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Remarks and Replies

Coordination and VP-Internal Subjects

Strang Burton, Jane Grimshaw

A number of recent works have given evidence that subjects must be generated inside VP, rather than in Specifier of IP. These include Zagana (1982), Koopman and Sportiche (1985; 1991), Kitagawa (1986), Speas (1986), Speas and Fukui (1986), Kuroda (1988), Contreras (1987), Sportiche (1988), Rosen (1989), and Woolford (1991). In the context of current developments concerning the theory of lexical and functional categories (Speas and Fukui (1986), Abney (1987), Grimshaw (1991)), this is not a surprising finding. Once the lexical/functional distinction is developed, with I being functional and V lexical, there is good reason to expect that the subject of V must occupy Specifier of VP (or perhaps some other VP-related position) rather than Specifier of IP. If only lexical categories are θ -markers, and if θ -marking is strictly local, operating only within a maximal projection, then Specifiers of functional projections are non- θ -positions. Hence, Specifier of IP could not be the D-Structure position for an argument.

This article provides new evidence in favor of the VP-internal subject hypothesis: we argue that this hypothesis resolves a well-known contradiction between the Across-the-Board (ATB) Principle and the fact that active and nonactive predicates can be conjoined in I'-level or VP-level coordination. The resolution of the contradiction concerning active-passive coordination has previously been taken to necessitate the rejection of one or the other of the two standard assumptions of Government-Binding Theory in

[Editors' note: This article and Louise McNally's work "VP Coordination and the VP-Internal Subject Hypothesis," published in the Squibs and Discussion section of this issue, have arrived independently at very similar proposals. Because squibs and articles are edited separately, this similarity was not noted until the issue was in press.]

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(i) and (ii):

- (i) There is NP-movement in passives and unaccusatives (Chomsky (1981), Jaeggli (1986)).
- (ii) Coordinate phrase-structures are base-generated.

Thus, various authors have maintained that the active-passive coordination facts are inconsistent with a movement analysis of passive (Williams (1977), Gazdar (1981), Van Valin (1986)), and that passive subjects must be base-generated in their surface positions, perhaps as in Bresnan (1982). Others have taken the facts as evidence that some or all surface coordinations must be derived, either transformationally (see, for example, Dougherty (1970; 1971)) or by linearization at PF (Goodall (1987, 19–21)).

In contrast, the VP-internal subject hypothesis offers a solution to this problem that does not require us to deny either of the assumptions (i) and (ii).

1. Assumptions

The Coordinate Structure Constraint (Ross (1967)) prevents movement from one conjunct in a coordinate structure, unless movement also occurs from the other conjunct(s). Movement from inside coordinate structures must be *across the board* (Ross (1967), Williams (1977; 1978)). This rules out examples like (1a) but allows examples like (1b).

- (1) a. *Which book did they say that the boys wrote *t* and the girls did the illustrations?
- b. Which book did they say that the boys wrote *t* and the girls illustrated *t*?

(2a–b) illustrate instances of coordination within the V/I system in which constituents smaller than IP are coordinated.¹

- (2) a. They said that the boy will *write a book and publish it*.
- b. They said that the boys will *write a book and be happy with the results*.

In these examples there is one I and two VPs. Sentences of this sort can be analyzed as involving VP-level coordination, with the I (containing *will* in (2)) distributing over both conjuncts. These assumptions—that extraction from coordinate structures must obey the ATB Principle, that coordination is possible below the IP level, and that passive and unaccusative verbs have derived subjects—lead to the paradox we are interested in.

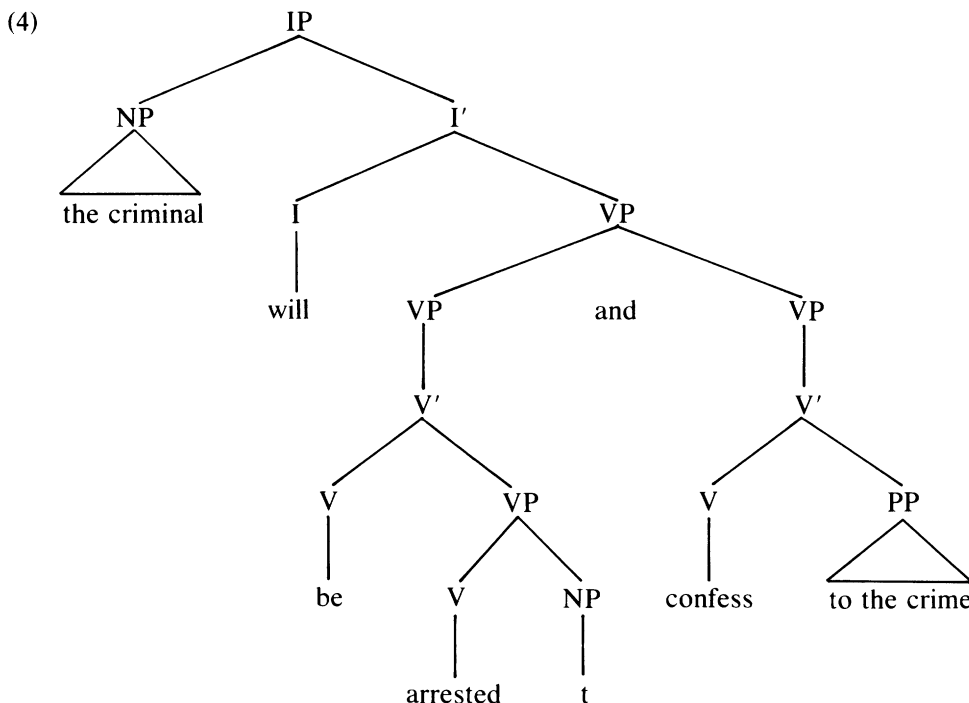
¹ An issue that arises here, which we will not pursue, is the import of sentences involving coordinated predicates (and also serial verb constructions) for the θ -Criterion: if the θ -Criterion entails that “each argument bears one and only one θ -role” (Chomsky (1981, 36)), then how can multiple predicates be θ -related to a single argument? Speas (1986), Goodall (1987), Baker (1989), Li (1990), and Burton (to appear) contain various proposals relevant to this issue.

2. The Problem: Coordination of Active and Passive Verbs

As has been pointed out many times in the literature (Schachter (1976), Williams (1977), Gazdar (1981), Goodall (1987), Van Valin (1986)), sub-IP-level coordination of an active and a passive verb ought not to be possible, yet, as illustrated in (3), it is perfectly well formed.

- (3) a. The boys will *write a book and be awarded a prize for it.*
 b. The criminal will *be arrested and confess to the crime.*

The difficulty with (3a) and (3b) arises if the surface subject of the passive verb is generated in object position, hence is inside one of the conjuncts at D-Structure, whereas the subject of the active verb is generated in Specifier of IP, hence is never inside either of the conjuncts. In the derivation of these sentences the object of the passive verb must move to subject position and merge with the subject of the active verb, as illustrated in (4). But the movement involved is precisely the kind of movement that is ruled out by the ATB Principle. The object of the passive verb must move out of its conjunct. Nothing is extracted from the other conjunct, however, since the surface subject of the active verb is the same as its underlying subject. Hence, only one of the conjuncts has been affected by extraction, violating the ATB Principle.



Examples like those in (5) pose the same problem, with a different choice of auxiliary verbs.

- (5) a. John has committed crimes and been arrested for them.
 b. John is constantly committing crimes and being arrested for them.

The same extraction problem arises *mutatis mutandis* for unaccusative predicates in sub-IP coordination of unergatives and transitives. Here again, the object of the unaccusative must move out of its conjunct into subject position, but no extraction takes place from the other conjunct:

- (6) a. He may *appear at the door and shout insults to the crowd*.
 b. The wind could *rise and capsize the boat*.

Note that reanalyzing the relevant cases as IP coordination with a null subject in the second conjunct does not provide a general solution to this problem. This is shown by Van Valin (1986, 583).

3. The Solution

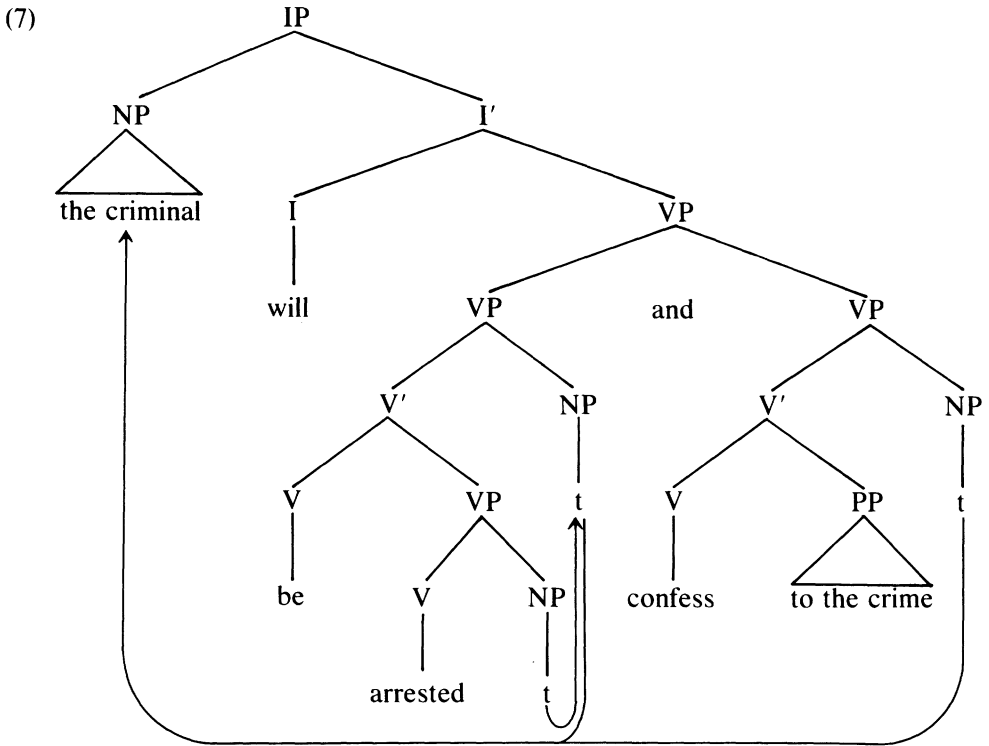
According to the VP-internal subject hypothesis, all subjects, even the subjects of active sentences, originate in VP and are moved to their surface position. It follows that in an active-passive coordinate structure the subject of the active verb in fact originates inside VP. This means that the surface subject of an active-passive sub-IP coordination is extracted from both conjuncts, just as the ATB Principle requires. The extraction is licit, because both conjuncts have been affected.

This solution explains the well-formedness of the cases of active-passive coordinate structures that have been discussed in the literature, as we will show in sections 3.1 and 3.2.

3.1. VP Coordination under I

(7) illustrates how the solution works for VP-level coordination. In (7) the derived subject, *the criminal*, originates in two positions within the conjoined VP: in object position within the first VP and in Specifier of the second VP. In moving to Specifier of IP, the NP is extracted from both halves of the conjunct. (We assume that the merger of the two NPs is subsumed under the normal principles of ATB extraction responsible for the merger of the arguments of *write* and *illustrate* in (1).)

The same solution works for unergative-unaccusative VP coordinations like those shown in (6). The subject of the unergative is base-generated inside VP and is extracted from within its VP by ATB movement.



Two points about the derivation in (7) should be clarified here. First, we have represented the subject as occupying Specifier of VP position to the right of V', but the same basic point holds regardless of where the subject is generated, provided it is inside VP. Second, we have assumed that *the criminal* moves up to the Specifier of VP in the case of the passive verb, before ATB extraction. This first step is certainly allowed by the theory of movement, but it is not required by the ATB Principle, since ATB extraction does not require that the extracted elements be in exactly parallel positions (Williams (1978, 34)).

3.2. Higher Levels of Coordination

This same solution extends to higher-level coordination. Consider an example like (8), which shows two separate occurrences of I, even though only one subject NP is overt.

(8) They said that the boys *have written a book and will publish it*.

Since I and VP form an I' constituent in current X-bar theory (Chomsky (1986)), examples like (8) can be analyzed as instances of I'-level coordination, as in (9) (Godard (1989)).

(9) . . . [the boys I' [I' [have written a book] and I' [will publish it]]]

Alternatively, a sentence like (8) can be analyzed as coordination of some maximal functional projection, as one reviewer has suggested. This projection, labeled *FP* in (10), would be higher than *VP* and lower than *I*.

(10) . . . *IP*[the boys *FP*[*FP*[have written a book] and *FP*[will publish it]]]

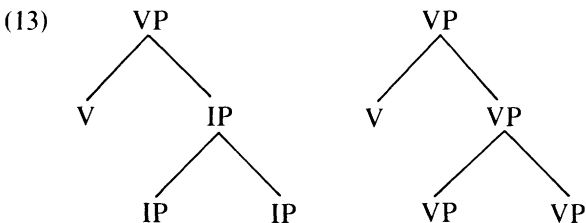
In this configuration again, an active can be coordinated with a passive, as can an unaccusative with an unergative (see (11) and (12)).

- (11) a. The boys *have written a book and will be awarded a prize for it*.
 b. The criminal *will be arrested and will confess to the crime*.
 (12) a. He *appeared at the door and shouted insults to the crowd*.
 b. The wind *rose and capsized the boat*.

Again the ATB Principle will rule out these sentences unless the subject of the active verb can originate below Specifier of *IP* (inside *I'* under the analysis in (9), or inside *FP* under the analysis of (10)) and thus be available for ATB extraction from both conjuncts.

3.3. Coordinate Phrases as Complements to Lexical Heads

The examples analyzed so far either involve matrix coordination or involve coordinate VPs embedded under *I*. What is the prediction for active-passive coordination in conjoined VPs or *IP*s as complements to *V*? (See Rosen (1989; 1990) for a recent review of candidate constructions.) If ATB extraction moves the merging phrases to Specifier of a functional projection, like all other cases of Move α , then when two *IP*s or two VPs are coordinated as complements to a lexical category, no ATB extraction will be possible, since there will be no available Specifier position of the right type.



So, although every combination of active and passive/unaccusative will be possible for *IP* coordination, none of them will have an ATB-extracted version. As a result, each of the two conjuncts must contain its own subject.

For *VP* coordination, what is allowed will depend on case theory. If the subjects can be case-marked by the higher *V*, every combination of active and passive/unaccusative will again be allowed, and again none of them will have an ATB-extracted version. If, on the other hand, ATB extraction can adjoin the merging phrases to the coordination, then ATB extraction will be possible in all these cases, with a single subject appearing adjoined to the top *IP* or *VP*. Thus, a verb that takes a bare *VP* complement,

with no possibility for a higher functional projection, should not allow active-passive coordination, unless ATB extraction can make use of adjunction.

Of course, ATB extraction will always be possible whenever a functional projection in fact intervenes between V and the coordinate IP or VP, since the Specifier of the functional projection will act as a target for the movement. This is exactly the nature of the cases analyzed in section 3.2. Thus, whether active-passive coordination is predicted to be well formed or not depends crucially on distinguishing between a bare lexical projection and a lexical projection with functional structure over it: see, for example, Guasti (1989) for evidence that Romance perception verbs take IP, not VP complements.

3.4. *V'-Level Coordination*

Should it be possible to conjoin actives and passives/unaccusatives at the V' level? The answer depends on the precise D-Structure position of subjects. If subjects are generated inside VP but outside V', then active-passive coordination at this level is predicted to be impossible, whereas active-active and passive-passive coordination should be well formed.

3.5. *Stage- and Individual-Level Predicates*

Pursuing earlier work by Carlson (1977), Diesing (1989) and Kratzer (1989) have raised the question of whether stage- and individual-level predicates may assign different analyses to their subjects, with the subjects of stage-level predicates being generated under VP and raising to Specifier of IP at S-Structure, and the subjects of individual-level predicates being generated under IP at D-Structure. Under this analysis, it is predicted that VP-level coordination, and more generally coordination below the IP level, must involve either two stage-level predicates or two individual-level predicates, since a non-uniform combination will always violate the ATB Principle. The grammaticality of (14), a VP-level coordination in which an individual-level predicate occurs in the first conjunct and a stage-level predicate in the second, suggests that for both stage- and individual-level predicates the subject can originate within VP.

(14) He may know French but speak/be speaking English to make me mad.

The general conclusion of this study, then, is that *all* subjects, including those of active predicates, unergative predicates, and individual-level predicates, can be derived from a position lower than Specifier of IP. Hence, the properties of extraction from coordinate structures provide further support for the VP-internal subject hypothesis.

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Another Type of Antecedent Government

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Rochemont and Culicover (1990) discuss interactions of extraposition with adjunct predication and propose an interpretive nesting requirement to rule out their ungrammatical cases. In this note I will show that effects of this interpretive nesting requirement can be reduced to Rizzi's (1990) Relativized Minimality.

1. The Complement Principle and the Interpretive Nesting Requirement

Culicover and Rochemont (1990; henceforth C&R) maintain the Complement Principle in (1) as the means to connect "extraposed" phrases (EXs), which are assumed in their analysis to be base-generated as adjuncts, with their associates such as subject and object NPs (see also Guéron (1980) and Guéron and May (1984)).

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