \*It's a so good bargain I can't resist buying it. (*ibid.*)

b. \*A how serious problem is it? (*ibid.*)

This construction, for which Berman (1974) coined the term Big Mess Construction, only occurs in nominals with an indefinite article. It does not occur in nominal with another kind of determiner, as in (36a), nor in nominals without determiner, as in (36b).

(36) a. \*How serious some problem is it? (van Eynde 2007)

b. \*They are so good bargains I can't resist buying them. (*ibid.*)

c. How serious a problem is it? (Huddleston and Pullum 2002, 435)

d. \*How serious problems are they? (*ibid.*)

A further complication is provided by the APs which are introduced by *more* or *less*. They can either occur in the canonical position or in the exceptional one (Huddleston and Pullum 2002, 435).

(37) a. This is a more serious problem than the other. (*ibid.*)

b. This is more serious a problem than the other. (*ibid.*)

Also here, the exceptional position is only possible in combination with the indefinite article.

What makes the Big Mess Construction interesting is not only its idiosyncrasy and the descriptive challenges which it raises, but also the light which its treatment sheds on the issue of the trade-off between lexicalism and constructivism in formal grammar.

To pave the way for the treatment I first present my analysis of the internal structure of the relevant BMCs. It deals with the canonical order autonomously. The exceptional order, as exemplified by (38) to and (40), is modeled later in this section.

This alleged violation of the Precedence Concord Principle seen in the BMC, however, can be saved by introducing the idea of dividing the sentence's dependencies into two, i.e. the 'surface' dependencies and 'other' (*alias* 'extra') dependencies.

In general, the dependency structures in the surface structure are drawn above the words of the sentence - i.e. literally on the sentence's 'surface'. Other dependencies (called 'extra dependencies') are drawn below the sentence-words. This idea is a fairly recent addition to WG theory (which used to rely on the Adjacency Principle - Hudson 1984, 113-120). The basic idea is that not all dependencies are relevant to word order (i.e. visible to the Precedence Concord Principle), so we pick out a sub-set which are visible to the principle and show them separately from the others. This sub-set is the 'surface structure'. The diagram in (38) on the right column shows the surface structure above the words and the rest of the dependency structure below them.

The surface structure is a domain for the No-dangling Principle, which requires every word to have one surface parent. It also used to be a domain for the No-tangling Principle, but this has now been replaced by order concord as the means for keeping the words in a phrase together. In current theory, the surface structure contains all the dependencies that define landmarks. The term 'landmark' is borrowed from Langacker's Cognitive Grammar, where it is used for talking about meaning.<sup>6</sup> This

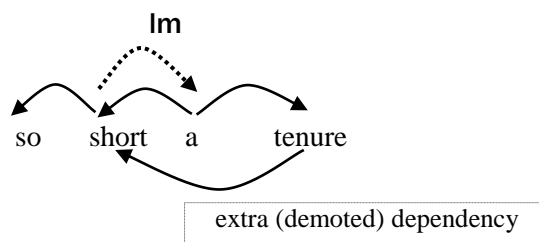
<sup>6</sup> For example, a spatial preposition defines a place by its relation to the 'landmark'; so in the phrase *in Rylestone*, Rylestone is the landmark and the place is somewhere within the City of Rylestone, and in *at the door* the door is the landmark. The landmark is the fixed identifiable reference-point for the relationship.

term is very useful in semantics, but it can be extended to syntax as well (Hudson 2010b). The idea is that almost every word is positioned in relation to some other word in syntax.

Here let us assume that where the word has more than one parents, only one is relevant - for example, in raising, only the higher parent is relevant; this is the basic idea behind the earlier notion of surface structure.

A word's landmark is typically one of its parents; but which one should count as the landmark? In (31) above *short* has two parents (i.e. *a* and *tenure*). In most cases the choice is forced by the special restriction called the Promotion Principle which favours the higher of two parents with the effect of 'promoting' the word to the highest possible rank in the sentence. In practice, though, the landmark arrows are almost redundant once you have marked all the dependencies because most words have only one parent, and that is their landmark. The only cases where words whose landmarks are worth distinguishing from parents are those which have more than one parents; and we already have a notation for making the relevant distinctions. This is the surface-structure notation, which demotes the dependencies that do not provide landmarks by drawing their arrows below the words. This allows the very much simpler notation below as in (38) where the extra dependency from *tenure* to *short* is now demoted as extra to become invisible to the Precedence Concord Principle, providing a favourable solution to the data, which would otherwise be predicted to be ungrammatical.

(38)



- If a word has more than one landmark, only the nearest landmark is visible to dependency analysis. The dependencies that do not provide landmarks are demoted. (cf. Hudson 2010b)

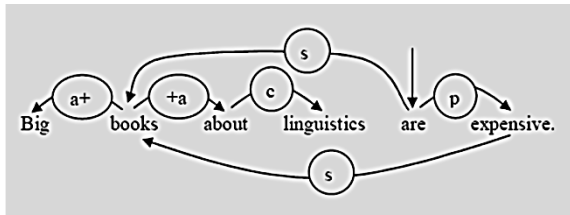
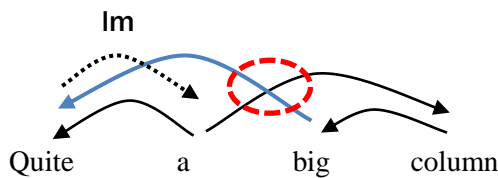


Figure 2: Landmarks shadow dependencies

This idea extends further to another case of seeming counter-examples as in (39). In (39) *quite* has two parents (i.e. *a* and *big*) at the surface, and a dependency relation from *big* to *quite* crosses the one between *a* and *column*, violating the No-tangling Principle.<sup>7</sup>

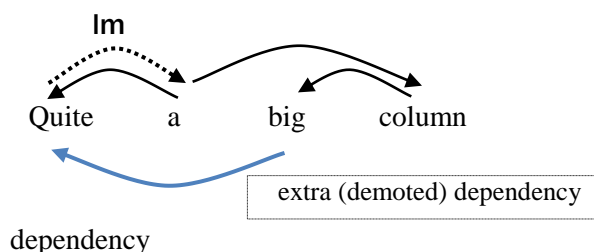
(39)



In (39), as *big* is a remoter parent to *quite*, which demotes the dependency from *big* to *quite* to create a new structure in (40).

(40)

So far, we have seen that alleged counter-examples can in fact be predicted to be grammatical in WG by taking only the surface dependency into account and excluding the extra



<sup>7</sup> 'Im' represents the relation 'landmark'.

## 7. Conclusion

In summary, I have shown why *kono* and *akai* are reversible in the structure *kono akai hana* in Japanese, while English allows only one corresponding structure. My arguments are based on the difference in grammatical category of *kono* and *this* in each language. From the dependency analysis above, the conclusion, then, is that the determiner is the head (parent) of a NP, and that the common noun is a complement in English NPs.

## Acknowledgments

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