

Overt and LF Object Positions in English

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0 Preview of conclusions

I will argue in this paper that objects in English move overtly to a VP-external Case position, Spec,AGRo. I will further suggest that A-movement, like A'-movement, exploits the copy and delete strategy (Chomsky 1993), allowing for observed PF/LF A position mismatches. The paper begins with a look at antecedent-contained deletion (ACD), which provides an interesting problem with respect to overt and LF object positions. The conclusions, outlined above, will be shown to account neatly for an otherwise unexpected problem illustrated by the ACD construction.

1 Antecedent-Contained Deletion

1.1 The basic story

VP deletions like those in (1) have been the subject of much debate (see e.g. Sag 1976, Williams 1977, May 1985, Baltin 1987) because the antecedent of the missing VP contains the missing VP, as (2) illustrates. This is interesting because copying the antecedent into the missing VP results in infinite regress, as (3) shows:

- (1) Cindy read every book that Bobby did *e*
- (2) *e* = [read every book that Bobby did *e*]
- (3) Cindy [read every book that Bobby did [read every book that Bobby did [read...

Standard treatments of antecedent-contained deletion (ACD) have moved the object out of VP, by QR (May 1985) or by extraposition (Baltin 1987). By removing the object from VP, infinite regress is avoided since the copied VP is the appropriately interpretable (4):

- (4) *e* = [read *t*]

A Minimalist account of ACD has been proposed by Lasnik (1993) and Hornstein (1994). This account takes advantage of the claim that all objects move to a VP-external Case position, Spec,AGRo, at LF, thus independently avoiding the infinite regress problem. On this sort of account, the LF of (1) would be (5):

- (5) Cindy [_{AGRoP} [_{DP} every book that Bobby did *e*]_i [_{VP} read *t*]_i]

An advantage to the Minimalist account is that no special rule such as QR or extraposition is needed to remove the object from VP by LF.

1.2 An unexpected contrast

Diesing (1992) points out a fact that is unexpected on the Minimalist account of ACD. If the NP heading the relative clause is interpreted as "cardinal"/"existential" (see Milsark 1977, Diesing 1992 for discussion), ACD is not licensed. Compare (6) with (7):

- (6) Cindy read the/every/most book(s) that Bobby did *e*
- (7) *Cindy read many/few/two books that you did *e* ["cardinal"]

Diesing accounts for this contrast by appealing to her mapping hypothesis, which negotiates the mapping between LF syntactic structures and the semantic representation. Without going into the details of the hypothesis, the claim is that proportional/quantificational NPs (like those in (6)) are VP-external at LF; since the object is VP-external, no infinite regress will result upon VP-copying and ACD is licensed. Cardinal/existential NPs (like those in (7)) are VP-internal at LF; since the object is VP-internal, infinite regress will result if VP-copying is attempted, thus ACD is not licensed.

Returning to the Lasnik/Hornstein Minimalist account, which places objects in VP in the overt syntax and in Spec,AGRo for Case-checking at LF, we are left with an unanswered question: If cardinal/existential NPs must be VP-internal at LF when/how do they check Case? This paper will present a different Minimalist account of ACD which provides an answer to this question.

1.3 A different Minimalist solution

The Minimalist solution must ensure the following: (a) that objects check Case in Spec,AGRo at some point during the derivation, but (b) that objects need not be in Spec,AGRo at LF, thus allowing for the appropriate mapping to the semantic representation (Diesing 1992). The proposal I will argue for in the remainder of this paper rests on two claims: (a) objects move in the overt syntax to Spec,AGRo; and (b) A-movement uses the copy and delete strategy allowing PF/LF mismatches (Chomsky 1993).

1.4 Outline of argument

In favor of the claim that objects are in Spec,AGRo in the overt syntax are the following arguments, given in detail in the pages that follow. Constituency tests show that the main verb in English is external to a constituent containing the object and other VP-elements: AGRoP. This establishes that at least the verb escapes VP. Constituency tests further show that the verb and the object are both external to a constituent containing the remainder of the VP-elements: VP. This establishes that the object also escapes VP. Adverb placement is free within VP but constrained in the functional domain. Adverbs freely intermingle among VP-elements, but not between the verb and the object themselves. This suggests that indeed the verb and the object are in a different sort of functional part of the tree: not in VP.

That A-movement exploits the copy and delete strategy is supported by these facts: reconstruction binding effects similar to those found in the A' domain; and lowering effects found for interpretation.

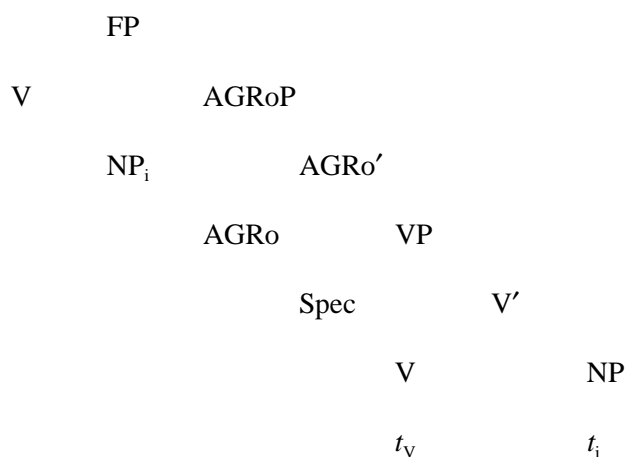
Ultimately, then, the ACD examples are accounted for by this proposal since it allows for

PF/LF mismatches: if the downstairs copy of NP deletes at LF, resulting in a proportional/quantificational interpretation, then ACD is licensed; if the upstairs copy of NP deletes at LF, resulting in an existential interpretation, then ACD results in infinite regress.

2 Overt object position: Spec,AGRo

Chomsky (1991, 1993) suggests that object NPs check their Case features in a functional specifier external to VP: Spec,AGRo. He argues that movement to Spec,AGRo is part of the covert syntax of English. I will argue that in fact English objects move overtly to this VP-external Case position. To account for the observed word order, I argue that the main verb also moves overtly to a VP-external position at least higher than AGRoP. My proposal is illustrated in (8):

(8) Overt Position of Verb and Object



I will begin by discussing the verb's position and then move on to the object's position.

2.1 V position

Chomsky (1993) follows Pollock (1989) in assuming that the main verb in English does not move at all in the overt syntax, while the main verb in French moves to the highest functional head position in the tree. One type of evidence for this assumption is based on the assumption that certain adverbs are adjoined to VP. The English verb follows these adverbs while the French verb precedes them. The Chomsky-Pollock structure is roughly as follows:

- (9) a. NP verb [_{VP} ADV [_{VP} *t_v* NP]] [French]
 b. NP [_{VP} ADV [_{VP} verb NP]] [English]

If the adverbs in question appear in identical positions in both French and English then clearly the French verb is higher than the English one. However, that the verb in English has not moved at all only follows from the **assumption** that the adverbs in question are adjoined to VP. Since the next few arguments establish that the English verb is indeed external to VP, I will assume that

the adverbs in question are adjoined to a higher VP-external functional projection, labeled FP:

- (10) a. NP verb [_{FP} ADV [_{FP} t_v [_{AGRoP} NP [VP]]]] [French]
 b. NP [_{FP} ADV [_{FP} verb [_{AGRoP} NP [VP]]]] [English]

I leave open exactly what the label of FP is (AspP? TP?) but note that it is higher than AGRoP (see Runner 1995 for more discussion).

Returning to the tree structure in (8) I will now outline several arguments in its favor. First, (8) claims that the verb is external to a constituent containing the object and other VP material: AGRoP.

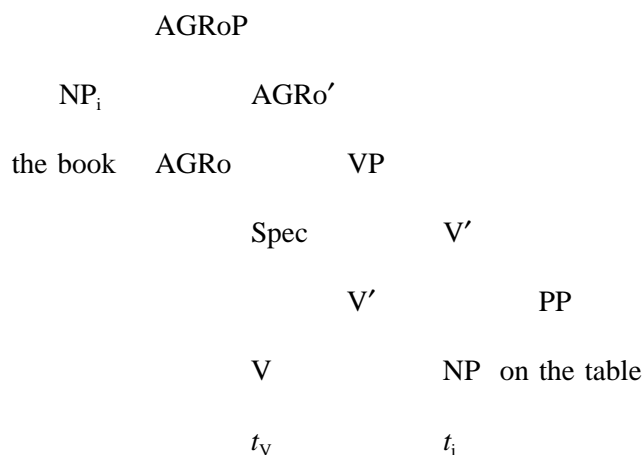
Coordination

Consider the following examples from Larson (1988) and also Johnson (1991).

- (11) a. Gary put [the book on the table] & [the lamp on the sofa]
 b. Chris ate [the meat slowly] but [the vegetables quickly]
 c. Sam talked [to Mittie yesterday] & [to Betsy the day before]

These examples suggest that the main verb is external to a constituent containing the object and other verbal material.¹ If the verb has moved to FP in (8), then what we have coordinated is an AGRoP:

- (12) *Coordinated AGRoP*



Right Node Raising

Abbott (1976) points out these right node raising (RNR) examples, which are problematic for most standard VP structures, assuming no verb movement:

- (13) Smith loaned, and his widow later donated, a valuable collection of manuscripts to the library.
- (14) I borrowed, and my sister stole, large sums of money from Chase Manhattan Bank.
- (15) Leslie played, and Mary sang, some Country & Western songs at George's party.
- (16) Mary baked, and George frosted, twenty cakes in less than an hour.

Once again, though, if the verb has moved to a VP-external position, then the "raised" right node is simply the constituent AGRoP:

- (17) Smith loaned *e*, and his widow later donated *e*, [_{AGRoP} a valuable collection of manuscripts [_{VP} *t_V* *t_{NP}* to the library]]

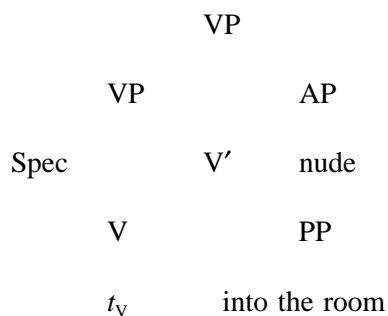
Stylistic Inversion

From Rochemont & Culicover (1990, p.74) and also discussed in Johnson (1991) are the following. (a) sets up the context a bit, and (b) is the example in question:

- (18) a. They said John would walk into the room nude, and
 b. into the room nude John walked/walked John.

Rochemont & Culicover argue convincingly that the fronted constituent is indeed a VP. This suggests something like the following, which is unexpected if V does not move out of VP:

- (19) [_{VP} *t_V* Into the room nude] John walked *t_{VP}*
- (20) *Fronted VP*



From these constituency tests it is clear that the main verb in English is external to a constituent containing the object and other verbal material. This provides initial motivation for the tree in (8).

2.2 Object position

The structure in (8) claims that the verb and the object are external to a constituent containing the remainder of the verbal material: VP.

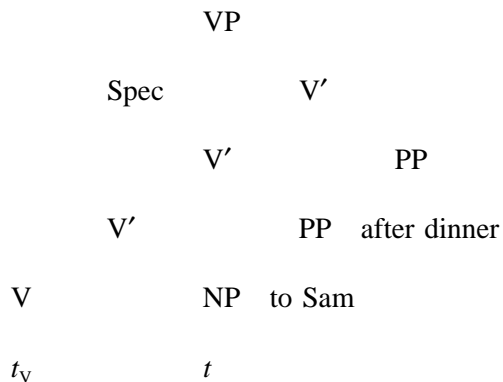
Coordination

The VP in (8) can behave like a constituent for coordination:

- (21) Mary told the story [_{VP} to Bill before breakfast] and [_{VP} to Sam after dinner].
- (22) I showed the office [_{VP} to the prospective students during their interviews] and [_{VP} to the faculty after cleaning it up].
- (23) Ginger saw Mary Ann [_{VP} in the park after dinner] and [_{VP} at the dock around sunset].

These examples are problematic for the standard view of VP, which would not assign a PP and adverbial constituent status separate from the object. However, if the object has moved to a VP-external position, then VP itself can be the constituent in question:

- (24) *Coordinated VP*



Right Node Raising

RNR also treats the VP minus both the verb and the object as a constituent:

- (25) a. Mary told the story, and Sam explained the problem, to Bill after dinner.
 b. [_{VP}[_{VP} t_V t_{NP} to Bill] after dinner]
- (26) a. I showed the office, and Mary showed the computer lab, to the prospective students during their interviews.
 b. [_{VP}[_{VP} t_V t_{NP} to the prospective students] during their interviews]

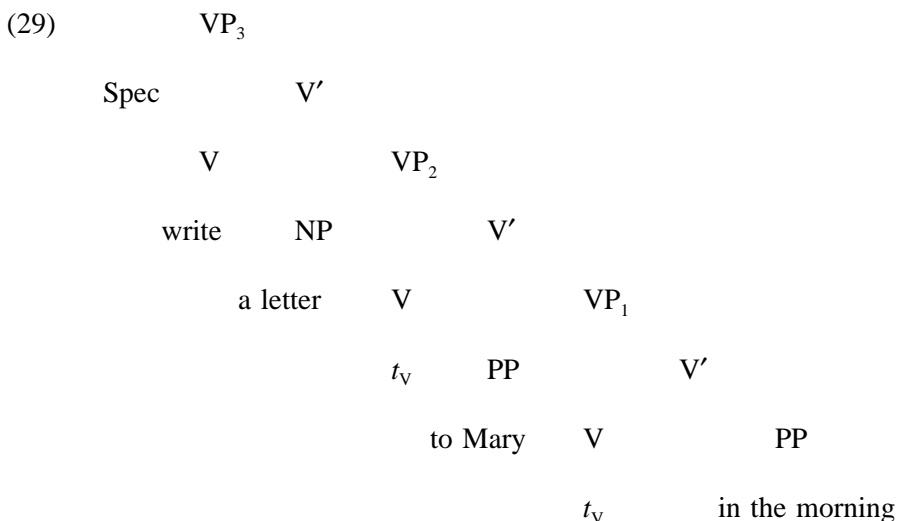
- (27) a. Ginger saw Mary Ann, and Thurston saw Lovey, in the park after dinner.
 b. [_{VP}[_{VP} *t_V* *t_{NP}* in the park] after dinner]

These constituency tests provide further motivation for the structure in (8). Both the main verb and the object in English move overtly to VP-external positions.

2.3 Adverb placement

The data in 2.1 and 2.2 are all consistent with Larson's (1988) "VP-shell" account, which would assign a structure like (29) to (28):

- (28) I wrote a letter to Mary in the morning



The VP-shell tree in (29) can account for the constituency tests in 2.1 and 2.2: the constituent which the verb is external to is VP₂; the constituent which the verb and object are both external to is VP₁. The main difference is that the direct object is not external to a VP. While the constituent structure of (29) and (8) are identical, it is the labels on the nodes that differ.

To proceed, then, I will show that VP₃ and VP₂ are functionally different from VP₁. This will support the claim that VP₃ and VP₂ are not VPs but rather functional projections à la (8), above.

Assuming my structure in (8), Jackendoff's (1972) Class II adverbs (*quickly*, *slowly*, *quietly*, *frequently*, etc.) are highly constrained in the functional area of the tree, but are freely distributed within the VP area of the tree. Consider the following examples:

- (30) a. (Quietly) Mikey (*quietly) has (*quietly) not (?quietly) been (quietly) visiting (*quietly) his parents (quietly).
 b. (Loudly) Betsy (*loudly) has (*loudly) not (?loudly) been (loudly) singing (*loudly) the anthem (loudly).

- c. (Quickly) Chris (*quickly) has (*quickly) not (?quickly) been (quickly) hitting (*quickly) the dog (quickly).

Adjunction status (with reference to example (30)a and a structure incorporating (8)):

- AGRsP = okay (before *Mikey*)
- AGRs' = * (before *has*)
- NegP = * (before *not*)
- TP = ? (before *been*)
- FP = okay (before *visiting*)
- AGRoP = * (before *his parents*)

The point of these examples is that in the functional area of the tree Class II adverb placement is highly constrained. Reference to particular functional heads/projections seems necessary to adequately constrain adverb distribution.

Consider VP-internal adverb placement; Class II adverbs freely mingle with VP-internal elements:

- (31) Sam talked (quietly) to Carol (quietly) about Oliver (quietly).

Thus, on an account incorporating (8), which distinguishes VP from other functional projections, it is possible to state the distribution of the Class II adverbs. In fact it seems necessary to be able to refer to individual functional projections in such a statement.

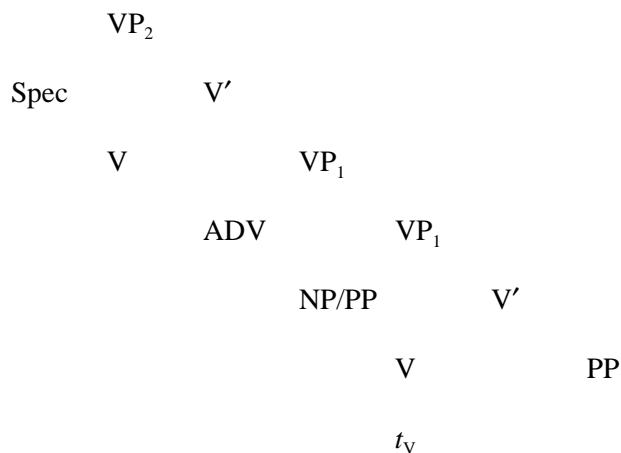
Now consider (32):

- (32) a. Sam talked quietly to Carol about Oliver.
 b. *Cindy showed quietly the book to Jan.

On the current account, *quietly* in (a) is acceptable because it appears in VP; however, it is unacceptable in (b) because, as noted above, this adverb cannot adjoin to AGRoP.

Now let us consider adverb placement in the VP-shell structure:

- (33) *Double Complement with Interpolated Adverb*



The generalization according to the VP-shell account seems to be that the adverb: (a) must not adjoin to VP_1 if the first complement is NP; but (b) may adjoin to VP_1 if the first complement is PP. Short of invoking Case-adjacency, which is unavailable to a Minimalist account, it is not clear what the generalization really is.

By placing the NP object in a functionally different part of the tree, it is possible to state the restrictions exemplified in (32). This is what the structure in (8) does.

Constituency tests suggest that the object is external to VP in English and adverb placement suggests that the object position is functionally different from VP. Combined, this evidence points to a tree like (8), above, which places the object in a VP-external functional specifier: Spec,AGRO.

3 Copy and delete movement

3.1 Reconstruction effects for binding

Chomsky (1993) provides an elegant account of A' reconstruction effects by exploiting the copy and delete strategy of movement. If movement involves placing a phrase into the target position, leaving a copy in situ, followed by deletion of all but one of the movement copies, the possibility arises of PF/LF mismatches. That is, the copy that remains on the PF side may or may not be the same copy remaining on the LF side. In the following example, (a) is ambiguous; the antecedent can be either *John* or *Bill*. If Binding Theory applies at LF, as Chomsky argues, PF examples like (a) suggest two different LFs: (b), where *John* binds the anaphor; or (c), where *Bill* does.

- (34) a. John wondered which picture of himself Bill saw
- b. $John_i$ wondered [which picture of himself] $_j$ Bill saw t_j [LF₁]
- c. John wondered [which e] $Bill_i$ saw [e pictures of himself] $_j$ [LF₂]

The copy and delete strategy allows for the two LFs in (b) and (c) to be associated with the one PF in (a) without any actual "lowering" or "reconstruction". After movement (copying) we have the intermediate representation in (35).

- (35) John wondered [which picture of himself] Bill saw [which picture of himself]

From this representation, depending on which phrases delete, the correct PF and LFs in (34) can be derived, thus allowing the reconstruction effect.²

Lasnik (1993) suggests that examples like (36) show that the copy and delete strategy is available for A-movement as well as A'-movement. (a) is grammatical, suggesting that at LF *pictures of himself* is c-commanded by *Tom*. The copy and delete strategy provides an intermediate structure like (b) from which the appropriate LF is derived in which the observed binding can take place, as in (c):

- (36) a. Pictures of himself seem to Tom to be ugly
 b. [pictures of himself] seem to Tom [[pictures of himself] to be ugly]
 c. e seem to Tom [[pictures of himself] to be ugly] [LF]

If A-movement, like A'-movement, exploits the copy and delete strategy then these reconstruction effects for binding can be given an elegant account.

3.2 Lowering effects for interpretation

Besides binding effects, the copy and delete strategy approach for movement can provide an account for various "lowering" effects familiar from the literature. Kratzer (1989) and Diesing (1992) have argued that to account for the ambiguous nature of the subject of a stage-level predicate, as opposed to that of an individual-level predicate, the subject of the former can appear in either Spec,IP (generic reading) or Spec,VP (existential reading) at LF (see (a)), while the subject of the latter may appear only in Spec,IP (generic reading only) at LF (see (b)).

- (37) a. Firefighters are [*e* available] [LF₁: generic]
 e are [firefighters available] [LF₂: existential]
 b. Firefighters are [(PRO) intelligent] [generic only]

Without going into the details of their accounts, which are embedded within a framework assuming Diesing's mapping hypothesis (see 1.2, above), the mechanism they assume for deriving the existential reading is syntactic "lowering" from Spec,IP to Spec,VP at LF. The copy and delete strategy obviates the need for such a lowering rule since it allows for the appropriate PF/LF mismatches. At PF the subject is in Spec,IP, having deleted the VP-internal copy. At LF, however, either copy of the stage-level subject can delete deriving the appropriate LFs, as in (a).

May (1977) also invokes syntactic lowering to account for the following ambiguous example:

- (38) [A unicorn]_i seems [*t*_i to be in the yard] [ambiguous]

The subject, which is raised to the main clause subject position, can be interpreted as if it is above *seems* as in (39)a, or below *seems* as in (39)b.

- (39) a. [a unicorn] seems [*e* to be in the yard] [LF₁]
 b. *e* seems [a unicorn] to be in the yard [LF₂]

Once again, the copy and delete strategy for A-movement derives these effects straightforwardly without syntactic lowering. While on the PF side the embedded copy deletes, on the LF side either copy can delete, allowing for the two LFs and two interpretations in (39).

The copy and delete strategy for movement opens up the possibility of an elegant account of various A-movement "reconstruction" or "lowering" phenomena.

4 Back to ACD

Recall the original examples we meant to account for. In (40) the relative clause is headed by a quantificational/proportional NP which, following Diesing's mapping hypothesis, must be VP-external at LF. In (41) the NP is existentially interpreted which means it must be VP-internal at LF.

- (40) Cindy read the/every/most book(s) that Bobby did *e*
 (41) *Cindy read many/few/two books that you did *e* ["cardinal"]

In 2 we argued that objects in English move overtly to Spec,AGRo. This means that in the overt syntax the relative clauses in (40) and (41) are in Spec,AGRo, a VP-external position. In 3 we argued that A-movement employs the copy and delete strategy. This allows for PF/LF mismatches. That is, though the objects in (40) and (41) are in Spec,AGRo at PF, their LFs can differ according to interpretation: in (40) the VP-internal copy of the NP deletes, leaving only a VP-external NP, allowing for a quantificational/proportional interpretation, as in (42); in (41) the NP copy in Spec,AGRo deletes, leaving only a VP-internal NP, which is then interpreted existentially, as in (43).

- (42) ...[_{AGRoP} [the/every/most book(s)...]_i [_{VP}...*t*_i] [LF]
 (43) ...[_{AGRoP} *e* [_{VP}...[many/few/two books...]] [LF]

How does this state of affairs affect ACD? At LF, the VP in (42) does not contain the object NP: VP-copying can take place because no infinite regress will result. ACD is licensed and example (40) is grammatical. The VP in (43) at LF will contain the object NP: upon VP-copying, infinite regress will result. ACD is not licensed and example (41) is ungrammatical.

5 Conclusions

In English, object NPs move overtly to Spec,AGRo for Case, employing the copy and delete strategy for movement. This analysis of object movement and positions provides a neat account of an otherwise unexplained characteristic of the ACD construction.

Notes

* I would like to thank Itziar Laka and the members of our Syntax Seminar at the University of Rochester, as well as Hagit Borer, Greg Carlson, Martin Haiden, Koji Hoshi, Kyle Johnson, Angelika Kratzer and Phil LeSourd for helpful discussion. Thanks also to the audience at FLSM VI, especially Chris Kennedy and Howard Lasnik, who both have recent papers on this topic which I was unable to incorporate into this version. This research was supported in part by a NSF Graduate Fellowship. All errors are my own.

1. Larson's (1988) "VP-shell" account is consistent with these examples. This account will be discussed in 2.3.
2. The details about what deletes where are left rather vague in Chomsky (1993). For the proposal to go through a principled account of deletion must be provided. See Runner (1994) for an attempt at such an account.

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