

Linguistic Description and Theory*

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1. Introduction

In any discipline of the linguistic study, discovery and description of linguistic data is essential, particularly to those who study non-native languages as research objects, for example, to Korean or Japanese linguists who study the English language. We English linguists try to find out new interesting data concerning English and to describe them in some general ways to extract regularities underlying them. In this paper, I would like to demonstrate that linguistic theory plays a crucial role in finding out new linguistic data and in describing them in some general forms. For this purpose, I will bring up several types of English clausal constructions, and show that the observation of these constructions from a certain theoretical perspective enables us to find out interesting regularities, and that the regularities can be described in general, elegant ways by making use of two theoretical distinctions, namely the distinctions between full-fledged and reduced clauses, and between complement and non-complement positions. Both distinctions are concerned with the composition of clausal constructions to be defined by X-bar theory.

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2. Distribution of *that*- and null-*that*- clauses

It is widely considered that the conjunction or complementizer *that* in a finite embedded clause can be optionally deleted in colloquial or informal English (cf. Quirk, et al. 1985:1049).

- (1) a. They think {that/ \varnothing } he cheated on the exam.
 (complement of V)
 b. I am sure {that/ \varnothing } he cheated on the exam.
 (complement of A)

However, there are some environments where the *that*-deletion is never permitted. As such environments, Stowell (1981) points out a subject position in (2a), a topic position in (2b), and a complement position of a noun in (2c):

- (2) a. {That/* \varnothing } he cheated on the exam is clear.
 (subject position)
 b. {That/* \varnothing } he cheated on the exam, I don't doubt.
 (topic position)
 c. I don't believe the rumor {that/* \varnothing } he cheated on the exam.
 (complement of N)

Stowell (1981) attempts to distinguish the grammatical *that*-deletion in (1) from the ungrammatical one in (2) by assuming that the *that*-deletion leaves an empty category, which is subject to the Empty Category Principle. The Principle requires that an empty category must be properly governed. The notion of proper government is roughly defined as being complement to some types of lexical heads. It is assumed in Stowell (1981) that the lexical heads V and A in (1a) and (1b) are proper governors, whereas the head N in (2c) is not. Thus, in (1a) and (1b), the empty category left by the *that*-deletion, which is indicated by

φ , is properly governed by the lexical head, and satisfies the requirement of the Empty Category Principle. In (2c), on the other hand, φ is not properly governed because the head N is not assumed to be a proper governor, and violates the Empty Category Principle. The subject position in (2a) and the topic position in (2b) are not complement positions of any heads, and the empty categories φ in them are necessarily not properly governed.

Importantly, Stowell's theory makes the prediction that the *that*-deletion is not allowed in non-complement positions other than the subject position in (2a) and the topic position in (2b). This prediction is actually borne out by the fact that the *that*-deletion is not permitted in an extraposed position as in (3a) and in a cleft-focus position as in (3b), both of which are non-complement positions:

- (3) a. I think, because he was restless, {that/* φ } he cheated on the exam. (extraposed position)
 b. It was {that/* φ } I would run for the Presidency that I asserted. (cleft focus)

Predictability is a very important property of linguistic theory. Stowell's theory could make the correct prediction as to the facts in (3).

A *that*-clause appears as a complement of the head P in a limited number of idiomatic expressions, such as *in that* or *except that*.¹ In these idiomatic expressions, *that* cannot be deleted.

- (4) John is similar to Bill in {that/* φ } they are left-handed.
 (complement of P)

¹The head P generally cannot be followed by *that*-clause. This is because while the head P can only be followed by DP or NP, *that*-clause is assumed to be non-nominal projection.

This fact could be accounted for by the Empty Category Principle if the head P is assumed not to be a proper governor.

The distribution of *that*-clause and deleted-*that*-clause (which I henceforth call null-*that* clause for the reason to be clarified in section 2) is summarized as in (5):

(5) Distribution of *that*- and null-*that*- clauses

	complement positions				non-complement positions			
	V	A	N	P	subject	topic	extrap.	cleft
<i>that</i>	ok	ok	ok	ok	ok	ok	ok	ok
null- <i>that</i>	ok	ok	*	*	*	*	*	*

- (6) a complement position = a sister position of a head $\hat{=}$ a position governed by a head $\hat{=}$ a position in the checking domain of a head

Table (5) shows that *that*-clause can occur in all the positions, regardless of complement or non-complement positions, but null-*that* clause can occur only in the complement positions of V and A. The notion of complement position is defined as being a sister position of a head in the standard X-bar theory, and is almost equivalent to a position governed by a head, or a position in the checking domain of a head, as is stated in (6).

3. Distribution of *whether*- and *if*- clauses

The interrogative complementizer *whether* can alternate with the other interrogative complementizer *if* in some environments, but not in others. In Nakajima (1996), I have observed that the interrogative complementizer *whether* is distributed similarly to the declarative complementizer *that*, and *if* is distributed similarly to null-*that*. Namely, *whether* can appear in all the environments

in (5) where *that* can appear, and *if* can appear only in the environments where null-*that* can appear. More specifically, *if*-clause can occur only in the complement positions of V and A, but not in the complement positions of N and P, nor in any of the non-complement positions:

- (7) a. I wonder {whether/if} he is a spy.
(complement of V)
- b. I am not sure {whether/if} he is a spy.
(complement of A)
- c. We must answer the question {whether/*if} he is a spy.
(complement of N)
- d. They are interested in {whether/*if} he is a spy.
(complement of P)
- e. {Whether/*If} he is a spy is uncertain.
(subject position)
- f. {Whether/*If} he is a spy, nobody is certain.
(topic position)
- g. I am not sure, because I have not met him, {whether/*if} he is a spy.
(extraposed position)
- h. It is {whether/*if} you were planning to leave that I asked you.
(cleft focus)

The observation in (7) can be summarized as in table (8):

(8) Distribution of *whether*- and *if*- clauses

	complement positions				non-complement positions			
	V	A	N	P	subject	topic	extrap.	cleft
<i>whether</i>	ok	ok	ok	ok	ok	ok	ok	ok
<i>if</i>	ok	ok	*	*	*	*	*	*

The comparison of table (8) with table (5) clearly shows the distributional parallelism between *that* and *whether* on one hand, and the one between null-*that* and *if* on the other hand.

To the best of my knowledge, such parallelisms between the declarative and the interrogative complementizers had not been noticed in the literature until I pointed out in my article of 1996. Stowell's (1981) theory is important in that it suggests a hint to consider the environments where *whether* alternates with *if*. His theory is, however, inadequate, because the complementizer *if*, which is distributed like null-*that*, is undoubtedly not an empty category, and its distribution cannot be accounted for by the Empty Category Principle. Stowell's (1981) Empty Category Principle approach cannot capture the distributional parallelism between null-*that* and *if*.

I have assumed in Nakajima (1996) that null-*that* is not a deletion site but an empty or null complementizer (see further Nakajima (2000) for this point). I have furthermore maintained that *that*-clause and *whether*-clause on one hand and null-*that* clause and *if*-clause on the other are different in the internal composition of their syntactic structures. In X-bar theory, it is assumed that a clause consists of several maximal projections, and that its outermost maximal projection is CP in a full-fledged clause. When a clause lacks CP and its outermost maximal projection is some maximal projection which occurs inside of CP in a full-fledged clause, it is a reduced clause.

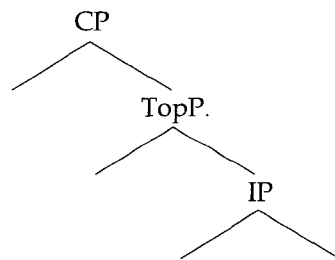
- (9) a. Full-fledged clause: a clause whose outermost maximal projection is CP.
 b. Reduced clause: a clause which lacks CP and whose outermost maximal projection is some maximal projection which occurs inside of CP in a full-fledged clause.

I have assumed that *that*-clause and *whether*-clause are full-

fledged clauses, whose outermost maximal projection is CP, as is shown in (10a), whereas null-*that* clause and *if*-clause are reduced clauses, which lack CP, and whose outermost maximal projection is TopP, as is shown in (10b). The name of TopP is irrelevant here; it might be α P, β P, or whatever. What is crucial is that a clause composed of TopP or something else is not a full-fledged, but a reduced clause.

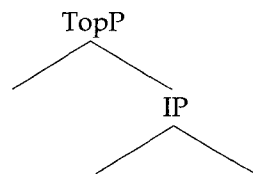
(10) a. *that*-clause/*whether*-clause

(full clause)



b. null-*that* clause/*if*-clause

(reduced clause)



It is easily understandable that null-*that* clause is a reduced clause, because it apparently lacks a complementizer which appears in a full-fledged clause. It might be harder to understand that *if*-clause is a reduced clause, because it has the overt interrogative complementizer *if*. However, *if*-clause behaves similarly to null-*that* clause, just like *whether*-clause behaves similarly to *that*-clause, with regard to Topicalization in (11) and Negative Inversion in (12). These operations are basically possible in *that*-clause and *whether*-clause, but not in null-*that* clause and *if*-clause:²⁾

- (11) a. John believes [*that*/**φ*] Bill, Mary doesn't like].
 b. ?I wonder [*whether*/**if*] Bill, Mary likes].
- (12) a. They believe [*that*/**φ*] at no time at all would John
 volunteer].
 b. I wonder [*whether*/**if*] at no time at all would John
 volunteer].

The contrasts in (11) and (12) can be accounted for by the above-mentioned assumption that the full-fledged clauses (*that*-clause and *whether*-clause) and the reduced clauses (*null-that* clause and *if*-clause) are different in the composition of their structures. In the structure of a full-fledged clause in (10a), the complementizer *that* or *whether* occurs in CP, and TopP is vacant; thus, a topicalized phrase, or an inverted negative phrase and an inverted auxiliary, can move into the vacant TopP. In the structure of a reduced clause in (10b), on the other hand, the complementizer *null-that* or *if* occurs in TopP, and therefore, there is no room for a topicalized phrase or inverted elements to move into. Thus, Topicalization or Negative Inversion cannot apply in a reduced clause. Important here is the syntactic behavior similarity between *null-that* clause and *if*-clause as well as between *that*-clause and *whether*-clause, and furthermore, the syntactic behavior difference between the two types of interrogative clauses, *whether*-clause and *if*-clause.

Whether-clause and *if*-clause differ with regard to the possibility of an infinitival clause also; *whether*-clause, but not *if*-clause, allows for an infinitival clause with a PRO subject:

²The sentence in (12a) with *whether* is less acceptable than the one in (11a) with *that*. This subtle acceptability difference comes from the pragmatic fact that Topicalization or Root Transformations (Emonds 1976) in general readily apply in asserted environments, and the interrogative embedded clause in (12a) is not asserted but questioned.

(13) I wonder [{whether/*if} PRO to leave soon].

On the assumption of Watanabe (1993) that a PRO subject occurs only in CP, it must be supposed that *whether*-clause is CP, as illustrated in (10a), while *if*-clause lacks CP, as shown in (10b).

I assume that a full clause is a canonical structural realization of a clause or of the theta-role of Proposition (Chomsky 1986), and a reduced clause is its marked structural realization. A reduced clause, being marked, is subject to the checking of whether the head selects an appropriate type of complement clause. The checking is conducted in the checking domain of a head, namely in the head-complement relation, as paraphrased in (6). The reduced clauses, null-*that* clause and *if*-clause, need to undergo the checking, but cannot do so if they are in non-complement positions; thus, the reduced clauses cannot occur in non-complement positions. As to why the reduced clauses cannot occur in the complement positions of the head N and P, I refer the audience to Nakajima (1996). The idea therein is roughly that null-*that* clause and *if*-clause are verbal projections, and can be checked only by the verbal heads, V and A.

The point relevant to the following argument is the descriptive generalization stated in (14):

(14) Reduced clauses cannot occur in non-complement positions.

4. Distribution of Poss-ing and Acc-ing

We have seen the distribution of the finite declarative clauses and that of the finite interrogative clauses. Let us see a third type of clausal construction, namely, gerundive constructions. There are at least two types of gerund;³ one is Poss-ing (i.e.,

³Another type of gerund is the one that is called *of*-ing, such as *John's criticizing of my article*. This type of gerund is much more noun-like than

gerund with a subject in the possessive form) and the other is Acc-ing (i.e., gerund with a subject in the accusative form). Poss-ing and Acc-ing can appear in the complement positions of V and P, but not of A and N. This is presumably because of the Case agreement property of the heads that are followed by gerunds. What is interesting to us here is that Poss-ing can be distributed in all the non-complement positions in (5), while Acc-ing cannot occur in any of the non-complement positions without difficulty. The examples in (15) are all those in which the gerunds appear in the non-complement positions:

- (15) a. [{{His/*Him} saying that}] surprised us.
 (subject position) (Celce-Murcia and Larsen-Freeman 1983:475; Battistella 1983:3)
- b. [{{Fred's/*Fred} singing the national anthem}], everyone imagined ____.
 (topic position) (Reuland 1983:108)
- c. We took ____ into consideration [{{Mildren's/*Mildren} having been heavily sedated at the time}].
 (extraposed position) (Ross 1973:166)
- d. It was [{{John's/*John} kissing Mary}] that they reported ____.
 (cleft focus)

The observation in (15) can be summarized as in table (16):

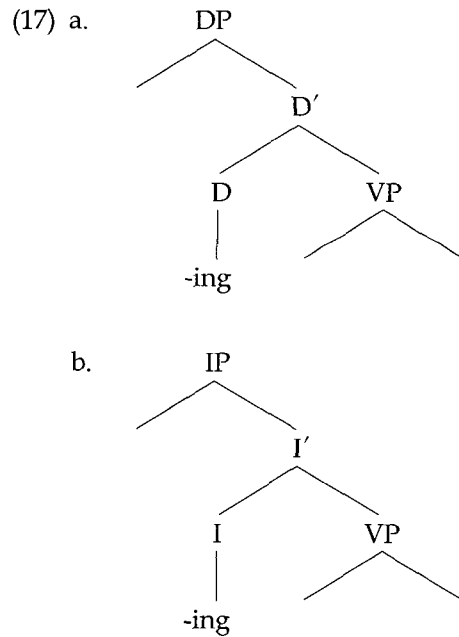
(16) Distribution of Poss-ing and Acc-ing

	complement positions				non-complement positions			
	V	A	N	P	subject	topic	extrap.	cleft
Poss-ing	ok	*	*	ok	ok	ok	ok	ok
Acc-ing	ok	*	*	ok	*	*	*	*

Poss-ing, let alone Acc-ing.

In the non-complement positions on the right half of the table, the distribution of *Poss-ing* and that of *Acc-ing* are clearly in contrast.

I have maintained in Nakajima (1991) that *Poss-ing* is DP, a full-fledged category of a noun phrase, as is shown in (17a), while *Acc-ing* is a reduced clause whose outermost maximal projection is IP, as is shown in (17b):



In (17b), the head I dominates the affix *ing*, which assigns the Accusative case to its specifier, and its Case property is inherited by its maximal projection IP; thus, the *Acc-ing* gerund itself also has the Accusative case. *Acc-ing* occurs only in the complements of the heads which can check off its Accusative case, namely in the complement positions of a transitive V and P. *Acc-ing* is a reduced clause because it is short of the outermost projection CP which forms a full-fledged clause. It follows from (14), then, that *Acc-ing* cannot occur in any of the non-complement positions, as

demonstrated in (15).

The structures in (17a) and (17b) for Poss-ing and Acc-ing are supported by the fact that the latter, but not the former, allows for the occurrence of elements that can occur in IP, but not in DP. For example, the expletive *there* and a sentential adverb can occur in IP, but not in DP:

- (18) a. [_{IP} There exist many errors in his book].
 b. [_{IP} His father certainly donated much money to the church].

- (19) a. *_{[DP} there's existence of many errors in his book]
 b. *_{[DP} his father's certainly donation of much money]

These elements can occur in Acc-ing (20), but not in Poss-ing (21):⁴

- (20) a. He acknowledged [*there* being a lot of errors in his book].
 b. He suggested [his father *certainly* donating much money to the church].
 (21) a. *He acknowledged [*there's* being a lot of errors in his book].
 b. *He suggested [his father's *certainly* donating much money to the church].

The expletive *there* is assumed to be inserted in the Specifier position of IP, and a sentential adverb modifies a whole of IP

⁴One might argue that (18a) cannot be evidence for the assumption of Poss-ing being DP, because the expletive *there* morphologically cannot be in the possessive form. Notice, however, that this morphological inflection is required by the position where nominal phrases occur, namely the pre-head position in DP. Because of this requirement, the occurrence of *there* in (20a) is obliged to be in the morphologically disallowed form, that is, in the possessive form, ending in being ungrammatical. Given that Poss-ing has DP as its outermost maximal projection, it follows that the occurrence of *there* in (18a) is also obliged to be in the possessive form, and is ungrammatical for the same reason.

and is assumed to be affiliated with IP. Thus, the grammaticalities of the examples in (20) indicate that Acc-ing involves IP, as is shown in (17b), and the ungrammaticalities of the examples in (21) indicate that Poss-ing is DP, as is shown in (17a).

5. ECM Complement and Raising Complement

One of the clause types that are widely assumed to be reduced ones is a complement clause embedded under Exceptionally Case-Marking (ECM) verbs. A complement clause under an ECM verb, an example of which is illustrated in (22), is assumed to undergo the so-called S-bar deletion, or to be composed of IP rather than CP.

- (22) I believe [him to be honest].
(complement of V)

Since this type of complement clause is a reduced clause and does not have CP, its subject is alleged to be exceptionally case-marked by a matrix verb (Chomsky 1981).

Given that an ECM complement clause is a reduced clause, it is predicted from the generalization in (14) that this type of complement clause cannot occur in non-complement positions. Actually, an ECM complement clause cannot occur in such positions as a subject position (23a), a topic position (23b), an extraposed position (23c), or a cleft focus position (23d):

- (23) a. *[Him to be honest] is widely believed.
(subject position)
b. *[Him to be honest], I believe.
(topic position)
c. *I believe sincerely [him to be honest].
(extraposed position)

- d. *It is [him to be honest] that I believe.
(cleft focus)

Though I do not demonstrate examples with ECM complement clauses in the complement positions of the lexical heads (except for (22)), their distribution in the complement and non-complement positions can be summarized as in table (24):

(24) Distribution of ECM complement clauses

	complement positions				non-complement positions			
	V	A	N	P	subject	topic	extrap.	cleft
ECM clause	ok	*	*	*	*	*	*	*

One conceivable way to account for the facts in (23), that is, the ungrammaticalities of ECM complement clauses in the non-complement positions, might be to have recourse to the Case Filter, which requires that every NP or DP be Case-assigned. The subjects of ECM complement clauses in the non-complement positions are not governed, and therefore, cannot be Case-assigned by the matrix verbs and fail to satisfy the Case Filter. However, this Case approach is not tenable, because the fact in (25) that an NP can occur in a topic position (25a), in an extraposed position (25b), or in a cleft focus position (25c), indicates that the noun phrases in the non-complement positions can inherit a Case from their original positions in some way, say, in terms of A-bar chain:

- (25) a. Him, I think Mary loves.
b. I saw ___ yesterday [the man who wished to eat natto].
c. It is him that Mary loves.

Given this, the embedded subjects in (23) can also be assumed to inherit a Case from their original positions. The ungrammaticalities

in (23), thus, cannot be attributed to the suggested failure of the embedded subject to be Case-assigned. They must be ascribed to the fact that the ECM complement clauses are reduced clauses, and they are in the positions where they are not allowed to occur, namely, in the non-complement positions.

Another well-known type of reduced clause is the complement clause of a raising predicate, which is also assumed to undergo S-bar deletion or to be composed of IP rather than CP. A few examples of Raising complement clauses are illustrated in (26), where the bracketed clauses are composed of IP:

- (26) a. John seems [_S to be happy].
 (complement of V)
 b. They are likely [_S to arrive early].
 (complement of A)

Interestingly, Chomsky (1999) cites the contrast in (27) taken from Rizzi (1982):

- (27) a. It is [to go home (every morning)] that John prefers.
 (cleft focus)
 b. *It is [to go home (every morning)] that John seems.

The sole relevant difference between (27a) and (27b) is the choice of the matrix verbs. The matrix verb in (27a), *prefers*, takes CP or a full clause as its complement clause, while the matrix verb in (27b), *seem*, takes IP or a reduced clause as its complement clause. The assumption that the complement clause of the verb *prefer* is a full-fledged clause may be suggested by the fact that it manifests itself as a *that*-clause (28a) or as a *for-to* infinitival clause (28b):

- (28) a. I prefer that you call me Rocky.
 b. I prefer for John to go home every morning.

The contrast between (27a) and (27b) is in consonance with the prediction made by the generalization in (14), namely, that the full-fledge complement clause in (27a), but not the reduced complement clause in (27b), can occur in the non-complement position.

A contrast similar to the one between (27a) and (27b) is observed in other non-complement positions:

(30) a. [To go home every morning], I think that John prefers.
(topic position)

b. *[To go home every morning], I think that John seems.

(31) a. John prefers, according to his college, [to go home every morning].

(extrap.)

b. *John seems, according to his college, [to go home every morning].

The distribution of the complement clauses of raising predicates in the complement and non-complement positions can be summarized as in table (32). Table (32) also compares the distribution of a Raising complement clause with that a full-fledged infinitival clause:

(32) Distribution of full- and Raising-clauses

	complement positions				non-complement positions			
	V	A	N	P	subject	topic	extrap.	cleft
full clause	ok	ok	ok	*	ok	ok	ok	ok
Raising clause	ok	ok	*	*	*	*	*	*

The right half of the table (32) shows that while the full-fledged clauses can occur in the non-complement positions freely, the

Raising clauses (which are reduced ones) cannot occur in those positions at all. This result is in accordance with what is predicted by (14).

Another point to be noticed in table (32) is that the distribution of Raising complement clauses is completely the same as that of null-*that* clauses in (5) and of *if*-clauses in (8). This distributional fact suggests that null-*that* clauses and *if*-clauses are also reduced clauses, as has been claimed in this paper, because they are distributed completely in parallel with the type of clauses which is widely assumed to be a reduced clause, namely, with Raising complement clauses.

6. Summary

We have brought up several distinct types of English clausal constructions, and have been lead to the descriptive generalization in (14), repeated here as (33):

(33) Reduced clauses cannot occur in non-complement positions.

The generalization in (33) refers to two theory-internal notions, reduced clauses and non-complement positions. Both notions are concerned with the composition of syntactic structures to be defined by X-bar theory. Without these theoretical notions, it would be difficult to describe in a general form the fact that certain types of complement clauses—namely, null-*that* clauses, *if*-clauses, Acc-ing gerund, ECM complement clauses, and Raising complement clauses—cannot occur in particular syntactic positions. Instead, one would have to describe this fact for each clause type, in such a way that null-*that* clauses cannot occur in such and such positions, and *if*-clauses cannot occur in such and such positions, and Acc-ing gerund cannot occur in such and such positions, and so on, although the positions in which they

cannot occur are totally the same. Given the terminology of X-bar theory, however, it has turned out that these types of complement clauses are all reduced clauses, and the positions where they cannot occur are all non-complement positions. Then, the generalization has obtained that reduced clauses cannot occur in non-complement positions. It is a theoretical issue, and differs depending upon theories, how to explain why such a descriptive generalization holds at all.

Hopefully, the demonstration here provides a piece of evidence showing that a theory or a particular theoretical notion plays an important role in the description of linguistic facts. Moreover, I have made a crucial prediction on the basis of the well-accepted theoretical assumption that ECM complement clauses and Raising complement clauses are reduced clauses; namely, the prediction that these types of clauses cannot occur in non-complement positions. The prediction based upon the theoretical assumption is actually borne out, as illustrated earlier. The illustration of the prediction, I hope, shows that a theory or a particular theoretical assumption, coupled with another theoretical assumption, allows us to make some interesting predictions. Predictions serve to widen a range of linguistic facts to be described. A theory plays a crucial part in finding out interesting facts as well as in describing them in some general forms.

Finally, let me state a few words as to the recent generative theory in connection with linguistic description. The recent generative theory is getting more and more abstract. I think it is moving toward a good direction as cognitive science. It will contribute, among others, to the inquiry into what is knowledge that is very specific to language faculty, and into how it interacts with other cognitive faculties. However, I am suspicious about how much the abstract generative theory will contribute to the description of linguistic facts in a particular language. While generative theory is claimed to aim both for descriptive

adequacy and for explanatory adequacy, the recent generative theory is likely to put much more weight on explanatory adequacy. In my view, a less abstract theory is enough, or even more useful, for the purpose of linguistic description. Of course, how abstract theory one should adopt as a framework differs depending upon what aspect of language one attempts to describe. What I would like to emphasize here is that linguistic theory does not conflict with linguistic description, and a linguistic theory with an appropriate degree of abstractness serves as a tool for finding out new interesting facts, as well as for describing them in some general, elegant forms.

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