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Negation and Verb Movement

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0. Introduction

In this paper, I discuss the interaction between verb movement and negation in Standard Arabic (SA), Moroccan Arabic (MA), English and French and argue that this interaction is sensitive to the morphological status of the negative head. On the one hand, in SA and English, the negative head is a free morpheme located between TP and VP and verb raising to tense is blocked. On the other hand, in MA and French the negative head is a bound morpheme and verb movement is not blocked. The analysis to be proposed presupposes a representation where functional categories such as Tense, Agreement and Negation each occupies its independent projection. We start by giving empirical and conceptual arguments for the representation we are going to adopt.

1. Representation and Derivation of functional Categories: Case of Standard Arabic

Consider the representations of functional categories given in (1a) and (1b):[1]

(1) a. [IP [I T, Agr, Neg] VP]   b. TP AgrP NegP / T Agr Neg

The representation in (1a) makes empirical and conceptual predictions that can be easily falsified. Conceptually, (1a) predicts the existence of principles of the grammar that are stated over the I projection rather than on its individual members such as T, Agr or Neg. When we look closely at the theory, it is hard to find such syntactic principles or constraints. For example, the process of identification of null thematic pronominal elements refers to person agreement without reference to tense or negation. Similarly, minimality constraints on Wh-movement discussed in Rizzi (1990)

17

refer to Neg (or rather Spec NegP) without reference to Agr or T. All these facts point to one conclusion, namely that the the category I does not define a natural class.

On the empirical level, the representation in (1a) predicts that all functional categories, especially Tense and Agr, would always show up on the same host. That is, either by verb raising to I or I lowering to V all morphemes under I should end up on the same lexical host.[2] This prediction is falsified by negative sentences in Standard Arabic where tense is carried by negation and agreement by the verb as illustrated in (2b): (ignoring irrelevant details)

(2) a. T-Tullaab-u ďahab-uu
        the-students-Nom go-3MP Past
        'The students left'

     b. T-Tullaab-u lam ya-ďhab-uu
        the-students NEG.Past Imp-go-Agr
        'The students did not go'

To account for (2b) T and Agr should be represented indepedently. We need a structure where T and Agr are located under independent projections, otherwise it will be hard to explain why in negative sentences the verb carries Agr and the negative T.
One possible structure that may account for the above conceptual and empirical problems is the one proposed by Ouhalla (1988), Pollock (1989) and Chomsky (1988)[3]. The structure is given in (3):[4]

(3)
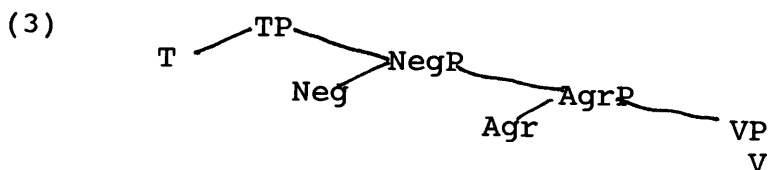
One question that immediately arises in connection with the representation in (3) is the following: Given its location between TP and VP, how does negation interact with verb movement? We saw before that in negative sentences in Standard Arabic, Negation carries tense and the verb carries agreement. The same facts obtain in the context of future Tense:[5,6]

(4) a. T-Tullaab-u   sa-ya-ďhab-uuna
        the-students-Nom FUT-3M Imper-go-Agr
        'The students will go'

```
        b.  T-Tullaab-u           lan      ya-dhab-uu
            the-students-Nom Neg FUT 3MImp-go-Agr
            'The students will not go'
```

In (4a) the verb carries T and Agr. In (4b) negation carries T and the verb carries Agr.

So what is preventing verb raising to Tense in (2b) and (4b)? In Benmamoun (1989) I account for the facts in (2b) and (4b) by proposing that verb movement is subject to minimality. That is verb movement is blocked in the context of a potential antecedent. This is in effect a generalization of the minimality theories of Aoun & Li (1989) and Rizzi (1990). Given the representation in (3), this means that if the verb raises to tense across Neg, the latter will prevent the verb from antecedent-governing the trace. In other words, the verb and its trace cannot form a chain across the negative. I propose that verb movement is subject to the generalized minimality constraint given in (5):

(5) A trace should be bound in the domain of the first potential antecedent.

The definitions of minimality and antecedent government are given in (6) and (7) respectively:[7]

(6) Minimality

>   A antecedent-governs B only if there is no C
>   such that
>   (i) C is a potential antecedent-governor for B,
>   and
>   (ii) C c-commands B and does not c-command A.

(7)   Antecedent Government

>   A antecedent governs B iff
>   (i) A and B are coindexed
>   (ii) A c-commands B
>   (iii) Minimality is observed

Given the representation in (3) and the constraint in (5) the structure in (8) is correctly ruled out in SA. First, the verb raises to Agr. That derivation does not violate the minimality constraint in (5). Then the verb crosses Neg to T. This derivation violates (5) because the verb trace is free in the domain of a potential antecedent which is the negative head:

20

BENMAMOUN

(8) *

```
                        TP
              T              NegP
          T      V          /    \
          Past  dhb       Neg      AgrP
                          laa     /    \
                                Agr     VP
                                        V
                                        t
```
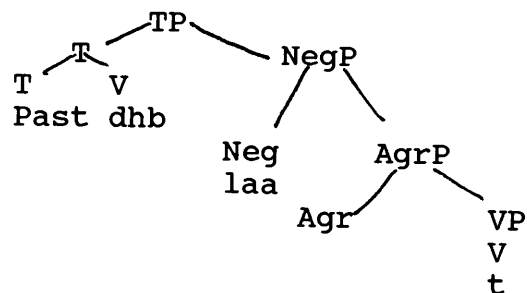
One reason why we have opted for a minimality based analysis for the interaction between Negation and verb movement is due to the fact that the blocking effects induced by the presence of negation obtain also in the contexts of Wh-movement (antecedent government) and binding. In other words, by adopting minimality theory, we have avoided resorting to constraints that would be specific to head movement such as the Head Movement Constraint (HMC) (Travis 1984) . Aoun & Li (1989) discuss cases where negation interacts with binding of bound pronouns. Similarly, Rizzi (1990) discusses instances where negation interacts with the antecedent government relations between a Wh-phrase and its trace. The relevant examples are given in (9) and (10):

(9) (Aoun & Li 1989)

a. * Meigeren$_i$ dou shuo ta$_i$ de le jiang
     everyone all say he get Asp prize
     'Everyone said that he got the prize'

b.   Meigeren$_i$ dou mei shuo ta$_i$ de le jiang
     everyone all not say he get prize
     'Everyone did not say that he got the prize'

(10) (Rizzi 1990)

a. How strongly do you believe that inflation will rebound.
b. How strongly do you not believe that inflection will rebound.

(9a) is illformed because the pronoun is bound by the quantifier. This violates a disjointness constraint on bound pronouns in this language which requires that they be free in the domain of the first potential antecedent. (9b) is grammatical because the pronoun is free in the domain of the first potential antecedent (the negative) and therefore can be bound by the quantifier. This is a clear case of negation determining a locality

NEGATION AND VERB MOVEMENT

constraint for the binding of bound pronouns.

Another case of negation restricting the domain of antecedent government is given in (10). In (10a) the lower construal of the Wh-phrase is possible. In (10b) this reading is not available. The difference between (10a) and (10b) is the presence of negation in the latter. Therefore, it is natural to assume that it is negation that is blocking the lower construal. This implies that negation prevents the Wh-phrase from antecedent governing a trace in the lower clause.

Once we take these cases into account, it is not surprising that negation can block verb movement. In fact if we analyze the facts in SA in a different way, say in terms of the HMC, we would be missing an important generalization, namely that negation seems to exhibit the same opacity effects in other contexts. Therefore, I conclude that this generalization is significant and that head movement is subject to independently motivated locality constraints.

To sum up, the proposal is that in the context of negation the verb cannot carry main tense due to the minimality effect created by the negative head located between tense and the verb. Next, I show how this proposal can extend to English.
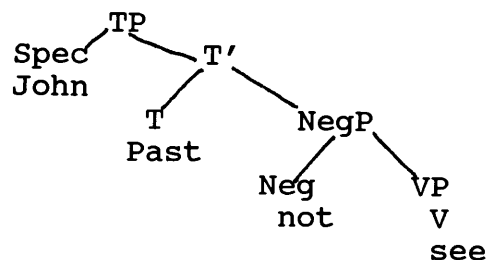
## II. **English**

Consider the paradigm in (11):
(11) a. * John saw not Bill
      b. * John not saw Bill
      c.   John did not see Bill

Lexical verbs in English cannot carry tense in the context of sentential negation. Instead, an empty verb is inserted to support T. Let us assume with Pollock (1989) that English has the representation in (3). We give in (12) the relevant projections only. I will omit reference to the agreement projection because it is not clear that this projection is syntactically visible in English.[8]

(12)

```
                  TP
              /        \
          Spec          T'
          John        /    \
                    T        NegP
                   Past     /    \
                         Neg      VP
                         not      V
                                  see
```

22
BENMAMOUN

Suppose that, on a par with SA, negation in English is a potential antecedent for a head trace that it c-commands. If the verb moves beyond negation, the minimality constraint in (5) will be violated. This accounts for why verb movement is not allowed in the context of negation in (11a). For example, (11a) has the representation in (13):

(13) *
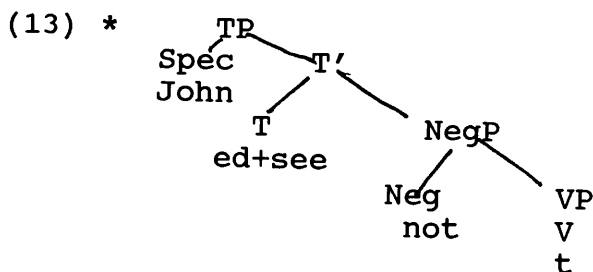
The negative head, being a potential antecedent, is closer to the verbal trace than the moved verb.

However, the above analysis does not extend to auxiliary verbs and modals. As shown in (14) and (15) these verbs do carry tense in the context of negation.

(14) a. I have not seen John
      b. * I do not have seen John
      c. I was not eating
      d. * I do not be eating

(15) a. John could not go
      b. * John did not can go
      c. John must not go
      d.* John does not must go

According to Pollock, the difference between lexical verbs and verbs like have and be is attributed to their semantic properties. Have and be do not have semantic roles that need to be transferred to their traces. We adopt the spirit of this analysis and argue that have and be can raise beyond negation because the traces of these verbs have no semantic roles to assign. Thus the traces of have and be may delete. In fact, Pollock's insight has a natural explanation within our analysis. If one of the rationales behind antecedent government is to enable the antecedent to transfer its content to its original position then it follows that negation, a potential antecedent, will only block movement of verbs that have semantic roles to transfer.

As far as the modals are concerned, their behavior

follows from our analysis regardless of their DS position. If we base-generate them in a VP projection below negation their raising across the latter will follow for the same reasons as the raising of have and be. On the other hand, if we generate them in T then all we have to say is that they do not interact with negation because they do not raise in the first place.

To sum up, lexical verbs in English cannot cross negation because the latter is a potential antecedent for the verbal trace. Only verbs with semantic roles are required to enter into antecedent government relations with their traces. This in turn explains the movement of have and be across the negative.

Therefore, the interaction between negation and verb movement in English supports the analysis we proposed for SA and gives further evidence for reducing verb-trace relations to existing constraints on antecedent government and binding. The only difference between SA and English is that the latter resorts to do-support to save the structure when negation blocks verb movement, whereas, in the former the negative itself raises to support the tense inflection.

However, notice that our analysis of English, presupposes that this language does have movement of lexical verbs in the syntax. In the following section, I will present facts that show that the evidence given against raising is inconsequential at best.[9]

VP adverbs have been taken as evidence that thematic verbs do not raise in English (Pollock 1989 and references cited there)

(16)   (Pollock 1989)

        a.   John often kissed Mary
        b.   * John kissed often Mary
        c.   John is seldom satisfied

The adverb precedes the verb kissed but follows the verb be. Under the assumption that the above adverbs are adjoined to VP, it seems that it is reasonable to suppose that thematic verbs such as kiss do not raise, whereas nonthematic verbs such as be do raise.

However, the facts are more complex. As Pesetsky (1989) points out, adverbs can occur between the verb and a prepositional object:[10]

BENMAMOUN

(17)   (Pesetsky 1989)

     a. Bill knocked recently on it
     b. Sue looked carefully at him
     c. Harry relies frequently on it

If as Pollock (op.cit) argues, adverb placement is derived from its interaction with verb movement, then this leads us to assume that in (17) the thematic verb does raise. Presumably, the position to which the verb raises corresponds to Pollock's (1989) Agr projection. However, according to Pollock that position should be opaque for head movement, otherwise we will not be able to account for (16b). This seems to be paradoxical. We need verb raising to derive adverb placement in (17) and affix lowering to derive adverb placement in (16) and failure of verb raising in the context of negation. In other words, Agr is opaque in (16) but transparent in (17). But notice that this is a paradox as long as adverb placement is totally related to verb movement.

In fact adverb placement in English may follow from other properties of the language. For instance, that the adverb cannot occur postverbally in (16b) can be accounted for independently by Stowell's Case-adjacency requirement. The object has to be adjacent to the verb in English for accusative Case assignment to take place.[11]

Given these facts, namely that (16b) has an independent explanation and that (17) are legitimate English sentences, we can conclude that adverb placement is to some extent independent from verb movement (Williams 1990). That is adverb placement cannot be used as a typological criterion to determine whether a language has verb raising or affix lowering.[12]
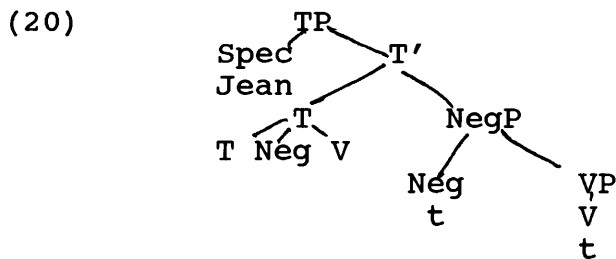
To sum up, I have argued that English does not have verb movement to T in the context of negation because of minimality. The negative head <u>not</u> is a potential antecedent for the trace of the thematic verb. However, this analysis, as it stands, incorrectly predicts that, all things being equal, verb movement in the context of negative heads should always fail to take place. In French and Moroccan Arabic the verb does carry tense even in the context of sentential negation. In the remaining sections I propose a possible account for the apparent counter-examples in these languages.

NEGATION AND VERB MOVEMENT   25

III. **French**

Consider the French sentences in (18):

(18)   a. Jean ne parle pas Anglais
          Jean Neg speaks   English
          'Jean does not speak English'

       b. Jean n'est pas fou
          Jean Neg'is   crazy
          'Jean is not crazy'

In French, the verb can carry the main tense in the context of sentence negation. Under the assumption that French also adopts the structure in (3), the data in (18) challenge our analysis. As evident from (18), negation does not block verb movement to T in French. In this respect, French sharply contrasts with SA and English. Negation seems to be inert in French and active in SA and English. However, notice that the negative head _ne_ is affixal whereas _laa_ and _not_ are free morphemes.[13] As any projected bound morpheme, _ne_ requires a lexical host at SS (see footnote 2). This morphological property of the negative head _ne_ forces verb movement via the negative projection. That is, since the negative is a bound morpheme the verb cannot bypass it on its way to T.[14] The verb moves successive cyclically to the negative head and the whole complex moves to tense. This is illustrated in (19) and (20) respectively:

(19)

```
              TP
          Spec    T'
          Jean   /  \
              T     NegP
                  Neg   VP
                  ne    V
                       mange
```

(20)

```
              TP
          Spec    T'
          Jean  /   \
            /T     NegP
          T Neg V   /   \
                  Neg    VP
                   t     V
                         t
```
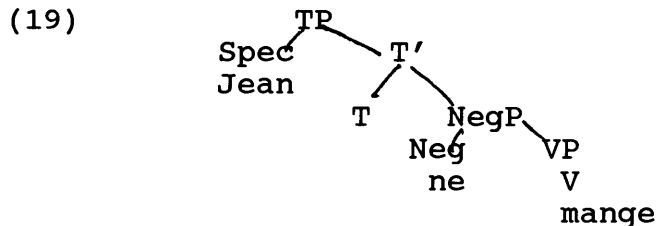
Notice that within our analysis it is not surprising that bound morphemes do not block movement. This makes sense especially if it turns out that

26 BENMAMOUN

movement to bound functional categories is a substitution type of movement. On the other hand, Pollock's and Chomsky's analysis of English and French rests on the assumption that a bound morpheme can be opaque though it can host the element it is supposed to block. For example, according to their theory, a bound morpheme such as Agr blocks verb movement in English at SS. According to our analysis, the negative head does not block verb movement because at the level where the verb needs to antecedent govern its trace the negative is incorporated unto the verb. In other words, the negative head cannot break a chain that it is part of.
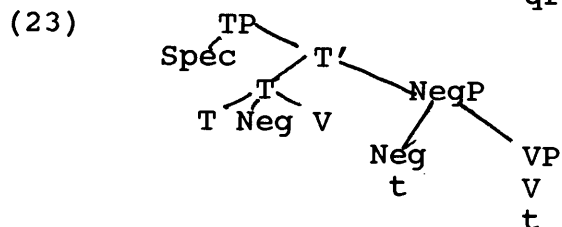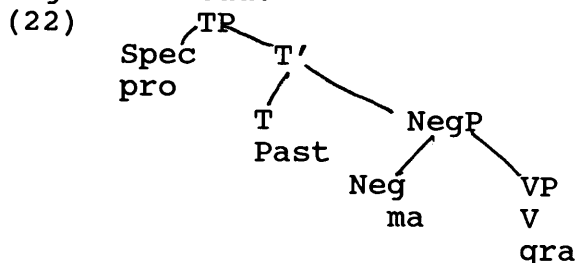
Our analysis of French is confirmed by Moroccan Arabic where the negative head <u>ma</u> is a bound morpheme and, as expected, does not block verb movement:

IV> Moroccan Arabic

The negative head <u>ma</u> in Moroccan Arabic (MA) exhibits the same behavior as its counterpart in French:[15]

(21) a. ma-qrit-š had le-ktaab
Neg-read.Past this the-book
'I did not read this book'

b. ma-kunt-š temma
neg-I was there
'I was not there'

A derivation for (21a) is given in (22) representing the DS and (23) representing the SS. As in French, the negative head ends up on the verb which indicates that verb movement has proceeded through the negative head.[16]

(22)
```
          TP
        /    \
     Spec     T'
     pro     /  \
            T    NegP
            Past  /  \
               Neg    VP
               ma     V
                      qra
```

(23)
```
          TP
        /    \
     Spec     T'
          /     \
        T       NegP
       / \      /  \
     T Neg V  Neg   VP
              t     V
                    t
```

NEGATION AND VERB MOVEMENT

To sum up, there seems to be a correlation between the morphological status of negation and the availability of verb raising to tense. In English and SA, the negative head is free and therefore verb movement has to cross it. This results in a representation that violates the minimality constraint in (5). On the other hand, in MA and French, the negative head is a bound morpheme that needs lexical support at SS. This implies that the verb moves via the negative head. The result is a representation that does not violate (5). The distribution of these languages along this morphological dimension is summarized in the table in (24):

(24)

	Negative	Morphology	Blocks mvt
Standard Arabic	laa	free	Yes
English	not	free	Yes
Moroccan Arabic	ma	bound	no
French	ne	bound	no

Notice that the minimality based analysis provided for verb movement in the context of negation in SA, English, French and MA preserves the generality and universality of the minimality condition and relegates language variation to low level aspects of the grammar such as the morphological component. This has provided us with an account for similarities between genetically unrelated languages such as French/MA and English/SA and differences between closely related languages such as MA and SA.

Footnotes
* I wish to thank Joseph Aoun, Audrey Li, Jean-Roger Vergnaud and Maria-Luisa Zubizarreta for helpful discussions. This paper is dedicated to the memory of my teacher Osvaldo Jaeggli.

1. See for example Lobeck (1986, p121) for a representation like (1a).

2. We assume that bound morphemes projected in the syntax should end up on a lexical host at S-structure as proposed in Lasnik (1981, p164):

(i) A morphologically realized affix must be a syntactic dependent of a morphologically realized category at Surface Structure.

3. Actually Chomsky (1988) proposes a more complex structure that contains an object agreement projection

BENMAMOUN

and a subject agreement projection. According to Chomsky it is object agreement that is inducing opacity in English. Notice that one prediction made by Pollock's and Chomsky's analysis is that, all things being equal, in pro-drop languages (subject pro-drop for Pollock and object pro-drop for Chomsky) only the raising option should be available. We leave this issue aside since we are assuming that lexical verbs do raise in the syntax in English and that bound morphemes in general, including Agr, cannot block movement.

4. Ouhalla (1989, 1990) proposes that the relative ordering of functional categories may be language specific. This evidently raises the question of whether the projection and representation of functional categories is reducible.

5. The negative head <u>laa</u> does not carry temporal inflection in the present tense in Arabic:

(i)   ya-ldrus
      Imp.3MS-study
      'He studies'

(ii) laa ya-drus
      Neg Imp.3MS-study
      'He does not study'

It is not actually clear that the present tense is projected and represented to the extent that it may interact with verb movement. The facts in (i) and (ii) correlate with other facts in the context of copular construction. In Arabic, the copula is not overtly realized in the present tense (we ignore irrelevant details):

(iii) Omar fii l-bayt
      Omar in the-house
      'Omar is at home'

Interestingly, in the past tense the copular verb <u>kaan</u> is inserted to support past or future tense:

(iv) Omar kaan-a fii l-bayt
      Omar be.Past.3MS in the-house
      Omar was in the house'

(v)   Omar sa-ya-kuun fii l-bayt
      Omar Fut-Imp3mS-be in the-house
      'Omar will be in the house'

NEGATION AND VERB MOVEMENT   29

All these facts suggest that the present tense projection is not morphologically active. We may, however, have to assume that this projection is present for interpretive and selectional purposes.

6. See Benmamoun (1989) for a detailed analysis of the representation and derivation of tensed negation in Standard Arabic.

7. The principle in (5) is a generalization of Aoun & Li's Minimal Binding Requirement:

(i) Minimal Binding Requirement (MBR)

     Variables must be bound by the first potential A'-binder.

Also the definitions of minimality and antecedent government are adapted from Rizzi (1990).

8. See Iatridou (1990) for discussion of further examples related to this issue.

9. See Ouhalla (1989, 1990) for arguments for a raising analysis in English.

10. See Iatridou for additional examples.

11. Another argument that has been used to argue for lowering in English comes from Q-float:

(i) The students all left.
(ii)* The student left all

According to Pollock (ii) can only be derived by verb movement. However, in Benmamoun (in progress) we show, based on the NP movement analysis for Q-float proposed in Sportiche (1988), that an alternative explanation of the facts in (i) and (ii) is warranted.

12. One powerful argument given by Pollock for correlating the nature of agreement with the availability of verb raising has to do with the coincidence between the emergence of do-support and the loss of agreement in the history of English. However, in Shanklin (1990) there is evidence that shows that in fact the correlation seems to be between the emergence of do-support and the loss of negative concord.

13. We assume with Kayne (1989), Ouhalla (1989, 1990) and

BENMAMOUN

Pollock (1989) that <u>ne</u> is the head of the negative projection in French.

14. See Ouhalla (1990) for a different analysis that also attributes the availability of raising through negation to its morphological status.

15. We consider <u>ma</u> to be the negative head MA. At this stage I leave the status of <u>s</u> open. However, even if turns out that <u>s</u> is the head of NegP, the analysis will remain intact since <u>s</u> too is a bound morpheme.

16. By associating verb movement with a morphological parameter rather than with a parameterization of the ability to induce minimality, we correctly predict that NegP (or rather Spec NegP) should be able to act as a potential antecedent for traces of Wh-specifiers even in MA:

(i) šHaal   qriti   d-le-ktuba
    How many you read of-the-books
    'How many books have you read'

(ii) *šHaal   ma-qriti-š   d-le-ktuba
     How many Neg-you read-neg of the books

<u>sHaal</u> cannot antecedent govern its trace across negation in (ii). Assuming relativized minimality (Rizzi 1990), the above facts follow if we assume, as we have throughout the paper, that the negative heads a full-fledged projection (see Ouhalla 1990 for discussion):

(iii)

```
              NegP
          Spec    Neg'
             Neg
```

The Spec of Neg prevents the Wh-phrase from antecedent governing its trace. Now, notice that while verb movement exploits the morphological weakness of the negative head and neutralizes its minimality effect, the Spec of NegP retains its ability to induce minimality effects with respects to Wh-Specifiers.

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