

ON THE PIVOT-TAKING PROPERTY OF ATTITUDINAL ADVERB *DAODI*

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This paper investigates the semantic/pragmatic properties of *daodi* based on Kuo's (1997) and Huang and Ochi's (2004) (H&O 2004) syntactic analyses. I show two sets of data that indicate that their pure syntactic analysis is not sufficient to account for the properties of *daodi*. I propose that if we examine closer the lexical properties of the attitudinal adverb *daodi*, we would find that its attitude needs to be ascribed to either the external speaker or the internal speaker when the derivation unfolds. This concept can be formalized as an unsaturated pivot argument in the semantics of *daodi* that is restricted by a pivot operator in the left periphery of Chinese phrase structure.

1. Introduction

This paper investigates the semantic/pragmatic properties of *daodi* based on Kuo's (1997) and Huang and Ochi's (2004) (H&O 2004) syntactic analyses. As already pointed out by these researchers, *daodi* strengthens the interrogative force of the direct/indirect/A-not-A question in which it occurs, as illustrated by (1-3)¹:

- (1) Ni daodi xihuang shei?
you daodi like who
'Who the hell do you like?'
- (2) Wo buzhidao Laowang daodi weishenme mei lai
I don't-know LW daodi why not come
'I don't know why the hell Laowang didn't show up.'
- (3) Ni daodi yao-bu-yao chengren zuocuo le zhe-jian shi?
you daodi would-no-would admit make-mistake ASP this-CL matter
'Would you or would you not admit that you made a mistake on this matter?'

Moreover, the occurrence of *daodi*, which is an adverb expressing speaker's attitude, is not a root phenomenon:

¹ As pointed out by a reviewer, *daodi* is better rendered as 'precisely/exactly' rather than 'the hell' in the examples listed in this paper. I agree with him/her, but the choice of translation does not affect the main observation and proposal of this paper. Therefore, in what follows I shall translate *daodi* as 'the hell'.

- (4) Ni renwei [Laowang daodi xuihuang shei] ne?
 you think Laowang daodi like who Q
 ‘Who the hell do you think Laowang like?’

This paper is organized as follows. Section two is a brief summary of previous studies on *daodi*. Section three presents two problems that are left unexplained in previous analyses. The first problem concerns the person feature of the matrix subject in sentences like (4). The second problem is about the compatibility of *daodi* with *wh*-questions. Then in section four, I provide my analysis for these two problems. Finally, in section five, I challenge an assumption made by both H&O and Kuo, that is, *daodi* undergoes covert movement for feature-checking, and therefore observes island constraints. I will not go into detailed discussion on the covert movement of *daodi*'s due to limited space. I refer the reader to Chou (2006) for a different analysis of *daodi* based on the assumption that *daodi* does not move. Section six is the conclusion of this paper.

2. Literature Review

2.1 Kuo (1997)

Kuo claims that *daodi* is an emphaser of the interrogative force of *wh*-phrases. It has a weak uninterpretable *wh*-feature which must be checked off by a *wh*-Q-operator. Therefore, *daodi* would undergo covert movement for feature checking. The following sentences show that *daodi* must occur under the scope of a *wh*-Q-operator, and that it is sensitive to island constraints.

- (5) a. *Laozhang daodi xiangzhidao [Laowang mai-le shenme]
 Laozhang daodi wonder Laowang buy-ASP what
 ‘LZ wonders what the hell LW bought.’
 b. Laozhang xiangzhidao [Laowang daodi mai-le shenme]
 Laozhang wonder Laowang daodi buy-ASP what
 ‘LZ wonders what the hell LW bought.’

-- Complex NP Constraint

- (6) a. [Mama wei shei dun de niurou] zui haochi?
 Mother for whom stew Mod beef most delicious
 ‘Who is the x such that the beef Mother stews for x is most delicious?’
 b. Daodi [Mama wei shei dun de niurou] zui haochi?
 Daodi Mother for whom stew Mod beef most delicious
 ‘Who the hell is the x such that the beef Mother stews for x is most delicious?’
 c. *[Mama daodi wei shei dun de niurou] zui haochi?
 Mother daodi for whom stew Mod beef most delicious
 ‘Who the hell is the x such that the beef Mother stews for x is most delicious?’

-- Adjunct Island

- (7) a. Zhangsan [zai jiandao shei zhihou] jiu shengqi le?
 Zhangsan at meet who after then angry ASP

- ‘Who is the x such that Zhangsan got angry after meeting x?’
- b. Daodi Zhangsan [zai jiandao shei zhihou] jiu shengqi le?
 Daodi Zhangsan at meet who after then angry ASP
 ‘Who the hell is the x such that Zhangsan got angry after meeting x?’
- c. *Zhangsan [zai daodi jiandao shei zhihou] jiu shengqi le?
 Zhangsan at daodi meet who after then angry ASP
 ‘Who is the x such that Zhangsan got angry after meeting x?’

2.2 Huang and Ochi (2004)

H&O further elaborate Kuo’s (1997) observation on the behavior of *daodi*. Here is a summary of H&O’s analysis:

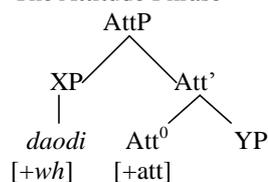
- (8) a. *Daodi* must occur in construction with a *wh*-phrase (including an *A-not-A* phrase in an *A-not-A* question) in its c-domain.
 b. *Daodi* is an adverb occurring in a preverbal or pre-IP adjunct position, while the *wh*-associate occurs in an argument position or non-argument position.
 c. *Daodi* and its *wh*-associate occur in situ.
 d. *Daodi* questions imply some attitude of impatience or annoyance on the part of the speaker.
 e. *Daodi* must occur in the scope of an interrogative CP.

Based on these properties of *daodi*, H&O (2004, p.4) claim that there are three elements entering into the formation of a Chinese *daodi* question: a Spec of CP with [+Q], the adverbial *daodi*, and a *wh*-associate, which form a chain of successive c-command. Their main proposals are represented in the following two configurations:

- (9) The pattern: two kinds of dependency

$$[_{CP} Q [IP \dots [ISLAND \dots daodi \dots [ISLAND \dots wh\text{-associate} (must\ be\ an\ argument) \dots]]]]$$

- (10) The Attitude Phrase



The gist of (9) is to capture the island effects associated with *daodi* questions, with a discontinuous sequence of three elements that form two kinds of dependency. A *daodi* question can co-occur with a *wh*-associate embedded in a syntactic island only if (a) *daodi* is itself outside of the island, and (b) the *wh*-associate is an argument, but not if *daodi* is itself inside the island or the *wh*-associate is an adjunct.

Next, in the wake of Cinque (1999), H&O propose the existence of an (interrogative) Attitude Phrase in the left periphery of IP which gives rise to the

special pragmatic flavor of *daodi* questions as noted in (8). The existence of this projection signals that you have “a question with an attitude.”

3. Two Problems

Kuo’s and H&O’s analyses focus on the syntactic movement of *daodi*; however, in this section, I would like to show two problems that are unexplained under a pure syntactic analysis of *daodi*. These problems indicate that, beside the syntactic aspect of *daodi*, we must also consider its semantic/pragmatic properties.

3.1 On the Person Feature of the Matrix Subject

Actually, the embedded occurrence of *daodi* in a root question as in (12a) is highly restricted. The matrix subject can only be of second person. Replacing the matrix second person subject in (12a) with a third person subject makes the sentence ungrammatical, as shown in (13/14/15a):

- (12) a. Ni renwei [Laowang daodi xihuang shei]?
 You think Laowang daodi like who
 ‘Who the hell do you think that Laowang likes?’
 b. Ni daodi renwei [Laowang xihuang shei]?
 You daodi think Laowang like who
 ‘Who the hell do you think that Laowang likes?’
- (13) a. *Lisi renwui [Laowang daodi xihuang shei]?
 Lisi think Laowang daodi like who
 ‘Who the hell does Lisi think that Laowang likes?’
 b. Lisi daodi renwui [Laowang xihuang shei]?
 Lisi daodi think Laowang like who
 ‘Who the hell does Lisi think that Laowang likes?’
- (14) a. *Lisi renwui [Ni daodi xihuang shei]?
 Lisi think you daodi like who
 ‘Who the hell does Lisi think that you like?’
 b. Lisi daodi renwui [Ni xihuang shei]?
 Lisi daodi think you like who
 ‘Who the hell does Lisi think that you like?’
- (15) a. *Lisi renwui [wo daodi xihuang shei]?
 Lisi think I daodi like who
 ‘Who the hell does Lisi think that I like?’
 b. Lisi daodi renwui [wo xihuang shei]?
 Lisi daodi think I like who
 ‘Who the hell does Lisi think that I like?’

The general observation can be described as follows:

- (16) a. 2nd (*daodi*)... [3rd (*daodi*)...]?
 b. 3rd *daodi*... [1st/2nd/3rd...]?
 c. *3rd ... [1st/2nd/3rd *daodi*...]?

Under Kuo's and H&O's accounts, the person asymmetry of the matrix subject observed above cannot be explained. More specifically, the pure syntactic account in terms of covert movement of *daodi* fails to account for the whole story.

3.2 Compatibility with *wh*-phrases

As noted both by Kuo and H&O, *daodi* must c-command its *wh*-associate and occur under the scope of a *wh*-Q-operator. However, not all kinds of *wh*-questions are compatible with *daodi*. According to Tsai (1999, 2000), pre-modal *zenme* has a causal reading similar to *how come* in English:

- (9) a. Ta zenme mei lai?
He how-come not come
'How come he didn't show up?'
b. Ta zenme ku le?
He how-come cry ASP
'How come he is crying?'

However, *daodi* is not compatible with *zenme* 'how come':

- (10) a. *Ta daodi zenme mei lai?
He daodi how-come not come
'*How come the hell he didn't show up?'
b. *Ta daodi zenme ku le?
He daodi how-come cry ASP
'How come the hell he is crying?'

In this connection, consider also the compatibility between reason *weishenme* and *daodi*:

- (11) a. Ta daodi weishenme mei lai?
He daodi why not come
'*Why the hell didn't he show up?'
b. Ta daodi weishenme ku le?
He daodi why cry ASP
'Why the hell is he crying?'

Reason *weishenme* and causal *zenme* are both *wh*-adverbials which pattern together with respect to movement phenomena. However, the contrast between (10) and (11) indicates that a pure syntactic account is not sufficient to account for the validity and invalidity of the occurrences of *daodi*.

4. The Analysis

4.1 The Attitude Needs to be Anchored

The attitude carried by *daodi* must be ascribed to either the external speaker (the one who utters the sentence or the direct discourse participants, including the addresser and the addressee) or the internal speaker (the third person matrix

subject NP of certain verbs), as exemplified below:

- (12) a. Ni daodi xihuang shei?
you daodi like who
'Who the hell do you like?'
b. Ni xiangzhidao wo daodi mai-le shenme ma?
you wonder I daodi buy-ASP what Q
'Do you wonder what the hell I bought?'
c. Zhangsan xiangzhidao wo daodi mai-le shenme ma?
Zhangsan wonder I daodi buy-ASP what Q
'Does Zhangsan wonder what the hell I bought?'

In (12a), the attitude carried by *daodi* is ascribed (or 'anchored' in Huang and Liu's (2001) term) to the external speaker. As for (12b/c), because *daodi* only obtains the embedded scope, we need only consider the person feature of the matrix subject to determine which speaker the attitude of *daodi* is attributed to. The matrix subject of (12b) is a second person NP *ni*, which is one of the direct discourse participants, so the attitude of *daodi* in (12b) is attributed to the addressee *ni*, the external speaker.² In (12c), the matrix subject is the third person NP *Zhangsan* (which is neither the addresser nor the addressee) is the internal speaker of this sentence, so the attitude carried by *daodi* is anchored to the internal speaker.

Note that the attitude holder of *daodi* can only be determined when the syntactic derivation unfolds; it is not an inherent lexical feature of *daodi*. So we should have some syntactic mechanism responsible for this value-setting. Now I turn to this question.

4.2 The Pivot Operator and the Unsaturated Pivot Value of *Daodi*

To formalize the mechanism, I follow Rizzi's (1997) work on the left periphery of phrase structure and Huang and Liu's (2001) work on logophoricity. I adopt the assumption that there could be a Pivot Phrase in the left periphery of Chinese phrase structure. Moreover, I propose that there is a pivot-operator which serves to type the "pivot" of a certain proposition. The pivot of a certain proposition is anchored either to the external speaker (i.e. the direct discourse participants) or to the internal speaker (i.e. the third person matrix subject NP of certain verbs).

As mentioned above, the attitude of *daodi* needs to be anchored to either the external speaker or the internal speaker when the syntactic derivation unfolds. We may restate this property of *daodi* as its **lack of a pivot-value**. The pivot-operator can bind *daodi* and set its pivot-value. The value is binary (i.e. external or internal). *Daodi* needs a pivot-value because we need to know which speaker the attitude carried by *daodi* is ascribed to. For example, in (13a/c), *daodi* gets an external pivot-value, and in (13b), it gets an internal pivot-value.

² Though *ni* in (12b) is the matrix subject, which typically manifests an internal speaker, it represents the addressee, whose pivot is attributed to the external speaker. Therefore, in (12b) the attitude of *daodi* is attributed to the external speaker.

- (13) a. **P-op**_{external} Ni daodi_{external} xihuang chi shenme?
 you daodi like eat what
 ‘What the hell do you like to eat?’
- b. Zhangsan xiangzhidao [**P-op**_{internal} Lisi daodi_{internal} xihuang shei]
 Zhangsan wonder Lisi daodi like who
 ‘Zhangsan wonders who the hell Lisi likes?’
- c. Ni renwei [**P-op**_{external} Lisi daodi_{external} mai-le shenme]ne?
 you think Lisi daodi buy-ASP what Q
 ‘What the hell do you think that Lisi bought?’

The pivot-operator of the matrix clause encodes the external speaker’s pivot, while the value of the embedded pivot-operator depends on the person feature of the matrix subject. That is, if the matrix subject is a second person pronoun, *ni* ‘you’, which represents one of the direct discourse participants (the addressee), the embedded pivot-operator encodes the pivot of the external speaker. On the other hand, if the matrix subject is a third person NP, which does not represent any of the direct discourse participants (neither the addresser nor the addressee), the embedded pivot-operator encodes the pivot of the internal speaker.

Armed with these assumptions, we are now ready to deal with the person asymmetry of the matrix subject mentioned in 3.1 (repeated here):

- (14) a.*Lisi renwei [Laowang daodi xihuang shei]?
 Lisi think Laowang daodi like who
 ‘Who the hell does Lisi think that Laowang likes?’
- b.*Lisi renwei [Ni daodi xihuang shei]?
 Lisi think you daodi like who
 ‘Who the hell does Lisi think that you like?’
- c.*Lisi renwei [wo daodi xihuang shei]?
 Lisi think I daodi like who
 ‘Who the hell does Lisi think that I like?’
- (15) a. 2nd (*daodi*)... [3rd (*daodi*)...]?
 b. 3rd *daodi*... [1st/2nd/3rd ...]?
 c. *3rd ... [1st/2nd/3rd *daodi*...]?

Let’s spell out the pivot operator mechanism in these ungrammatical sentences:

- (16) a. * Lisi renwei [**Op**_{internal} Laowang daodi_{internal} xihuang shei]?
 b. * Lisi renwei [**Op**_{internal} Ni daodi_{internal} xihuang shei]?
 c. * Lisi renwei [**Op**_{internal} wo daodi_{internal} xihuang shei]?

Because the matrix subject is a third person NP, which represents neither the addresser nor the addressee, the embedded pivot operator encodes the value “internal”. Consequently, this embedded pivot operator binds *daodi* and sets its pivot value as internal, which means that the attitude carried by *daodi* in this question is attributed to the internal speaker. But this yields wrong readings. All these sentences are meant to be root questions, and the natural (and only)

interpretation for the attitudinal adverb *daodi* in these sentences is that its attitude is anchored to the external speaker, i.e., the addresser who utters such questions. But the pivot operator mechanism sets the pivot value of *daodi* as internal. Now we see that the proposed pivot-taking property of *daodi* not only captures the semantics of *daodi* but also explains empirical phenomena that is unaccounted for in previous studies.

4.3 What is the Difference between *Weishenme* and Causal *Zenme*?

To deal with the incompatibility of *daodi* with the causal *zenme*, we need to first address differences between the causal *zenme* and the reason *weishenme* in Chinese. Tsai's (2004) work, inspired by Collins' (1991), examines the distinction between the causal *zenme* and the reason *weishenme*. Irrelevant details aside, I go directly to the difference which is crucial to my analysis. Consider the following examples adapted from Tsai (2004, p5):

- (19) a. Yi jia yi weishenme denyu er?
 one plus one why equal two
 'Why does one and one equal to two?'
 Presupposition: One and one is equal to two.
 Speech Act: The speaker wants to know the reason one pluses one equal two.
- b. # Yi jia yi zenme hui denyu er?
 one plus one how-come would equal two
 'How come one and one equals to two?'
 Presupposition: One and one is not equal to two, and something caused one and one equal to two.
 ☞ **# One and one shouldn't be equal to two.**
 Speech Act: The speaker wants to know what caused one and one equal two.
- c. Yi jia yi zenme hui denyu san?
 one plus one how-come would equal three
 'How come one and one equals to three?'
 Presupposition: One and one is equal to two, and something caused one and one equal three.
 ☞ **One and one shouldn't be equal to three.**
 Speech Act: The speaker wants to know what caused one and one equal to three.

As shown in the highlighted boldface, the subtle yet crucial distinction between the causal *zenme* and the reason *weishenme* lies in the extra sense of **counter-expectation** with the causal *zenme*. According to Tsai (who refers to personal communication with Anikó Lipták and Lisa Cheng), the presupposition of the causal *zenme* gives rise to some sort of counter-expectation, i.e., the state of affairs expressed in the question does not match the real world situation or the speaker's expectation.

The crucial point here is the semantic/pragmatic oddity of (19b). (19b) is clearly syntactically well-formed; however, the oddity stems from the clash between the sense of counter-expectation induced by causal *zenme*, i.e., one and one shouldn't be equal to two, and the real-world mathematical facts, i.e., one and one is equal to two. The oddity of (19b), when compared with (19a), shows the contrast between the causal *zenme* and the reason *weishenme* in the presuppositions they induce.

We may regard the speaker's sense of counter-expectation as a kind of speaker's attitude. Just like the attitude carried by *daodi*, the attitude carried by the causal *zenme* needs to be anchored to either the external speaker or the internal speaker. As the following sentences show, the attitude carried by the causal *zenme* can be ascribed to either the external speaker, as in (20a), or the internal speaker, as in (20b). Therefore, the causal *zenme* also has an undetermined pivot-value which is set by the pivot-operator when the derivation unfolds.

- (20) a. Laowang zenme mei lai?
 Laowang how-come not come
 'How come Laowang did not show up?'
 b. Zhangsan xiangzhidao Laowang zenme mei lai
 Zhangsan wonder Laowang how-come not come
 'Zhangsan wonders how come Laowang did not show up?'

With these observations, we may now proceed to the incompatibility problem.

4.4 The Denotation of *Daodi* and Causal *Zenme*

Given the semantic properties mentioned above, I propose that the denotations of *daodi* and the causal *zenme* questions as follows.

- (21) $[[daodi]] = \lambda Q \lambda x \exists y. y$ is an attitude that is ascribed to $x \wedge x$ holds y toward Q
 (22) $[[LW zenme mei lai]] = \lambda z \exists v. v$ is an attitude that is ascribed to $z \wedge z$ holds v toward $(\lambda p \exists w. w$ a reason $\wedge p = \sim$ show-up(LW) because of $w)$
 (23) $[[LW daodi xihuang shei]] = [[daodi]] ([[LW xihuang shei]])$
 $= \lambda x \exists y. y$ is an attitude that is ascribed to $x \wedge x$ holds y toward $(\lambda p \exists w. w$ a person \wedge like $(w)(LW))$

(21) means that an attitudinal adverb like *daodi* takes two arguments. Q represents the interrogative it occurs in, and x represents the 'pivot argument' to which the attitude carried by *daodi* is ascribed.

As for the denotation of the causal *zenme* questions in (22), I follow the assumption that the denotation of a question is the set of all possible true answers to it (the *wh*-phrase being represented by w) to it. Moreover, z represents the pivot argument carried by the causal *zenme*, and v stands for the attitude carried by the causal *zenme*.

The pivot argument is saturated by the pivot-operator (which is symbolized as

pro) in the specifier of the Pivot Phrase. With the rule of compositionality, we obtain the correct ascription of the attitude carried by the *daodi* or *zenme* question to either the external or the internal speaker, as shown below:

(24) [[LW *zenme mei lai*]] (pro_{ex}) = $\exists v$. v is an attitude that is ascribed to $\text{pro}_{\text{ex}} \wedge \text{pro}_{\text{ex}}$ holds v toward $(\lambda p \exists w$. w a reason $\wedge p = \sim\text{show-up(LW)}$ because of $w)$

(25) [[LW *daodi xihuang shei*]] (pro_{ex}) = $\exists y$. y is an attitude that is ascribed to $\text{pro}_{\text{ex}} \wedge \text{pro}_{\text{ex}}$ holds y toward $(\lambda p \exists w$. w a person $\wedge \text{like}(w)(\text{LW})$)

Now we try to combine *daodi* with a causal *zenme* question:

(26) [[*daodi*]] ([[LW *zenme mai lai*]])(pro_{ex})
 = $\lambda Q \lambda x \exists y$ [y is an attitude that is ascribed to $x \wedge x$ holds y toward Q]
 $(\lambda z \exists v$. v is an attitude that is ascribed to $z \wedge z$ holds v toward $(\lambda p \exists w$. w a reason $\wedge p = \sim\text{show-up(LW)}$ because of $w))$ (pro_{ex})
 = $\lambda x \exists y$ [y is an attitude that is ascribed to $x \wedge x$ holds y toward $(\lambda z \exists v$. v is an attitude that is ascribed to $z \wedge z$ holds v toward $(\lambda p \exists w$. w a reason $\wedge p = \sim\text{show-up(LW)}$ because of $w))$ (pro_{ex})]
 = $\exists y$ [y is an attitude that is ascribed to $\text{pro}_{\text{ex}} \wedge \text{pro}_{\text{ex}}$ holds y toward $(\lambda z \exists v$. v is an attitude that is ascribed to $z \wedge z$ holds v toward $(\lambda p \exists w$. w a reason $\wedge p = \sim\text{show-up(LW)}$ because of $w))$ (pro_{ex})]

We see that at the end of the composition, the pivot argument of the causal *zenme* question is left unsaturated. The incompatibility follows from the unrestricted/unsaturated pivot argument of the causal *zenme*.

5. The Residual Problem – to move or not to move?

The main concern in the previous studies of *daodi* is the island sensitivity of *daodi*, but in this section, I would like to challenge the assumption that *daodi* undergoes covert movement. If *daodi* does move covertly, it should be sensitive to all types of islands. However, *daodi* can occur in sentential subject, which is also an island:

- (27) a. [Women *daodi weile shenme nian-shu*] *cai you-yiyi?*
 we *daodi* for what study then meaningful
 ‘What the hell is the purpose x such that it is meaningful for us to study for x ?’
 b. [Zhangsan *daodi gai yong shenme-fangshi nian-shu*] *dui dajia zuihao?*
 Zhangsan *daodi* should use what-way study for everyone best
 ‘What the hell is the way x such that it is the best for everyone that ZS

studies in x way?'

Due to the limited space, I refer the reader to Chou (2006) for a plausible analysis based on the assumption that *daodi* actually does not move.

6. Conclusion

Recapitulating the result reached in this paper, attitudinal adverbs like *daodi* and the causal *zenme* contain an unsaturated pivot-argument that is fulfilled by the pivot-operator. This result supports Huang's (2005) assumption that, in modern Chinese, *almost all lexical categories have their simplest (pure, "root") meanings only*. For example, Chinese verbs are mass verbs (atelic); hence accomplishments must be expressed with a light verb or an Activity-State compound (cf. Lin (2005)). Chinese nouns are mass nouns; hence they need a classifier when one wants to count with them (cf. Chierchia (1998)). Chinese simple gradable adjectives are unrestricted adjectives; hence they need a degree adverb, a measure phrase, reduplication morphology, (contrastive) focus, or the sentential final particle *le* when one wants to restrict them (cf. Liu (2005)). Likewise, *the Chinese attitudinal adverbs have their simplest (pure, "root") meaning only*. Attitudinal adverbs like *daodi* and the causal *zenme* are unrestricted with respect to the pivot to which the attitudes carried are ascribed. An attitudinal adverb, in itself, only conveys the attitude specified lexically, and the attitude-holder is restricted or saturated by the pivot-operator when the derivation unfolds.

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