

Do So and the Structure of VP

Yongkwon Jung*

Contents

1. Introduction
2. *Do So* as a Non-Proform
3. *Do So* as a Pro-form
4. The Structure of *Do So* VP
5. Conclusion

1. Introduction

The purpose of this paper is to examine *do so* constructions in English, investigate a few analyses, and explore the possibility of finding out an appropriate structure of VP, based on their syntactic and semantic characteristics. Culicover and Jackendoff (2005) do not regard *do so* as a replacement of the antecedent phrase. This analysis seems to account for some aspects of *do so* constructions with adjuncts relatively well. However, it contains a few fundamental problems in relation to the pro-form *do so*. Unlike this analysis, Sobin (2008) analyzes *do so* as a VP pro-form. This analysis captures some syntactic and semantic characteristics of this construction well, but it also fails to get some simplicity and generalization in accounting for *do so* and the structure of VP. In this respect, I wish to try to investigate the very nature of the *do*

* Hankuk University of Foreign Studies

so construction and explain some problems related to both approaches to this construction. I will argue that both Culicover and Jackendoff's (2005) and Sobin's (2008) analyses are inappropriate in some respects, because they fail to capture some syntactic or semantic characteristics. Therefore, I will propose a new analysis that solves these problems.

2. *Do So* as a Non-Proform

Culicover and Jackendoff (2005: 284) (henceforth C&J) take *do so* as representative of *do X* anaphora and point out that it requires its antecedent to be an action, whereas VP ellipsis does not.

(1) *Do so* anaphora

- a. *Robin dislikes Ozzie, but Leslie doesn't do so. [Stative]
- b. ?*Robin fell out the window, but Leslie didn't do so.
[Non-action event]
- c. Robin read the newspaper today, but Leslie didn't do so. [Action]

(2) VP ellipsis

- a. Robin dislikes Ozzie, but Leslie doesn't. [Stative]
- b. Robin fell out the window, but Leslie didn't. [Non-action event]
- c. Robin read the newspaper today, but Leslie didn't. [Action]

The sentence (1a) indicates that the stative verb *dislike*, unlike the action verb *read* in (1c), cannot occur in the *do so* construction. However, sentences with VP ellipsis occur freely with stative verbs as in (2a). This indicates that the *do so* construction is more restrictive than VP ellipsis.

In connection with the above examples (1–2), C&J (2005: 284) claim that the elliptical clause may include one or more orphan constituents. They give the following examples to discuss orphans with *do so*.

- (3) a. Robin smokes a pipe after dinner, and Leslie does so during breakfast. [*do so* = smokes a pipe]
 b. Robin flipped the hamburgers with a spatula, and Leslie did so with a chef's knife. [*do so* = flip the hamburgers]
- (4) Mary will cook the potatoes for fifteen minutes in the morning, and Susan
 a. will do so for twenty minutes in the evening. [*do so* = cook the potatoes]
 b. will do so in the evening. [*do so* = cook the potatoes for 15 minutes]

C&J argue that the orphan associated with *do so* in the above examples is an adjunct, not an argument. However, they do not give a reason for this.

C&J (2005: 285) give the following example in which the complement of the antecedent VP is not included in the reference of *do so*.

- (5) John turned the hot dog down flat, but he wouldn't have done so with filet mignon.

C&J use the sentence (5) as evidence against the ProVP theory of *do so*. In this example, the antecedent VP has its complement, *the hot dog*, but this complement is not included in the *do so*, as we see from the adjunct *with filet mignon*. With respect to this kind of construction, C&J do not give any special insights into why sentence (5) should be possible and why externalized arguments must take an adjunct form. Above all, they do not try to capture the relation between a variant of the *do so* construction¹⁾ such as (5) and the normal *do so* construction as shown in the

1) Sobin (2008: 155) points out that the externalization of arguments as adjuncts is less than mainstream acceptable. Besides, he adds that C&J's recounting such sentences requires special emphasis.

following examples of Sobin (2008: 156).

- (6) a. John ate a hot dog, and Mary did so too.
 b. John produced a big belch, but Mary didn't do so.
 c. John broke a cup, and Mary did so too.

In addition, this variant of the *do so* construction is not available in common basic short sentences such as the examples in (7) of Sobin (2008: 156), whereas the normal *do so* construction is as in (6) above.

- (7) a. *John ate a hot dog, and Mary did so with a hamburger.
 b. *John produced a big belch, but Mary only did so with a tiny burp.
 c. *John broke a cup, and Mary did so with a saucer.

The contrast between (6) and (7) leads us to conclude that the sentence (5), which has argument externalization, is exceptional rather than normal with respect to the *do so* construction.

Moreover, it is not easy to deny the fact that externalization of arguments is not independent from the VP, but dependent on it. In other words, it is deeply related to the VP. Consider the following examples of Sobin (2008: 156).

- (8) a. @John turned the hot dog down flat, but he wouldn't have done so with a new tie.
 b. @John turned the hot dog down flat, but he wouldn't have done so with a ticket to a football game.

Sobin argues that the sentences (8a–b) show an inappropriate or highly unlikely use of *do so* (marked with “@”). He points out that they are worse than (5) or (9a–b).

- (9) a. John turned the hot dog down flat, but he wouldn't have turned down a new tie.
 b. John turned the hot dog down flat, but he wouldn't have turned down a ticket to a football game.

The examples in (9) indicate that *do so* with an externalized argument should not only refer to an action that agrees with that of its antecedent VP, but also refer to the object. In other words, the substituted object should be of the same type. *Do so* in (5) refers to turning down food. In addition, the substituted phrase *filet mignon* belongs to the same type *food*, thus agreeing with the object *the hot dog*. In this respect, C&J's (2005) analysis of the *do so* construction reveals a few defects.

First of all, it fails to capture the essential relationship between the antecedent VP and the externalized argument in the adjunct, because it focuses on capturing the surface relationship, rather than on finding out the underlying one. Consequently, this leads C&J to give the following *do so* rule in (10).

(10) *Do so* anaphora:

Syntax: [_{vp}[_v do][_? so] <Y_{P_i}^{ORPH}>]^{IL}

CS: [_{Action} \mathcal{F} (...); ... <Y_i> ...] (C&J 2005: 289)

The syntax is straightforward: it is a VP consisting of *do so* plus an optional YP (in < >) marked as an orphan (more generally, there can be multiple orphans). The VP is connected by indirect licensing to an antecedent; the orphan is connected to a target within the antecedent. In the semantics, the interpretation of *do so* is stipulated as an Action (which is likely inherited from the lexical semantics of the verb *do*); this restricts the antecedent to Actions as well. Within the CS, there is the familiar open function \mathcal{F} whose content is filled in from the antecedent by indirect

licensing, and the optional semantic constituent *Y* corresponding to the orphan falls within the domain of \mathcal{F} .

Second, C&J's rule (10) does not give a clear reason why an argument must appear in adjunct form when it can be externalized. In this respect, it may have difficulty in accounting for the *do so* construction systematically.

Third, *do so* appears to be ProVP-like unlike C&J's analysis. Consider the following examples of Sobin (2008: 150).

- (11) a. (Mary does a backflip.)
 b. I bet you can't do that/it/the same thing/something similar.
 c. *I bet you can't do so.

According to Sobin, (11b), but not (11c), is a possible response to the physical act described in (11a). These examples indicate that *do X* may be used with a nonlinguistic antecedent, but *do so* may not.

Next, consider the following sentences of Sobin (2008: 150).

- (12) As for some of the crazy stunts that took place, ...
 a. Bill devoured a ham, and Mary did something (similar) with a chicken.
 b. ... and Mary did a similar thing with a chicken.
 c. ... and Mary did the same thing with a chicken.
 d. ... and Mary did that with a chicken.
 e. ... and Mary did it with a chicken.
 f. *... and Mary did so with a chicken.

Do X expressions show an external object in an adjunct form as in (12a–e), whereas the parallel *do so* does not as in (12f). This indicates that *do so* does not have the same distribution as the other *do X* expressions. The latter exhibit semantic content independent of the

antecedent, while the former does not. In this respect, it seems that *do so* is distinct from the other *do X* expressions, and that it is akin to ProVP, since it does not show independent semantic content. Contrary to this way of analysis of the *do so* construction, Sobin (2008) analyzes this construction from a different point of view. It will be shown, in section 3, how well Sobin's analysis works with respect to this construction.

3. *Do So* as a Pro-form

In the preceding section, we examined C&J's analysis of *do so* as a non-proform. C&J argue that *do so* cannot be explained by some process of deletion or replacement of the antecedent phrase, and that *do so* is not diagnostic of a phrase. Their claim is that *do so* refers to unfocused material and remainders focused material in a flat VP.

C&J support this claim by what they call “vehicle change”(Fiengo and May 1994). Consider the example sentence in (13) of Sobin (2008: 149).

(13) Mary is eating snails, but Bill could never do so.

Do so in (13) must correspond to *eat snails* rather than to *eating snails*. C&J take this lack of a tight correspondence between *do so* and what would be its antecedent as evidence that *do so* is not the product of replacing a phrase identical to the antecedent phrase.

Contrary to this analysis, Sobin (2008: 151) argues that the fact of vehicle change in *do so* constructions may not constitute against viewing *do so* as VP anaphora. He argues that C&J obscure a distinction among anaphoric expressions argued for by Hankamer and Sag (1976), i.e., “deep” and “surface” anaphora, in order to put *do so* into a single group with other

do X expressions. Hankamer and Sag (1976: 392) state that anaphoric processes are of two kinds: “deep” anaphora and “surface” anaphora. The former allows pragmatic control, and has other properties indicating that the anaphoric relation is determined at an essentially presyntactic level, whereas the latter requires a coherent syntactic antecedent in surface structure and otherwise behaves as a purely superficial syntactic process. Deep anaphora (e.g., *do it/that*) admits pragmatic control, as in (11b), whereas surface anaphora (e.g., *do so*) does not, as in (11c).

Sobin (2008) argues that if we can lump deep anaphora and surface anaphora into a single group and use features of one type of expression to characterize and explain the other, as C&J try to do in connection with *do so/do X*, then we should be able to do this generally, and in particular in the discussion of vehicle change. Vehicle change is a mismatch of features or morphology between a syntactic element and its antecedent. It is known among pro-forms. Consider the following example containing gender neutralization, where a plural pronoun (admittedly a deep anaphor, in contrast to *do so*) is invoked to avoid an inappropriately delimited masculine or feminine reference to a singular NP in spoken English.

- (14) *Each person* takes *their* work home in the afternoon, and *they* bring it back the next morning. [Sobin 2008: 150]

Since words such as *she*, *he*, *their*, and *they* have the distribution of NPs/DPs, they are considered NP/DP pro-forms. In this respect, as is pointed out by Sobin, vehicle change would not be a compelling argument against the status of an expression as a pro-form corresponding to a phrase if we assume that we are allowed to mix deep and surface anaphora in discussing properties of pro-forms. On the other hand, if we should not freely mix deep and surface anaphora, then combining *do so* with *do X* expressions into a single category is not as viable, and the behavior of *do*

X expressions should not be used to indirectly characterize *do so*.

Above all, surface anaphora, which is characterized as ellipsis of syntactic material under identity, has been recognized as admitting some amount of vehicle change. This is seen in Lasnik's (1999: 108) analysis of morphological non-identity in VP-ellipsis and in Merchant's (2008) analysis of non-identity of voice in VP-ellipsis versus pseudogapping. From all these facts, Sobin (2008) concludes that vehicle change in *do so* constructions may not constitute evidence against viewing *do so* as VP anaphora.

Sobin (2008: 151) supports his argument of *do so* as a ProVP²⁾ by the following examples.

- (15) Max lit a cigar in the dining room with a match, ...
- a. ... and Mary did so too.
 - b. ... and Mary did so with a Zippo.
 - c. ... and Mary did so in the living room with a Zippo.
 - d. *... and Mary did so a cigarette.

As is noted by C&J, *do so* minimally corresponds to a verb and any complements present (with the possible exception noted earlier in (5)). The *do so* constructions in (15a–c) are acceptable, but (15d) is not. The unacceptability of (15d) seems to be related to the very nature of *do so* constructions. In other words, the complement of the verb should be contained in *do so* when the verb is transitive. For this reason, the complement *a cigarette* should be within *do so*. On the contrary, in (15d), it is out of *do so*, thus making the sentence unacceptable. In contrast to (15d), when the verb is intransitive, *do so* may replace only the verb, as in (16).

2) Sobin assumes that *do so* as a ProVP cannot structurally correspond to anything but a VP, and that no transitive can form a VP without its complement(s).

(16) Mary laughed, and Max did so too.

Sobin uses this behavior as a strong indication that *do so* is a ProVP. I agree with him.³⁾

Next, let us examine Sobin's argument that *do so* constructions are not simply orphan–target constructions. As we have seen earlier, when a *do so* construction exhibits an orphan, it is generally an adjunct. The apparent matching and sprouting of adjuncts occur in *do so* constructions, as in the following examples of Sobin (2008: 154).

- (17) a. Mary ate a hamburger at 6 o'clock.
 b. No, she did so at 7 o'clock. (= matching)
 c. Mary ate a hamburger.
 d. Yes, she did so at 7 o'clock in Joe's Tavern with her rowdy friends ... (= sprouting)

As is pointed out by Sobin, (17d) may not be the product of an orphan–target process but may instead simply indicate the possibility of optionally adding adjuncts if the syntax of (17c) is elaborated so as to include as null targets every conceivable adjunct. Therefore, it turns out that rule (10), which is interpreted along the lines of sprouting or matching with reference to an antecedent sentence, does not embody the right approach. In other words, *do so* constructions are not simply orphan–target constructions.

In relation to the examples in (17) above, Sobin argues that the hierarchic VP–adjunction theory may account for the above facts involving *do so* naturally. He explains that *do so* in (17b) and (17d) has the internal VP *ate a hamburger* of (17a) and (17c) as its antecedent. (17b) contains

3) This argument of Sobin's is to be integrated in section 4 into my analysis of *do so* constructions.

an adjunct phrase that contradicts the one asserted in (17a), and (17d) contains a sequence of additional VP adjuncts. In this context, Sobin leads to the conclusion that any adjuncts added to the *do so* VP must be semantically compatible with the meaning of *do so* as ‘ate a hamburger’.⁴⁾

Sobin (2008: 155) contrasts C&J's orphan–target approach with his ProVP approach. He claims that if the orphan–target approach is employed to deal with the apparent matching or sprouting of adjuncts in *do so* constructions, the antecedent structures required are of indeterminate size and complexity. He also claims that, on the contrary, an approach in which *do so* is a ProVP and in which adjuncts are adjoined to VP does not entail such difficulties. This approach is slightly different from mine. I will argue that adjuncts are within the pro–form *do so*, not outside it, in section 4.

Furthermore, Sobin (2008) points out that in a theory that treats *do so* as a pro–form, phenomena such as perceived structural ambiguity suggest that speakers do employ multiple parsings. Consider the following examples of Sobin (2008: 157).

- (18) a. Mary [_{vp1}[_{vp2}[_{vp3} solved the problem] completely] on Tuesday], ...
 b.??Mary [_{vp1}[_{vp2}[_{vp3} solved the problem] on Tuesday] completely], ...
 c. ... and Bill did so on Friday. (*did so* = solved the problem completely)
 d. ... and Bill did so partially. (*did so* = solved the problem)
- (19) a. Mary [_{vp1}[_{vp2}[_{vp3} solved the problem] neatly] on Tuesday], ...
 b.??Mary [_{vp1}[_{vp2}[_{vp3} solved the problem] on Tuesday] neatly], ...
 c. ... and Bill did so on Friday. (*did so* = solved the problem neatly)
 d. ... and Bill did so sloppily. (*did so* = solved the problem)

It seems clear that the order of adverbial expressions in (18a) and

4) Sobin's view that adjuncts are added to the *do so* VP in *do so* constructions is somewhat different from the view that I will develop later in section 4.

(19a) is more natural than the order in (18b) and (19b) if the speaker does not use unusual stress contours. In other words, manner adverbials such as *completely* and *neatly* come before time adverbials such *on Tuesday*. The *do so* of (18c) seems to strongly convey the meaning that Bill solved the problem *completely*. Likewise, the *do so* of (19c) seems to strongly convey the meaning that Bill solved the problem *neatly*. On the contrary, neither the *do so* of (18d) nor that of (19d) seems to strongly convey the meaning that Bill solved the problem *on Tuesday*. All these facts lead Sobin to argue that we see a concomitant drop in *do so* reference to a discontinuous sequence when adverbials exhibit a preferred order. Sobin claims that this result is predicted by the *do so*-as-ProVP approach in conjunction with the theory of potential constituents sketched above, but not by the rule (10) approach. For this reason, Sobin argues that the difference in adjuncts in *do so* constructions does not eliminate the possibility of a structure-based antecedent for *do so*.

So far, we have seen how well Sobin's (2008) analysis of *do so* as a pro-form accounts for *do so* constructions, in contrast to C&J's (2005) analysis based on *do so* as a non-proform. It may be preferred to C&J's analysis in some respects. First of all, it has a merit in that it captures the relationship between *do so* and its antecedent relatively well. In other words, lack of a tight correspondence between *do so* and what would be its antecedent may not be a crucial evidence that *do so* is not a pro-form. In this respect, it has more explanatory power than C&J's analysis of *do so* constructions. Second, it has another merit in that it tries to account for argument externalization in a general way within the framework of *do so* as a pro-form, not as a non-proform. Third, it also has a merit in that it predicts the possible order of adjuncts that may follow the VP in *do so* constructions. It is true that this analysis has not a few strong points, but it also reveals a few problems. First of all, it starts with the false

assumption that each adjunct in *do so* constructions has its own VP respectively. As a result, this assumption makes it difficult to capture common characteristics of *do so* constructions in a unified way.

4. The Structure of *Do So* VP

In the preceding section, we saw some consequences of an analysis of *do so* as a pro-form. In this section, we will investigate the possibility of exploring a new analysis of *do so* constructions, based on their characteristics. To explore this possibility, we will examine some problems of the two analyses, i.e., *do so* as a non-proform and *do so* as a pro-form, in section 4.1. and the structure of *do so* VP in section 4.2.

4.1. Problems of *Do So* Analyses as a Non-proform and a Pro-form

The analysis of *do so* as a non-proform accounts for *do so* constructions with externalized arguments relatively well. In other words, it does not reveal any important problems as long as it tries to account for only *do so* constructions with externalized arguments. However, it is not certain how well it will deal with “plain” *do so* constructions shown in (6), repeated here as (20).

- (20) a. John ate a hot dog, and Mary did so too.
b. John produced a big belch, but Mary didn't do so.
c. John broke a cup, and Mary did so too.

The contrast between (20) and *do so* constructions with externalized

arguments indicates that the latter is exceptional, rather than normal with respect to *do so* constructions. In this respect, it is not certain how well C&J's *do so* anaphora rule (10) may deal with the normal *do so* constructions in (20). In short, the *do so* rule may have difficulty in attaining some generality with respect to *do so* constructions.

Another problem of C&J's analysis is that it may not account for the relationship between normal *do so* constructions and abnormal peculiar ones. For this reason, their analysis tells nothing about how *do so* constructions with externalized arguments may be derived from normal *do so* constructions. Their different view of the structure of the *do so* construction makes them regard *do so* differently. In other words, they regard it as a non-proform. This non-proform approach, in turn, leads to a failure in accounting for the nature of *do so* constructions in general.

A third problem that C&J's analysis has is related to the natural order of adjuncts in their *do so* constructions. The possible order of adjuncts following the verb may be predicted within a VP in English. In general, manner adverbials come before place adverbials, and place adverbials come before time adverbials, as we saw in examples such as (18–19), if there is no special stress contour given. However, C&J's *do so* anaphora rule (10) may not predict this kind of order, since these adjuncts are not contained in the *do so* as a pro-form. In this case, they are not within the *do so* as a ProVP, but out of its phrasal boundary. This is an inevitable consequence due to C&J's assumption that *do so* is not a pro-form, but a non-proform.

Next, let us discuss a few problems with a pro-form analysis of *do so* constructions. In general, it may be preferred to the non-proform analysis, because it may capture some of their general characteristics. In other words, it may give a natural account that the adjuncts in *do so* constructions are the ones moved from the arguments after the verb in the

antecedent VP. However, it also reveals a few problems concerning the structure of VP. First of all, it employs VP–adjunction analysis in which as many VPs as adjuncts occur in *do so* constructions, as we have seen in (18–19).

VP–adjunction analysis seems to be burdensome to grammar. First, we have to regard the VP–recursion as exceptional, compared to normal constructions in syntax. Second, it does not seem to exist psychologically in the speaker's mind. Third, Sobin's VP–recursion analysis may endanger the position of the *do so* VP as a pro–form, since it has to deal with it differently from other pro–forms in English. Besides, it is not desirable to analyze adjuncts in *do so* constructions as a series of 'VP + adjunct', since it will make the *do so* construction more complex. Moreover, this complexity in structure does not seem to agree with the purpose of the use of this pro–form construction. It is clear that speakers use this particular construction to avoid a lengthy expression. In this respect, any analysis may be inappropriate as a theory if it disagrees with the speaker's purpose of using this particular construction. Therefore, we should take these facts into consideration naturally when we try to account for *do so* constructions satisfactorily.

4.2. The Structure of *Do So* VP

Since both analyses have turned out to have some problems, it is essential to find out a new analysis that will work them out. First of all, as has turned out, the new analysis should be based on *do so* as a pro–form, rather than as a non–proform. Then we may think that it should account for normal *do so* examples. Let us look at the simplest *do so* construction in (16), repeated here as (21).

(21) Mary laughed, and Max did so too.

As we see in (21), *do so* may replace only the verb when the verb is intransitive. In other words, *did so* refers to the verb *laughed*. In this case, *do so* as a pro-form does not cause any problem. Then, we may write a *do so* rule as shown in the following.

(22) *Do So* Rule for Intransitive Verbs:

- a. Replace the intransitive verb by *do so* when it refers to its antecedent VP.
- b. Add an optional adverb such as *too* if it is needed.

The *do so* rule (22) may account for sentences containing intransitive verbs such as *laugh* without difficulty.

Next, let us examine simple *do so* constructions with transitive verbs in (20), repeated here as (23).

- (23)
- a. John ate a hot dog, and Mary did so too.
 - b. John produced a big belch, but Mary didn't do so.
 - c. John broke a cup, and Mary did so too.

In (23), *do so* does not have any problem in replacing the 'verb + object'. *Did so* in (23a) refers to the VP *ate a hot dog*, *did so* in (23b) refers to the VP *produced a big belch*, and *did so* in (23c) refers to the VP *broke a cup*. We may also write a *do so* rule for transitive verbs as shown in the following.

(24) *Do So* Rule for Transitive Verbs:

- a. Replace the transitive verb and its object by *do so* when they refer to their antecedent VP.

- b. Add an optional adverb such as *too* if it is needed.

The *do so* rule (24) may be able to account for the sentences in (23), which contain transitive verbs like *eat*. In (23), *do so* does not bring about any problem in replacing its antecedent. This fact also supports the argument that *do so* is a pro-form, not a non-proform, as we have seen in the discussion related to intransitive verbs previously. In this respect, it is undeniable that we should analyze *do so* constructions on the basis of *do so* as a pro-form.

Since we have seen simple normal cases with *do so* constructions, let us examine some abnormal ones. Consider the following examples with adjuncts in (3–4), repeated here as (25–26).

- (25) a. Robin smokes a pipe after dinner, and Leslie does so during breakfast. [*do so* = smokes a pipe]
 b. Robin flipped the hamburgers with a spatula, and Leslie did so with a chef's knife. [*do so* = flip the hamburgers]
- (26) Mary will cook the potatoes for fifteen minutes in the morning, and Susan
 a. will do so for twenty minutes in the evening. [*do so* = cook the potatoes]
 b. will do so in the evening. [*do so* = cook the potatoes for 15 minutes]

All the sentences in (25–26) have the structure '*do so* + adjunct' in common. A careful comparison of the two conjuncts in each example reveals that the first adjunct in the first clause corresponds to the second one in the second clause. For example, the second adjunct *during breakfast* in (25a) is contrasted with the first adjunct *after dinner*. However, *do so* in (25a) refers to the VP *smokes a pipe*. This indicates that *do so* still

refers to the antecedent VP *smokes a pipe* regardless of the following adjunct.

To account for the sentences in (25–26), let us assume that the adjunct in the second conjunct is to be moved out of the *do so* VP when it negates the corresponding adjunct in the antecedent VP. Then, in (25a), the adjunct *during breakfast* may be moved out of the *do so* VP, since it negates the adjunct *after dinner*. Then, we may write a *do so* rule for the ‘transitive verb + object + adjunct’ as in (27).

- (27) *Do So* Rule for the ‘Transitive Verb + Object + Adjunct’:
- a. Replace the ‘transitive verb + object + adjunct’ by *do so* when it refers to its antecedent VP.
 - b. Move any adjunct/adjuncts out of its/their VP when it/they negates/negate the adjunct/adjuncts in its/their antecedent VP.

The rule (27) may work very well for sentences containing adjuncts that negate the adjuncts in the antecedent VP, as in (25–26).

To support the analysis of *do so* as a ProVP, let us consider the following examples, rewritten from (25–26) by me.

- (28) a. Robin smokes a pipe after dinner, and Leslie does so. [*do so* = smokes a pipe after dinner]
 b. Robin flipped the hamburgers with a spatula, and Leslie did so. [*do so* = flip the hamburgers with a spatula]
 c. Mary will cook the potatoes for fifteen minutes in the morning, and Susan will do so. [*do so* = cook the potatoes for fifteen minutes in the morning]

The examples in (28) indicate that all the adjuncts in the first conjunct are within the boundary of *do so*. For example, within *do so* lie the

adjuncts *after dinner*, *with a spatula*, and *for fifteen minutes in the morning* in (28a, b, c) respectively. These examples support the belief that the adjuncts such as *during breakfast*, *with a chef's knife*, *for twenty minutes in the evening*, and *in the evening* in the second conjunct in (25–26) are within the phrasal category VP, not its outside. Therefore, these adjuncts should be analyzed as being present within the *do so* VP in the underlying structure, even though it is seemingly outside the *do so* VP. In short, '*do so* + adjunct' may be integrated into the *do so* VP. This kind of analysis is a natural consequence. As a result, it is essential that we should take these facts into account when we try to develop a *do so* theory with explanatory adequacy.

Next, let us examine a peculiar *do so* construction in which the complement of the antecedent VP is not included in the reference of *do so*.

- (29) John turned the hot dog down flat, but he wouldn't have done so with filet mignon. (=5)

The sentence (29) is used by C&J as evidence against the ProVP theory of *do so*. In (29), the antecedent VP has its complement, *the hot dog*, but this complement is not included in the *do so*, as we see from the adjunct *with filet mignon*. With respect to this construction, C&J do not explain why sentence (29) should be possible and why externalized arguments must take adjunct form. Consider the following examples in (30), rewritten from (29) by me.

- (30) a. John turned the hot dog down flat, but he wouldn't have turned filet mignon down flat.
 b. John turned the hot dog down flat, but he wouldn't have done so.

The second conjunct in (29), *he wouldn't have done so with filet*

mignon, seems to be derived through two steps. It is first derived from (30a) and then from (30b).

Let us examine the derivation of (29) from (30). First, consider the following examples of mine.

- (31) a. ... , but he wouldn't have [_{VP}[_V turned][_{NP} filet mignon][_{ADV} down][_{ADV} flat]]. =(30a))
 (Application of the *Do So* Rule)
- b. ... , but he wouldn't have [_{ProVP} done so]. (=30b))
 (Application of the Argument Externalization Rule)
- c. ... , but he wouldn't have [_{ProVP} done so [_{PP} with filet mignon]].
 (=(29))

It seems natural that we should regard (31a) as the underlying structure of (31b), and (31b) as the underlying structure of (31c). For example, if we apply the *do so* rule to (31a), we get (31b). In addition, we get (31c) if we apply the argument externalization rule to (31b), assuming that the argument *filet mignon* is contained in the ProVP *done so* in (31b). Here, the argument *filet mignon* conflicts with the argument *the hot dog* in the antecedent. To avoid this kind of conflict, it has to be moved out of its original position. This is why we have to externalize the argument out of its original position. This movement of the argument out of its original position, i.e., the object position of the verb *turned*, makes it an adjunct, since the argument is moved into an adjunct position. This kind of explanation makes it possible for us to deal with *do so* constructions not only consistently but also naturally. Furthermore, it may achieve explanatory adequacy.

5. Conclusion

So far, we have examined two analyses of *do so* constructions, i.e., a non-proform analysis and a pro-form analysis. One focuses on *do so* as a non-ProVP and accounts for *do so* constructions with externalized arguments relatively well. However, it fails to capture the relationship between *do so* constructions with externalized arguments and “plain” *do so* constructions. Moreover, it does not account for why argument externalization occurs and how it occurs. In this respect, this analysis have difficulty in accounting for various characteristics of *do so* constructions. The other analysis focuses on *do so* as a ProVP. It has a merit in that it may capture some common characteristics of *do so* constructions, since it regards *do so* as a pro-form. Despite the merit, it also reveals a serious problem. It makes the structure of VP in *do so* constructions unnecessarily complex by assigning each VP to each adjunct. This kind of assumption seems to disagree with a speaker's recognition of the structure of *do so* constructions. This is why I propose a new analysis that will solve all these problems and capture common characteristics of *do so* constructions. Therefore, later studies should be based on not only *do so* as a pro-form but also adjuncts within the *do so* VP.

Works Cited

- Culicover, Peter, and Ray S. Jackendoff. 2005. *Simpler Syntax*. Oxford: Oxford University Press.
- Fiengo, Robert, and Robert May. 1994. *Indices and identity*. Cambridge, MA: MIT Press.
- Hankamer, Jorge, and Ivan A. Sag. 1976. Deep and surface anaphora. *Linguistic Inquiry* 7: 391–426.
- Lasnik, Howard. 1999. *Minimalist analysis*. Oxford: Blackwell.
- Merchant, Jason. 2008. An asymmetry in voice mismatches in VP-ellipsis and pseudogapping. *Linguistic Inquiry* 39: 169–179.
- Sobin, Nicholas. 2008. *Do So* and VP. *Linguistic Inquiry* 39: 147–160.

Abstract

***Do So* and the Structure of VP**

Yongkwon Jung

The *do so* construction in English is analyzed differently by Culicover and Jackendoff (2005) and Sobin (2008). The former analyzes it on the basis of *do so* as a non-proform, while the latter analyzes it on the basis of *do so* as a pro-form. The non-proform analysis accounts for this construction with externalized arguments relatively well. However, it fails to capture the relationship between this construction with an externalized argument and a “plain” *do so* construction. Moreover, it does not account for why argument externalization occurs and how it occurs. In this respect, it has difficulty in accounting for various characteristics of *do so* constructions. On the contrary, the pro-form analysis may capture some common characteristics of *do so* constructions, since it regards *do so* as a pro-form. Despite this merit, it makes the structure of the VP in *do so* constructions unnecessarily complex by assigning each VP to each adjunct. This seems to disagree with a speaker's recognition of the structure of *do so* constructions. Therefore, I propose a new analysis that will solve all these problems and capture common characteristics of *do so* constructions.

Key Words: *do so* construction, pro-form, non-proform, ProVP, *do X* anaphora, argument externalization *do so*
구문, 대형, 비대형, 동사구 대형, do X 지시조응, 논항 외재화

논문접수일: 2009. 10. 25

심사완료일: 2009. 11. 10

게재확정일: 2009. 12. 14

이름: 정용권

소속: 한국외국어대학교

주소: 서울시 동대문구 이문동 292-249 아이비리그 오피스텔 809호

이메일: ykjung7@hanmail.net