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AUTHOR Binder, Richard  
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INSTITUTION Hawaii Univ., Honolulu. Dept. of Linguistics.  
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ABSTRACT

The thesis of this paper is that the "do so" test described by Lakoff and Ross (1966) is a test of the speaker's belief system regarding the relationship of verbs to their surface subject, and that judgments of grammaticality concerning "do so" are based on the speaker's underlying semantic beliefs. ("Speaker" refers here to both speakers and hearers of English, as the context requires.) Two conclusions of the arguments presented here are: (1) "do so" always refers to at least the basic action of the verb (the conceptual elements which are always present or implied when it is used); and (2) the use of "do so" is based on the speaker's conception of the referent verb as an activity "brought about," at least in part, by the sentence subject. (Author)

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THE SEMANTIC BASIS OF DO SO<sup>1</sup>

Richard Binder

1. INTRODUCTION. The thesis of this paper is that the do so test described by Lakoff and Ross (1966) is a test of the speaker's belief system regarding the relationship of verbs to their sentential (surface) subject, and that judgments of grammaticality concerning do so are based on the speaker's underlying semantic beliefs ("speaker" refers here to both speakers and hearers of English, as the context requires). Two conclusions of the arguments presented here are: (1) do so always refers to at least the basic action of the verb (the conceptual elements which are always present or implied when it is used); and (2) the use of do so is based on the speaker's conception of the referent verb as an activity "brought about", at least in part, by the sentence subject.

Section 2 examines the arguments presented by Lakoff and Ross for the do so test, leading to the first conclusion above. The do so form is examined more closely in Section 3, where its semantic distinctions relative to position in the sentence and use with too, do it, and do that are investigated. Section 4 presents the major argument of this paper, resulting in the second conclusion above. Section 5 examines a note by Dwight Bolinger on the meaning of do so in light of the results presented here.

It should be noted that the second conclusion stated above is testable, since if it is correct there should be a high

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correlation between judgments of grammaticality involving do so and the same speaker's beliefs concerning the verbs used, which may be obtained independently of the do so judgments.

2. THE DO SO TEST OF LAKOFF AND ROSS. In their paper on a test for verb phrase constituency, Lakoff and Ross (1966: 5) state: "We claim that do so replaces all of the constituents of the verb phrase and only these". They then argue that direct objects, indirect objects, and directional adverbs are inside the VP, while the following constituents are outside of the VP: time, manner, duration, frequency, instrumental, means, and purpose adverbials, and for someone's sake, with, instead of, without, because, if, and for clauses.

Two examples given by Lakoff and Ross to demonstrate the use of do so are:

(1) Harry forged a check, but Bill could never bring himself to do so.

(2) John loaded a sack onto the truck and I did so too.

In both (1) and (2) all the constituents are inside the VP, according to the do so test. On the other hand, the following sentences are given by Lakoff and Ross to illustrate constituents outside of the VP, representing the various constituent types in the order given above:

(3) John took a trip last Tuesday and I'm going to do so tomorrow.

(4) John flies planes carefully, but I do so with reckless abandon.

(5) John worked on the problem for eight hours, but I did so for only two hours.



- (19) John worked on the problem for eight hours  
and I did so too.  
,but I could not bring myself to do so.
- (20) John takes a bath once a year and I do so too.  
,but I could never do so.
- (21) The army destroys villages by shelling them  
and the air force does so too.  
,but the air force cannot do so.
- .
- .
- .
- (30) I bought a car for John and Bill did so too.  
,but Bill was unable to do so.

In the above sentences the do so test indicates that the constituents under consideration are inside the VP. Thus the do so test provides a contradiction: in (3)-(16) the constituents are outside the VP and in (17)-(30) they are inside. It appears that we must give up the claim that do so replaces all and only the VP constituents. What then does do so replace?

Let us re-examine the examples given by Lakoff and Ross for constituents inside the VP, consisting of direct objects, indirect objects, and directional adverbs respectively:

- (31a) John took the exam and I did so too.
- (31b) \*John took the midterm and I did so the final.
- (32a) John gave a book to Pete and I did so too.
- (32b) \*John gave a book to Pete and I did so to Mary.
- (33a) John loaded a sack onto the truck and I did so too.
- (33b) \*John loaded a sack onto the truck and I did so  
onto the wagon.

As Lakoff and Ross have noted, the constituents of (31)-(33) are different from those discussed above in that they cannot be

outside the VP (according to the do so test)--do so always includes these constituents whether a contrast is present or not; thus the ungrammaticalness of the (b) sentences.

I suggest that the reason for their uniqueness is that direct objects, indirect objects, and directional adverbs play an integral part in defining the action of the verb, and that do so always refers to at least this basic action (although it may refer to more than this). Thus, took always presupposes took something; gave presupposes not only a direct object but a receiver of the giving in order to satisfy its semantic definition--gave(something)to(someone); loaded is ambiguous if onto is not considered an integral part of it--loaded a gun vs loaded(something)onto(something). This suggests that onto the truck in (33) might best be considered an indirect object rather than a directional adverb<sup>2</sup>, and that the preposition associated with an indirect object be considered a part of the verb<sup>3</sup>. Within this view the do so test is reinterpreted as a test of the semantics of verbs as represented by their direct and indirect objects, when do so is used with a contrastive.

As an application of this test, consider the verb condescend. It is listed as intransitive in most dictionaries<sup>4</sup>, and is treated as such by Jacobs and Rosenbaum (1968: 193) in their analysis of verb phrase complements. However, the use of do so yields the following:

- (34) Mary reluctantly condescended to work at the museum, but Joan did so gleefully.
- (35) \*Mary condescended to work at the museum, while Joan did so to work at the foundry.

The grammaticalness of (34) and ungrammaticalness of (35) indicate that to work at the museum is an integral part of the action of condescend, while reluctantly and gleefully are not. Notice also that the grammaticalness of (34) indicates condescend is not a stative, as some have thought. In this analysis the complete action of condescend would be represented by condescend to (do something), where (do something) is the direct object of condescend to.

3. A CLOSER LOOK AT DO SO. The purpose of this section is to attempt to define more precisely the referential properties of do so. An extensive study of pro-forms has been made by Crymes (1968), and some of the points to be presented have been made previously by Bouton (1970), Bailey (1970), Bolinger (1970b), and undoubtedly by others. Nevertheless, it seems desirable to clarify certain features of do so here before proceeding to the next section.

3.1. THE POSITION OF SO AND THE USE OF TOO. If we examine the various occurrences of so with do we find some semantic distinctions. Consider the following sentences:

(36) George always drinks a full quart, but Bill would  
never \*do.  
do so.

(37) George always drinks a full quart and Bill does too.  
does so too.  
\*does so.

(38) George always drinks a full quart and so does Bill.

Sentence (36) represents what is probably the most typical form for the use of do so, and the presence of so is obligatory. In

sentence (37), although the use of so seems grammatical, its omission in the presence of too seems to be the preferred usage. If it is assumed that one of the basic rules of English is to avoid monotonous redundancy by making use of omission and pro-forms (which seems the most likely motivation for the use of do so in the first place), then the preferred omission of so in (37) is explained by its semantic similarity to too in this construction along with the greater force of too. Sentence (38), which is probably even more preferred than the does too of (37) by most speakers, introduces a new factor. Consider:

(39) John knows the answer but Bill \*does not do so.  
does not.

(40) John knows the answer and Bill \*does so too.  
does too.

(41) John knows the answer and so does Bill.

Setting aside until section 4 the question of why (39) and (40) are ungrammatical with do so (to which I believe most people would agree), let us focus on the so in (40) and (41). Does so does not seem grammatical in (40), although does too is. In (41), however, so seems perfectly natural. The inference is that so takes on the interpretation also when preceding do, making so does Bill = also does Bill simply an inversion of Bill does too (taking also as a synonym for too). Thus so does not have a referential interpretation in (41).

Another factor distinguishing the referential use of do so from other uses of do and so is that a verb cannot immediately follow the referential do so (or do without so):

- (42a) \*George always drinks a full quart and Bill does drink a full quart too.
- (42b) \*George always drinks a full quart and Bill does so drink a full quart too.
- (42c) George always drinks a full quart and Bill drinks a full quart too.
- (43a) \*John knows the answer and Bill does know the answer too.
- (43b) John knows the answer and Bill knows the answer too.
- (44) John knows the answer and so does Bill know the answer.

Notice that (44) provides further evidence that so do is not an inversion of do so. In contrast to the above examples containing do so, a verb may follow do so when the latter is being used for emphasis rather than reference:

- (45) Bill does so wash his own clothes!

An interesting case in which both do so's are present is represented by the following:

- (46a) I do so want to do so.
- (46b) I do so want to.
- (46c) I want to do so.

In (46a) the first so has the interpretation so much if the first do is stressed, while if the first so is stressed it takes on the meaning too. We may also have the elliptical form of (46b), in which do so has the same meanings as the first do so in (46a). Note that (46b) is not a transformation of (46c), in which do so has the referential interpretation. The do so of (46b) should be easily distinguished, however, by the presence of a verb following it in contrast to the mandatory absence of

a verb following the referential do so.

We are left, then, with the following conclusions with respect to the position of so and the presence of too: do so, in the absence of too and a following verb, unambiguously represents a pro-form reference. Its meaning is most clearly indicated in negative constructions such as (36) above.

3.2 DO SO vs DO IT, DO THAT. Consider the following:

(47a) John always drinks a full quart, but Bill  
would never do so.  
do it.  
do that.

(47b) Jack kissed Jill, but Dave would never \*do so to Sue.  
do it to Sue.  
do that to Sue.

(47c) The milk froze very quickly, but the bourbon  
didn't do so.  
?do it.  
?do that.

With the animate subject of (47a) the use of either do so, do it, or do that seems grammatical. However, so seems to me more specific than it, referring unambiguously to the preceding verb phrase. It seems less specific, with a certain vagueness present<sup>5</sup>. That seems more specific than so, including an emphasis in its reference that so does not have. However, consider (47b): according to the arguments of the previous section, do so is ungrammatical because it already includes the direct object Jill. The use of it in the same sentence seems acceptable, implying again a less specific reference which allows Jill to be omitted. That seems most acceptable of all, implying an emphatic reference to kiss without a direct object.

Thus do that as a pro-form appears to be fickle, taking as its constant referent only the verb itself.

Consider now sentence (47c). Although the subject of the pro-form is inanimate, do so seems appropriate. Do it, on the other hand, seems questionable to me; the less specific reference of it implies a choice of things to do, which seems incompatible with the inanimate subject bourbon.<sup>6</sup> Do that seems questionable here, unless a contrast is being made to something else which it did do. Do so seems to be the only one of the three which does not imply a reference beyond the scope of the sentence.

Thus do so, when contrasted with do it and do that, appears to refer consistently to the referent verb's "semantic action" discussed in section 2.

3.3. DO SO vs SO FOLLOWING THE VERB. In an attempt to discover the part of the referent represented by so, as opposed to that represented by do, let us consider so directly following verbs:

- (48) John always drinks a full quart, but Bill  
would never do so.  
drink so.
- (49) John always drinks while standing up, but Bill  
would never do so.  
drink so.
- (50) The milk froze very quickly, but the bourbon  
wouldn't do so.  
freeze so.
- (51) The milk froze, but the bourbon wouldn't do so.  
\*freeze so.  
freeze.

In (48), so appears to be unambiguously representing a full quart; an interpretation of so as so much seems awkward. The replacement of the quantity phrase in (48) with the manner phrase of (49) does not seem to change the interpretation of so, and its meaning in (50) also seems to exclude the "adverb of quantity" interpretation. Thus in these examples, although perhaps not representing popular usage, so following the verb appears to refer to the non-verb part of the preceding verb phrase. But now consider (51). Although do so is again grammatical, freeze so is not and must be replaced by just freeze. Since now the verb phrase consists only of the verb and since we cannot paraphrase do so with do freeze, so in this case does not have a separate referent. We must conclude therefore that, in general, do so is an integral form when used for reference, not further reducible. In particular, so is not in general an adverb of quantity or manner when following do.

To summarize the results of this section, we have found that do so, when used in that order and with no verb following it, always acts as a pro-form referencing a verb phrase, that it is more specific in its reference than do it or do that, and that its referents cannot in general be consistently associated with either do or so separately.

In the following section we shall consider more carefully the types of constructions in which do so can occur.

4. DO SO AND STATIVE CONSTRUCTIONS. Lakoff (1966) has presented syntactic criteria for a classification of verbs and adjectives as "stative" or "nonstative". Binnick (1969) explores many aspects of English verbs and concludes that semantic distinctions underlie many syntactic verb classifications, in particular Lakoff's stative category. King (1970) argues for the distinction between the volitional properties of verbs and their durational properties, considering them independent factors in syntactic constructions.

The thesis presented here is closely allied to King's work. He views the volitional property of animate subjects as determining certain syntactic phenomena of verbs, independently of verb aspect. I am proposing that something close to volition, but broader and not restricted to animate subjects, determines syntactic usage. It is probably most closely represented by the notions of control, causation, or simply participation of the sentence subject in the activity represented by the verb. For convenience, I shall refer to constructions which do not belong to this "participation" category as "stative constructions". "Stative" as used here does not necessarily imply a durative property, however; it is used simply to refer to Lakoff's classification of verbs which appear to have certain syntactic properties in common. As I hope to demonstrate, it is not in general a property of verbs independently of their context.

The do so test appears to provide a consistent criterion for classifying stative constructions, relative to a particular

speaker. That the latter qualification is necessary for do so has been demonstrated in an empirical study by Bailey (1970). Probably the best example of a verb which results in stative constructions agreed to by almost everyone is know, and sentences (39)-(41) of section 3 illustrate the ungrammaticalness of do so with it. Others which are stative most of the time (but not always) are the perception verbs: see, hear, perceive, ... , and verbs of emotion: fear, love, hate, ... .

An area concerning stative verbs which does not appear to have been extensively explored is their relationship to have. In connection with a problem concerning his complex NP constraint, Ross (1967: 77-82) discusses the relationship of modal+noun to some verbs, not necessarily stative. Fillmore (1968: 85) discusses the problem of "cognate-object" constructions relative to his case grammar, proposing a pro-form insertion rule to obtain pro-V+N from V; for example, the verb dream becomes have a dream. In general, he follows Bach (1967) and Lyons (1968: 388-99) in introducing have transformationally to sentences derived from deep structures.

I wish to propose here that, in general, whenever a verb is used in a stative construction it can be paraphrased using have and cannot be replaced with do so, while the converse is true for nonstative constructions. Further, the underlying have denotes possession by the subject of the thing represented by the verb, something which "happens to him". In contrast, the subject always participates in the activity denoted by the verb





- (58) Bill loves tall girls but John doesn't.  
       hates   ?doesn't do so.  
       likes

·  
·

In the arena of emotions, people's beliefs may vary considerably. For example, a psychiatrist who believes a patient is unconsciously using hate as a means for avoiding close relationships would view the patient as a participant in the hating. For him the use of do so with hate in (58) would be grammatical. Notice that if this belief is overtly expressed, the sentence becomes grammatical for most people:

- (59) Bill deliberately hates girls in order to avoid getting close to them, but John doesn't do so.

This effect of expressions of purpose on stative verbs has also been noted by King (1970: 10).

Another example of the effect of context is provided by see, a hard-core stative according to most analyses. Consider the following:

- (60) \*John sees Mary hiding behind the curtain; Harry doesn't do so.  
 (61) John can see Mary hiding behind the curtain, but Harry isn't able to do so (something's in his way).  
 (62) John saw the movie, but Harry didn't do so (he didn't have time).

The implication in (61) that Harry's seeing is governed by something Harry can do (his placement of himself relative to the object seen) appears to be the factor rendering do so grammatical. Similarly, in (62) see takes on the sense go and see, and go is of course do-able.

The following are a sampling of other examples involving "statives":

- (63) \*John believes it will happen, but Harry doesn't do so.
- (64) John will believe it by tomorrow, but Harry won't do so (he's stubborn as hell).
- (65) \*John has a belief that kissing is unhealthy, but Bill doesn't do so.
- (66) John holds the belief that kissing is unhealthy, but Bill doesn't do so.
- (67) ?John fears everyone, but Bill doesn't do so.
- (68) John used to fear everyone all the time, but now he does so only on Sundays.
- (69) \*John died yesterday, but Bill didn't do so.
- (70) John died on Tuesday; Bill didn't do so until Wednesday (he swore he wouldn't die on the same day as John).

4.2. EMBEDDED VERBS. Many sentences follow a stative with an activity:

- (71) If you want to leave, you may do so.

Applying the criteria for do so we have previously developed, if the "want" is interpreted as beyond the person's control, do so refers to the activity leave. We may also imagine (71) being used sarcastically, in which case permission is being granted to want to leave and do so applies to the entire verb phrase. We can further imagine a situation such as the police state depicted in 1984, in which the inclusion of want in the do so reference might be the rule rather than the exception. Thus the reference of do so is determined by situation and intent, not by inherent fixed properties of the verb.

4.3. CAUSATIVES. Bouton (1969) presents some sentences containing both "causative" and "non-causative" verb phrases in which do so replaces the non-causative phrase. He defines a "causativist" sect of speakers who find many of the sentences acceptable. A sampling of these sentences are:

- (72) Charley tried to curve his next pitch across the inside corner, and it did so beautifully--knee high
- (73) The water Jane was boiling when we arrived was still doing so when we left twenty minutes later.
- (74) The stone we rolled down the hill raised a huge cloud of dust as it did so.
- (75) The fluid we froze at -60 C. did so very quickly.
- (76) The man Bill choked to death did so without making a sound.

Only (72) seems natural to me--(73)-(75) seem strange but acceptable, while (76) does not seem correct. However, a possible explanation for their acceptability-unacceptability is provided by the hypothesis under consideration here. While all of the verbs replaced by do so are classified as non-causative by Bouton and (except for 76) have inanimate subjects, these subjects all participate to varying extents in the activity represented by the verb: a pitch curves, water boils, a stone rolls, fluid freezes, and people choke to death. Since the amount of participation in each case is relative to each individual's beliefs concerning the subject-verb combination (note that it is not a function of the subject or verb by themselves), we can anticipate variations in their acceptability by different speakers. It seems reasonable to assume that their acceptability will be further

influenced by competing factors within each sentence, such as the position of do so relative to the verb phrase and subjects, overlap in time of the two subjects' participation in the activity, the presence of modalities, and the degree of participation by the "causer" as opposed to the "doer". For example, (75) seems more acceptable if presented in a form similar to (72):

(75a) We tried to freeze the fluid at -60 C. and  
it did so beautifully.

In (76), the activity of choking the man to death performed by Bill coincides in time with the man's choking, and involves Bill's full participation during the entire interval. This is not the case in the other examples, and perhaps explains the strong unacceptability (to me) of (76).

5. POSITIONAL RESTRICTIONS AND AMBIGUITY. Bolinger (1970a) has pointed out a negative connotation attached to do so which he suggests provides a semantic basis for positional restrictions on its use. One of his many examples is:

(77a) \*You may do so, if you want to scream.

(77b) You may quite definitely do so, if you are  
determined to scream.

His argument is that do so in (77b) is grammatical because of its negative context, whereas this context is lacking in (77a). Another example from Bolinger is:

(78a) \*I wanted you to take in a movie and have a good time  
while I was gone. Why didn't you do so, honey?

(78b) I wanted you to finish those reports and keep busy  
while I was gone. Why didn't you do so, Miss Jones?

I wish to suggest, first, that the negative connotation of do so comes from the preciseness of its referring qualities as previously pointed out in this paper, and that its use in (78a) is starred for the same reason we would reject explicitness in other casual or intimate discourse in favor of ellipsis. Second, I believe the explicitness-negative connotation is not the reason for the rejection of (77a). Rather, it is due to an ambiguity of reference due to position, coupled with factors such as the stative want intervening between do so and scream. The ambiguity arises from the more usual use of do so in the "follow" position to refer to a previously stated verb, for example:

(77c) You say you wish to go to a horror movie? You may do so, if you want to scream.

On the other hand, if do so follows its referent in the same sentence, this ambiguity is normally not present:

(77d) If you want to scream, you may do so.

Thus if do so precedes its referent as in (77a), stronger conditions are necessary to eliminate the potential ambiguity illustrated by (77c).

At this point the relationship of do so to statives comes into play. In (77a) do so is followed by the stative expression want to scream, while in (77b) it is followed by the volitional phrase determined to scream; the additional referent clue provided by quite definitely in (77b) makes the referent of do so reasonably unambiguous. Notice that without this last factor, the same ambiguity as in (77c) could still be present:

(77e) You may do so, if you are determined to scream.

Notice also that when quite definitely is added to the "stative expression" sentence (77a), the result is still ambiguous:

(77f) You may quite definitely do so, if you want to scream.

In fact, the interpretation of (77f) leans even more towards that of (77c). We see then that both a volitional (or more generally, "control") expression following do so and additional referent clues associated with the do so occurrence are required to eliminate the potential ambiguity of its forward-position use.

While the "control" factor is not necessarily responsible for many of Bolinger's starred sentences not presented here, I maintain that the presence or absence of "referent clues" (which include the "control" factor) and-or the preciseness of do so in a casual context account for some of his stars, not a semantic distinction of negativeness.

Notes

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<sup>2</sup>Lyons (1968: 302) and also C-J. Bailey (personal communication) have pointed out the similarity between the directional and indirect object in many languages.

<sup>3</sup>Lakoff and Ross (1966: 7) suggest essentially the same treatment for remain in a footnote to their discussion of Chomsky's claim regarding place adverbials.

<sup>4</sup>For example, The American Heritage Dictionary of the English Language, Houghton, 1969.

<sup>5</sup>The vagueness of it is discussed by Bolinger (1970b: 72).

<sup>6</sup>Crymes (1968: 65), however, points out that while subjects of do it are commonly animate, a speaker may "impose the mask of actor on an inanimate subject by his selection of do it ...". Among her examples is: "That tree is going to fall someday. I hope it doesn't do it while we're here".

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