

Antecedent-Contained Deletion as Deletion

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1. Introduction

Recent discussion of the phenomenon of Antecedent-Contained Deletion (ACD, illustrated in (1)) continues to assume that the basic problem to be accounted for is one of infinite regress under LF-reconstruction of the antecedent VP (VP_1) in the position of the empty VP (VP_2) (e.g. Lasnik 1993, Fiengo and May 1994, Hornstein 1994, Den Dikken 1995, Lappin 1996, Kennedy 1997, Wilder 1997, Merchant 1998):

- (1) Dulles [$_{VP1}$ suspected everyone Angleton did [$_{VP2}$ e]]

In this article, we claim that the minimalist convention that phrase markers are not generated by context free rewrite rules, but are built up from the bottom up by the single structure building process Merge (Chomsky 1995) implies a radical shift of perspective on the analysis of ACD constructions. We show that it follows from the bottom-up strategy that ellipsis rules are PF-deletion rules instead of LF-interpretation rules. The problem of infinite regress furthermore only arises in theories of ellipsis that involve rules of interpretation like reconstruction, not in theories employing deletion rules. Solutions to the problem of infinite regress in terms of QR or movement into Spec, AgrOP are rendered superfluous (apart from being empirically inadequate in certain respects, an issue that we shall not go into in the present paper, however).

The article is organized as follows. Section 2 describes the two approaches to VP-ellipsis under discussion here, deletion and reconstruction. Section 3 discusses problems with the reconstruction analysis. Section 4 adds to these problems the observation that the structure building process of Merge is ill at ease with the possibility of generating empty VPs. Sections 5 and 6 describe ellipsis as an extreme case of deaccenting, supporting the deletion analysis of ACD. Section 7 shows that by adopting the deletion analysis to ACD, we can dispense with the operation 'vehicle change'. Finally, in section 8 we return to the original arguments

of Williams (1977) in defense of a reconstruction analysis of ellipsis, and show them to have lost force.

2. Deletion vs. reconstruction

ACD-constructions are a subclass of VP-ellipsis constructions, illustrated in (2a), where the interpretation of the elided VP is as in (2b):

- (2) a. Dulles suspected Philby, and Angleton did [e], too
 b. Dulles suspected Philby, and Angleton did <suspect him>, too

Two approaches to the empty VP in (2a) have been proposed in the literature. First, it might be proposed that the empty VP results from *deletion at PF*. This implies that in the syntax and at LF, ACD-constructions like (3) have a representation like (3), whereas at PF the VP₂ gets elided:

- (3) Dulles [_{VP1} suspected everyone OP_i Angleton did [_{VP2} suspect t_i]]

Another view, which has been common since Williams (1977), holds that the empty VP is there from the start of the derivation, and that its contents must be supplied by a *reconstruction* operation at LF which copies the contents of some antecedent VP into the ellipsis site. It is this view that yields the problem of infinite regress. Consider how in an ACD case like (1) copying the contents of the antecedent VP VP₁ into the position of the empty VP VP₂ inevitably results in copying the ellipsis site itself along with it (the reconstructed part is printed in bold face):

- (4) Dulles [_{VP1} suspected everyone Angleton did [_{VP2} **suspect everyone Angleton did [e]**]]

To solve this problem, it has been proposed that the quantified noun phrase *everyone Angleton did* in (1) is raised out of VP₁ prior to application of reconstruction, yielding (5) (May 1985). (Lasnik 1993 and Hornstein 1994 propose a similar analysis in terms of movement of the object out of VP into Spec,AgrOP.)

- (5) [everyone Angleton did [_{VP2} e]]_i [Dulles [_{VP1} suspected t_i]]

After QR, VP₁ no longer contains the empty VP₂, so that VP₁ can be reconstructed in the position of VP₂ without infinite regress, yielding the correct interpretation in (6):

- (6) [everyone Angleton [_{VP2} **suspected t**]], [Dulles [_{VP1} suspected t]]

The salutary agency of QR in ACD constructions has been taken to constitute an argument in support of the existence of the operation QR (e.g. May 1985, Fiengo and May 1994) (the same argument has been made with respect to the existence of movement into Spec,AgrOP). However, the argument rests on a particular choice of analysis of ACD-constructions, namely the type of analysis that starts out from an empty VP, the contents of which must be reconstructed at LF. In the other type of analysis, involving deletion at PF, the problem of infinite regress does not arise, and no argument in support of QR can be derived from it.

To be sure, short of the avoidance of infinite regress, other evidence has been advanced in support of the analysis of ACD constructions in terms of QR.

- (7) Dulles suspected the spy that kissed everyone who Angleton did

The observation is that the elided VP can be understood as *kissed t* (the embedded VP) but not as the matrix VP *suspected the spy that kissed t*. This would follow from locality constraints on QR, which would prevent the quantified NP from raising across a clause boundary into the matrix clause, so that the undesired reading could only be derived at the expense of incurring infinite regress. But this fact is just as easily explained in a deletion approach, which assigns the following representations to the two readings of (7):

- (8) a. Dulles suspected the spy that kissed everyone who Angleton [kissed t]
 b. Dulles suspected the spy that kissed everyone who Angleton [suspected the spy that kissed t]

Observe that (8b) is ruled out in its nonelided version as well, and for a very simple reason: one of the peculiarities of the ACD construction is that the trace of QR in the antecedent VP becomes the trace of the relative wh-operator in the reconstructed VP (see e.g. (6), where the trace in the reconstructed VP₂ is bound by the empty operator of the relative phrase). The distance between this wh-trace and its antecedent needs to observe subadjacency, which is the case in (8a), but not (8b). Facts as these therefore do not favor a reconstruction approach over a deletion approach. This particular case, as well as other evidence of this type, is discussed by Tiedeman (1995), who argues that this sort of objection against a deletion approach is not based on solid grounds.

3. Problems with reconstruction

In an earlier contribution (Vanden Wyngaerd and Zwart 1991), we discussed a

number of problems connected with the reconstruction process involving QR. One of the problems that stands out is that ACD is not restricted to constructions involving quantified noun phrases:

- (9) Dulles [_{VP1} suspected Philby, who Angleton did [_{VP2} e] as well]

In (9), the empty VP VP_2 is contained within the antecedent VP VP_1 just like in (1). However, QR is standardly restricted to quantified noun phrases, and must not be taken to apply to the noun phrase *Philby, who Angleton did as well* in (9). Reconstruction of the contents of VP_1 in the position of the empty VP_2 therefore would still entail the infinite regress.

In recent years, an even more damaging argument against the reconstruction *cum* QR approach has turned up. In the current Minimalist approach (Chomsky 1995), traces of A'-movement are taken to be copies of the moved element which for some reason fail to get spelled out at PF. This copy theory of movement plays havoc with the reconstruction approach to ACD-constructions, essentially undoing the work QR was supposed to do. Thus, if QR leaves a full copy of the moved quantified noun phrase, the result of QR will be (10) instead of (5):

- (10) [everyone Angleton did [_{VP2} e]]_i [Dulles [_{VP1} suspected
[everyone Angleton did [_{VP2} e]]_i]]

In (10), reconstruction of VP_1 in the position of VP_2 yields (11), which suffers from the infinite regress problem in the same way as (4) did earlier (in fact, doubly so, since we now have two copies of VP_2):

- (11) [everyone Angleton did [_{VP2} suspect everyone Angleton did [e]]]_i
[Dulles [_{VP1} suspected [everyone Angleton did [_{VP2} suspect
everyone Angleton did [e]]]_i]]

The argument is slightly more complex, as even within the copy theory it must be assumed that copies of DPs moved by QR ultimately translate as variables. But the details of how this works yield further problems (see Fox 1995). One of the attractive features of the copy theory of movement is that it provides a convenient way of accounting for reconstruction phenomena, such as the Condition C effect in an example like (12a), which looks like (12b) under the copy theory:

- (12) a. John_i wondered [which picture of Tom_j] he_{i/*j} liked
b. John_i wondered [which picture of Tom_j] he_{i/*j} liked [which picture of Tom_j]

The fact that the pronoun cannot refer to *Tom* straightforwardly follows from the fact that it c-commands *Tom* in the representation (12b). The copy theory of movement thus allows a maximally simple and elegant account of the obligatory reconstruction effect in (12a). But the representation in (12b) is not the final one: principles of interpretation determine that the wh-operator needs to bind a variable. But if we replace the source position of the movement by a variable at LF, the attractive account of the reconstruction effect is lost. Chomsky (1995) proposes a solution that will allow us to have our cake and eat it, which assumes that the variable does not correspond to the entire moved wh-phrase, as usual, but only to a subpart of it, in the following fashion (in point of fact, the alternative, more conventional, variable translation is also available in principle, but ruled out by an independent restriction, the so-called preference principle; cf. Chomsky 1995:209):

(13) John wondered [which x] [he liked [x picture of Tom]]

Now if we apply this type of variable-creation mechanism to cases of ACD such as the one in (10), which the preference principle forces us to, we get the representation (14):

(14) [every x]_i [Dulles [_{VP1} suspected [x Angleton did [_{VP2} e]_i]]]

This representation continues to be burdened with the problem of infinite regress, as copying the content of VP₁ into the ellipsis site VP₂ (now still in its base position) will inevitably involve copying the ellipsis site itself once more. Similarly, if LF-movement merely involves the attraction of features, no ACD resolution is possible.

Noting the problematic consequences of the copy theory of movement for the QR analysis of ACD, Fox (1995) proposes to overrule the preference principle in exactly these cases (see also Merchant 1998). The underlying idea is that this is allowed if otherwise interpretability could not be achieved—i.e., if there is a danger of an infinite regress. While it is possible to keep the QR *cum* reconstruction analysis alive in this way, we believe that the problems noted call for a principled revision of the question what type of analysis (deletion vs. reconstruction) is best suited to describe the properties of ACD-constructions. In the remainder of this article, we attempt such a revision, starting from the theory of phrase structure currently adopted within the Minimalist Program.

4. Empty VPs in the minimalist framework

In the Extended Standard Theory, phrases are built up by a combination of top

down rewrite rules and lexical insertion rules. The rewrite rules generate (abstract) structures in accordance with X'-theory, which contain (terminal) nodes to be filled up by the lexical insertion rules. A simple VP like *kissed Mary* would be the result of the following rules:

- | | | |
|---------|--|--|
| (15) a. | REWRITE RULES
VP → XP, V'
V' → V, NP
NP → Det, N'
N' → N | b. INSERTION RULES
insert <i>kiss</i> under V
insert <i>Mary</i> under N |
|---------|--|--|

In this system, nothing stops the rewrite rules from generating nodes that are ignored by the lexical insertion rules. VP-ellipsis constructions could be a case in point, where the rewrite rules specify the presence of the empty VP (or even its internal structure, cf. Wasow 1972), but the insertion rules fail to supply the VP with lexical items—hence the necessity of LF-interpretation rules.

In the Minimalist Program, phrases are built up by a process called Merge, which directly combines elements from the Lexicon (basically bundles of features) with each other. The simple VP *kissed Mary* would be the result of the operation in (16):

- (16) Merge *kissed* and *Mary*, yielding = {LABEL, {*kissed*, *Mary*}}

The label of α in (16) is a specification of the features of the combination of *kissed* and *Mary*, which are essentially derived from the head, *kissed*.

The crucial difference between Merge and the earlier system is that a discrepancy between structure building and lexical insertion no longer exists. Structure is built only to the extent that lexical items are merged. Hence, if there is a verb phrase, there has to be a lexical item that projects its features to the label of the verb phrase, i.e. a verb.

This means that the current standard view of VP-ellipsis (involving empty VP-nodes to be interpreted via LF-reconstruction) can only be maintained if the structure building process in this case merges empty elements. While this possibility cannot be discounted *a priori*, it is clear that it goes against the spirit of the minimalist program, requiring an extension of the inventory of lexical items with empty categories of various sorts. We conclude from this that if an alternative derivation of ellipsis constructions, not involving the projection of structure from empty terminals, can be shown to have any plausibility, it must be preferred as involving no *ad hoc* empty categories.

5. Deletion as extreme deaccenting

Tancredi (1992), discussing VP-ellipsis in English, argues that VP-ellipsis is an extreme case of VP-deaccenting. We believe that his careful description of the processes of deaccenting and ellipsis lends great plausibility to the analysis of ACD as deletion at PF (see also Chomsky and Lasnik 1995:125f).

Tancredi (1992:24f) shows that an elliptical VP has the same interpretational properties as a deaccented VP. By way of illustration, consider the interpretation of the pronoun that is understood to be present in the elliptical VP in (17a), interpreted as in (17b):

- (17) a. John said he is brilliant before Bill did [_{VP} e]
 b. John said he is brilliant before Bill did <say he is brilliant>

As is well known, there are clear restrictions on the kind of interpretation the pronoun *he* in the elliptical part of (17b) may receive. Thus, the elliptical *he* may refer to Bill ('sloppy') or John ('strict'), as illustrated in (18a) and (18b). Furthermore, if the elliptical *he* refers to a third party (i.e., neither Bill nor John), the overt *he* must refer to that same party, as illustrated in (18c,d,e):

- (18) a. John₂ said he₂ is brilliant before Bill₁ did <say he₁ is brilliant>
 b. John₁ said he₁ is brilliant before Bill₂ did <say he₁ is brilliant>
 c. *John₃ said he₃ is brilliant before Bill₂ did <say he₁ is brilliant>
 d. John₃ said he₁ is brilliant before Bill₂ did <say he₁ is brilliant>
 e. *John₄ said he₃ is brilliant before Bill₂ did <say he₁ is brilliant>

As Tancredi (1992:25) shows, the same restrictions apply to a pronoun contained in a deaccented VP (deaccenting indicated by small italic print):

- (19) a. John₂ said he₂ is brilliant before Bill₁ *said he₁ is brilliant*
 b. John₁ said he₁ is brilliant before Bill₂ *said he₁ is brilliant*
 c. *John₃ said he₃ is brilliant before Bill₂ *said he₁ is brilliant*
 d. John₃ said he₁ is brilliant before Bill₂ *said he₁ is brilliant*
 e. *John₄ said he₃ is brilliant before Bill₂ *said he₁ is brilliant*

From a deletion point of view, the parallelism between VP-ellipsis and VP-deaccenting can be made sense of quite easily, by stating that ellipsis is an extreme case of deaccenting, i.e. a degree of deaccenting that leads to non-spell out of the deaccented material. From a reconstruction point of view, the parallelism between ellipsis and deaccenting would need a more elaborate account: one would not only need a condition deriving the relevant facts, but also have it apply to both LF-

reconstructed and deaccented VPs. Obviously, this raises the question what deaccented and reconstructed VPs have in common, a question that is directly answered by the deletion approach.

One way of answering this question in a reconstruction approach is to assume that deaccenting, like VP-deletion, is also a case of reconstruction, but then of a sort that applies prior to Spell-Out. VP-deletion and deaccenting would then only differ in the locus of application of the reconstruction operation. Such an account predicts that there will be no VP-deaccenting variant of ACD-constructions. This is predicted since reconstruction in ACD-constructions crucially has to take place after the LF-operation QR for infinite regress to be avoided. Hence, reconstruction in the overt syntax, before LF, yielding VP-deaccenting, should not occur. But the prediction is clearly false, as the example in (20) shows (cf. (1)):

(20) Dulles [_{VP1} suspected everyone OP_i Angleton [_{VP2} suspected *t_i*]]

In (20) the VP₂ is deaccented, hence, under the approach we are considering, its content must have been reconstructed prior to LF, and also prior to QR. Still, the fact that (20) is interpretable suggests that there is no infinite regress, i.e. that QR has taken place *before* reconstruction. Obviously, this is a contradiction, which proves *ex absurdo* that one of the premises of such an account must be wrong.

Alternatively, we could assume that the derivation of VP-deaccenting starts out from a full fledged VP, whereas VP-deletion starts out from an empty VP. In that case, (20) would not be the result of reconstruction prior to LF, but simply of deaccenting of already present material. However, this assumption would leave the interpretational identity of VP-ellipsis and VP-deaccenting illustrated in (18)–(19) a complete mystery.

In view of the absurdity yielded by the attempt to describe both VP-ellipsis and VP-deaccenting in terms of reconstruction, we are forced to conclude that both involve generation of a full-fledged VP, which is then deaccented or deleted (i.e. not spelled out) in the derivation from syntax to PF. In this analysis, LF operations like QR and reconstruction never enter the picture.

6. What drives deaccenting/deletion?

In Tancredi's analysis, deaccenting is a function of the focus structure of an utterance. In constructions like (19), *John* and *Bill* are in focus, and the other material, in particular the part *said he is brilliant*, provides the 'ground', or, as Tancredi calls it, the 'focus related topic'. The 'focus related topic' is kept constant in the complete utterance, whereas the focus is varied. The parts that are varied

receive prominent pitch accent, whereas the part that is kept constant may be deaccented, even to the extent that it gets deleted. This property is also one of ACD constructions, which all turn out to have a deaccented variant of the type described by Tancredi:

- (21) Dulles suspected everyone Angleton *suspected*

It is the organization of the information in an utterance in terms of focus and focus related topic that provides the trigger for the deaccenting/deletion. It is important to note that strict morpholexical identity is not required for the elements that constitute the focus related topic in the utterance. Thus, Tancredi (1992:26) shows that (22) has exactly the same interpretational properties as (19):

- (22) John said he is brilliant before Bill *said he is a smart guy*

As in (18) and (19), the pronoun *he* included in the deaccented part can be interpreted strictly or sloppily, and, in case it refers to a third party, it determines the interpretation of the overt pronoun *he*. This observation shows that identity is not the trigger for deaccenting/ellipsis. Rather, deaccenting/ellipsis is conditioned by the organization of the sentence in terms of focus and focus related topic.

In view of this, it is interesting to quote Lasnik's (1993:34) discussion of the deletion analysis of ACD-constructions (emphasis added):

- (23) *Suppose that the ellipsis in these constructions results from actual deletion, in the PF-component, following movement of the relative operator in overt syntax. (...) [Then] the infinite regress problem re-arises. The trigger for the deletion contains the deletion site. This is no surprise since the entire infinite regress problem is completely neutral between an 'interpretive' account based on LF copying and a 'transformational' one in terms of overt deletion. In the former instance, the derived LF is infinite, while in the latter the underlying structure is.*

This statement hinges on the presupposition that the trigger for VP-deletion is the presence of an identical VP in the construction, rather than the focus-ground partitioning identified by Tancredi (1992). If the trigger had to be an identical VP, the VP₁ in (24) could not possibly function as the antecedent for deletion of VP₂, as the latter is contained in the former:

- (24) Dulles [_{VP1} suspected everyone Angleton did [_{VP2} suspect]]

However, if the trigger for the deletion is the parallelism of the elements *suspected* and *suspect* which constitute the focus related topic in (24), Lasnik's assessment of

the equivalence of the two approaches is simply wrong. As discussed in the next section, identity between the two VPs involved in VP-deletion is not generally required—just like with VP-deaccenting (cf. (22)).

Quite apart from that, we fail to see how any single underlying structure, generated by the structure building process of Merge, could ever be ‘infinite’ in the same way that an LF-representation with an antecedent-contained empty VP is. It is precisely because the process of Merge does not give rise to the possibility of infinite regress that we believe the currently standard reconstruction approach to ACD-constructions does not fit well in the Minimalist framework.

7. Vehicle change

The fact that no strict identity for focus related topics is required in constructions of VP-deaccenting or VP-ellipsis (cf. (22)) provides another argument in favor of the deletion approach to ACD.

It is well known (since Bouton 1970) that empty VPs need not be strictly identical to their antecedents. Thus, in the interpretation of the elliptical part in (25), the pronoun *she* is replaced by *I*:

- (25) Cheryl stops to look at every pretty flower she stumbles onto, and I
do <stop to look at every pretty flower I stumble onto>, too

In the deaccented variant of (25), this replacement of the pronoun occurs automatically:

- (26) Cheryl stops to look at every pretty flower she stumbles onto, and I
stop to look at every pretty flower I stumble onto, too

In (25)–(26), the focus elements are *Cheryl* and *I*, and the focus related topic is *stop to look at every pretty flower x stumbles onto*. The focus related topic ignores the exact morpholexical status of the subject of *stumbles* (as well as the exact inflectional morphology of *stumbles*). Put differently, spelling out the pronoun as *I* in (26) does not affect the status of *stop to look at every pretty flower I stumble onto* as the focus related topic.

In order to account for this type of variation, the reconstruction approach has to resort to a process introduced by Fiengo and May (1994) as ‘vehicle change’. This process is summarized by them as in (27):

- (27) [–pron] → [+pron]

The vehicle change defined in (27) is part of the process of reconstruction. It is needed to account for the interpretation of the elliptical part in (28), where *John* is not repeated as *John*, but as *him*:

- (28) Mary loves John₁, and he₁ thinks that Sally does <love him/*John>, too

Reconstruction of the antecedent VP as *loves John* would lead to a violation of Principle C of the Binding Theory at LF.

But once we realize that the deaccented variant of (28) likewise involves *him* rather than *John*, it becomes clear that the operation of vehicle change is superfluous:

- (29) Mary loves John₁, and he₁ thinks that Sally *loves him/*John*, too

More generally, it can be shown that the variation introduced by vehicle change is also allowed with deaccented VPs. This leads to the conclusion that the process of vehicle change is redundant.

More seriously, vehicle change as defined by Fiengo and May (1994) does not account for the change from one pronoun (*she*) to another (*I*) in (25)–(26), or for cases like (30), from VandenWyngaerd and Zwart (1991:157), where a referential expression returns as a variable in the elliptical or deaccented part:

- (30) a. John talked about Mary, but I wonder who Harry did <talk about {t/*Mary}>
b. John talked about Mary, but I wonder who Harry *talked about* {t/*Mary}

Notice that it is but a small step from the VP-ellipsis cases in (30) to the ACD-cases in (31), which could be derived from ‘vehicle changing’ *everyone Harry did* into a variable (as proposed in Vanden Wyngaerd and Zwart 1991):

- (31) a. John talked about everyone Harry did <talk about {t/*everyone Harry did}>
b. John talked about everyone Harry *talked about* {t/*everyone Harry talked about}

This proves that if we take vehicle change to be the source of the variation between the ‘antecedent’ part and the elliptical/deaccented part, QR is not needed to avoid the infinite regress, even on a reconstruction account. However, the more important conclusion appears to be that the entire complex of QR, reconstruction, and vehicle change is redundant in view of the parallelism between deletion and deaccenting.

8. Williams (1977)

We conclude this article by a brief discussion of the argumentation of Williams (1977) against a deletion analysis of VP-ellipsis. Williams' arguments presuppose a distinction between 'sentence grammar' (which includes processes operating at the levels of D- and S-structure, PF, and LF) and 'discourse grammar' (which is fed by LF and includes, among other things, the rule of VP-deletion). Discourse grammar is a separate level of representation, ordered sequentially after sentence grammar. Williams' argumentation is intended to show that VP-ellipsis, a discourse conditioned process, can feed or bleed processes of sentence grammar (such as Auxiliary Reduction, Gapping, and the processes yielding scope interpretation). In a level ordering approach such as the one defended by Williams, however, this can only be achieved by assuming that VP-ellipsis involves base generated empty VPs. This allows the empty VPs to interact with sentence grammar in a manner different from full VPs, but still allows the process of their interpretation to be seen as a matter of discourse grammar. The weak point in this argument seems to us to be the claim of level ordering, which is clearly incompatible with the general structure of the grammar assumed in the minimalist program (cf. Chomsky and Lasnik 1995:126).

This leaves open the possibility that various types of deletion are conditioned differently, e.g. gapping, which is not discourse conditioned, vs. VP-deletion, which is. We suspect that when discourse conditioned processes, such as VP-ellipsis, block processes of sentence grammar, such as gapping, this can be explained in terms of the prosodic properties of VP-ellipsis constructions, where the object noun phrase is part of the focus related topic, as compared to the prosodic properties of gapping constructions, which require both the subject and the object to be in focus. We hope to address this issue in greater detail in a separate publication.

9. Conclusion

We have argued in this article that Antecedent-Contained Deletion, and VP-ellipsis more generally, involves deletion at PF of a VP which is fully present in both overt and covert syntax. The deletion is shown to be an extreme form of deaccenting, which is a prosodic effect of the partitioning of the sentence in a focus part and a focus related topic part (Tancredi 1992). The currently standard analysis of ACD, involving an empty VP in overt syntax, to be provided with a contents through the LF process of reconstruction, was shown to be suboptimally compatible with the structure building process of Merge currently assumed within the Minimalist

Program (Chomsky 1995). One conclusion to be drawn from the research reported here is that from the analysis of ACD no argument supporting the LF operation Quantifier Raising (May 1985) can be derived.

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