Sluiced phrases don't derive from clefts: evidence from Polish

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Abstract

Constraints on preposition omission in the elliptical construction sluicing are assumed to correlate with the availability of preposition stranding in non-elliptical interrogative clauses (Merchant 2001). It has been argued that for instances of acceptable preposition omission found in non-preposition-stranding languages, such as Spanish and Polish, underlying clefts with preposition stranding may provide an alternative derivational source (Vicente 2008, Szczegielniak 2008, Rodrigues et al. 2009). I show that such clefts are not available in Polish, and that, even if they were, they would still fail to account for the full range of contexts in which preposition omission is fine under sluicing.

I report the results of two controlled acceptability studies exploring the relationship between clefts and prepositionless sluiced phrases. In the first study, judgments for clefts with preposition stranding are significantly degraded with respect to those for clefts with pied-piping. In the second, two different types of complex correlate-remnant pairs received high acceptability scores despite the assumption that only remnant which-phrases produce that effect. Taken together, these data speak against including Polish among languages that lend support to Merchant (2001).

Introduction

Structural analyses of elliptical constructions, and in particular the view that unpronounced material exists in the syntax of these constructions (Merchant 2001, Johnson 2004), have been motivated by the presence of connectivity effects. These effects are due to similarities between the syntactic behavior of ellipsis remnants and that of corresponding non-elliptical clauses. Thus, if connectivity effects arise, they provide evidence for full structure underlying ellipsis remnants. Merchant (2001) argues that the pattern of preposition omission in the elliptical construction sluicing, shown in (1), correlates with the possibility of preposition stranding under wh-movement in non-elliptical clauses.

(1) I knew the Body Shop was bought out by someone, but I didn't know (by) who.

The argument is that a language that allows preposition stranding under wh-movement also allows preposition omission under sluicing. In contrast, a language without preposition stranding under wh-movement disallows preposition omission under sluicing. These patterns are illustrated in (2) and (3) from English and Polish, respectively.

(2) a. Who was the Body Shop bought out by?

b. I knew the Body Shop was bought out by someone, but I didn't know who.

(3) a. *Kogo został wykupiony Body Shop przez?
who was bought out Body Shop by
b. Wiedziałam, ze Body Shop został wykupiony przez kogoś, ale nie
I.knew that Body Shop was bought out by someone but not
wiedziałam *(przez) kogo.[1]
I.knew by who

The generalization that only preposition-stranding languages tolerate preposition omission under sluicing, if correct, motivates the claim that a sluiced wh-phrase has syntactic structure equivalent to that of an interrogative clause. Despite some counterexamples to this generalization offered in the literature (Vicente 2006, 2008, Szczegielniak 2005, 2008, Stjepanović 2008, Fortin 2007, Rodrigues et al. 2009), proponents of the transformational analysis of sluicing propose to explain recalcitrant data on a language-by-language basis. This squib draws into question one such proposal, due to Szczegielniak (2008), which argues that some sluicing remnants in Polish tolerate preposition omission just in case underlying structures are available that allow preposition stranding.

Subtle properties of preposition omission under sluicing have been explored in a number of non-preposition-stranding languages, including Spanish (Vicente 2006, 2008 Rodriguez et al. 2009), Brazilian Portuguese (Lasnik 2007), Bahasa Indonesia (Fortin 2007), Serbo-Croatian (Stjepanović 2008) and Polish (Szczegielniak 2005, 2008, Nykiel and Sag forthcoming). According to the results, several examples are attested cross-linguistically that seemingly create an exception to Merchant's generalization. Whether or not they truly are an exception, however, depends on what syntactic structure could or should be assigned to these examples, given a structural analysis. Vicente (2006, 2008), Rodrigues et al. (2009) and Szczegielniak (2005, 2008) all suggest that their instances of preposition omission derive from underlying cleft structures that allow preposition stranding, and hence that Merchant's generalization and a structural analysis of sluicing remain intact. As an illustration, consider Spanish (4) and Polish (5), where the (a)

[1] For the moment, I marked this sentence as incorrect, following Merchant's argument, but psycholinguistic evidence suggests that such sentences are not categorically unacceptable in Polish (see Nykiel forthcoming and Sag and Nykiel forthcoming)

sentences contain sluiced wh-phrases without prepositions and the (b) sentences are the proposed underlying clefts.

(4) a. Juan ha hablado con una chica, pero no sé cuál
Juan has talked to a girl but not know which
'Juan has talked to a girl but I don't know which.'

b. Juan ha hablado con una chica, pero no sé cuál es la chica con la que ha hablado Juan
Juan has talked to a girl but not know which is the girl with the that has talked Juan
'Juan has talked to a girl, but I don't know which girl it is that he has talked to.'(Rodrigues et al. 2009, ex. 4b)

(5) a. Anna odpowiedziała na jakieś pytanie, ale nie pamiętam które.
Anna answered PREP some question.A but not I.remember which.A
'Anna answered some question but I don't remember which.'

b. Które to na pytanie Anna odpowiedziała?
which it PREP question Anna answered
'Which question was it that Anna answered?'

By pointing to the existence of the underlying clefts, it is possible to offer an explanation for why the wh-phrases may appear without prepositions: since the clefts can separate the prepositional heads from their dependents, so can the sluiced phrases. Further, note that in both languages the sluiced wh-phrases are which-NP phrases[2], and only such phrases are believed to tolerate preposition omission. These data strengthen Merchant's generalization, rather than weaken it, to the extent that the correlation between preposition omission under sluicing and the availability of preposition stranding receives additional support.

In the case of Spanish, further evidence points toward the cleft analysis, for example modification by *más* 'else', which is disallowed by clefts and sluicing of the kind shown in (4a) (Vicente 2008 and Rodrigues et al. 2009). In the case of Polish,

[2] Following Pesetsky (1987), Szczegielniak calls these phrases D-linked. However, I demonstrate further in this paper that applying this label leads to an inaccurate description of the sluicing data. (See also Hofmeister et al. (submitted) and Hofmeister and Sag (2010) for an extensive critique of D-linking in the context of island constraints).

however, it is not clear that clefts such as those given in (5b) are acceptable, and Szczegielniak (2008:406, fn. 4) himself admits that judgments about such sentences vary. Moreover, Szczegielniak's argument is that preposition omission may only occur with sluiced which-phrases, which denote the meaning of 'one of a set of X'. There is no mention of an alternative that makes use of what-phrases. Compare (5a) with the sluiced phrase in (6) below.

(6) Anna odpowiedziała na jakieś pytanie, ale nie pamiętam
Anna answered PREP some question.A but not I.remember
jakie.
what (question).A
'Anna answered some question but I don't remember what (question).'

Note first that (6) and (5a) are syntactically parallel down to the individual phrases; the difference is purely semantic. In (5a), the sluiced phrase refers back to one of the questions Anna answered, and in (6) it points to a question Anna answered with certain (not yet known) characteristics. I assume in the rest of this paper that this semantic difference has no impact on the possibility of preposition omission, as indeed it does not appear to.[3] On Szczegielniak's account, however, the which- and what-phrases should be due to different underlying structures, or they can be analyzed as variants of one

[3] To see that both constructions are attested, consider (i-iv).

(i) Zrezygnowałabym z któregoś ale nie wiem którego...
I.would.give up PREP one (of them) but not I.know which
'I would give up one of them, but I don't know which.'
(http://vitalia.pl/index.php/mid/4/fid/231/diety/dieta/cat/49/engine/tags/search/Aerobik)

(ii) Komin należy do jednego z operatorów komórkowych, ale nie wiem którego konkretnie
chimney belongs to one of providers cell network but not I.know which exactly
'The chimney belongs to one of the cell phone network providers, but I don't know which one exactly.'
(http://www.roztocze.net/newsroom.php/28321_Galeria_Twierdza_-_początek_robót_-_zdjęcia.html)

(iii) W środku wygląda mi na Royala, ale nie wiem jakiego.
on inside it.looks me like Royal but not I.know what (Royal)
'On the inside it looks like a Royal to me, but I don't know what (Royal).'
(http://www.elektroda.pl/rtvforum/topic292969.html)

(iv) kojarzy mi się ta pioseka z jakimś filmem, ale nie wiem jakim.
reminds me REFL this song of a movie but not I.know what (movie)
'This song reminds me of a movie, but I don't know what (movie).'
(http://alejandra.wrzuta.pl/audio/1Vo32Fg07Wl/all_4_one_-_i_swear)

Working under the assumption that constructions of type (5a) and type (6) are equally acceptable but type (6) is new to the sluicing literature, I have chosen to use constructions of type (6) as relevant experimental items.

underlying structure. Intuitively, it makes sense to posit one structure following the pattern shown in (5b) and allow it to vary lexically depending on the semantics of the sluiced phrase. Given this solution, sluiced what-phrases cast doubt on the explanatory potential of D-linking, whose formulation includes only which-phrases. I will have more to say about D-linking and problems that it causes rather than solve in section 2. I will also assume that if any cleft structures underlie (5a) and (6), they are syntactically identical.

Let us now point out that Szczegielniak's analysis, if accurate, makes the following predictions:

(7) The acceptability of clefts with preposition stranding is comparable, or ideally, identical to that of sluiced which/what-phrases without prepositions, since the two constructions share the same structure.

(8) If the acceptability of clefts with preposition stranding significantly differs from the acceptability of clefts with preposition pied-piping, then the acceptability of sluiced which/what-phrases without prepositions should also contrast with the acceptability of sluiced which/what-phrases with prepositions.

In the next section I provide evidence that both of these predictions are false. In section 2, I explore whether the contexts in which preposition omission under sluicing is found acceptable line up with the cleft analysis. Both sections draw on acceptability judgment data. Next, I consider the implications of the findings in section 3. Section 4 concludes.

1 Clefts with preposition stranding vs. clefts with preposition pied-piping

In this section I investigate how clefts such as those shown in (5b) fare when contrasted with clefts without preposition stranding in a controlled acceptability study. The results are then used to evaluate the predictions in (7-8). I analyzed these and all other data using repeated measures ANOVA.

Experiment 1: Clefts with and without preposition stranding

Twelve experimental items were constructed consisting of one interrogative cleft clause with preposition stranding (9a) and another with preposition pied-piping (9b).

(9) a. Które to na pytanie Anna odpowiedziała?
which it PREP question.A Anna answered
b. Na które to pytanie Anna odpowiedziała?
PREP which it question.A Anna answered
'Which question was it that Anna answered?'

Twenty participants, monolingual speakers of Polish, rated the items on a three-point scale, from 1 (very odd, awkward or difficult to understand) to 2 (in between) to 3 (fully normal and understandable). Figure 1 shows the results of the experiment, which were normalized for speaker variability. Interrogative clauses without stranding appear as *Q*; interrogative clauses with stranding appear as *Qstrand*.

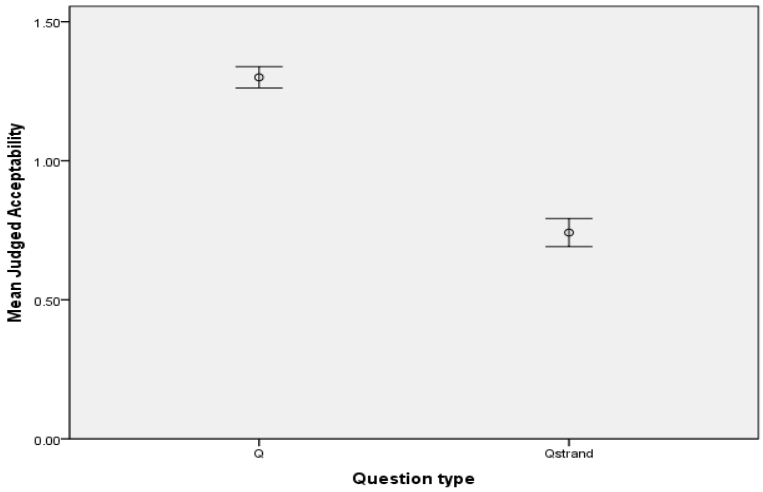

Figure 1: Acceptability ratings by items (scale 1-3), normalized for speaker variability

Results

Contrary to Szczegielniak's argument, preposition stranding produced significantly lower judgments of acceptability compared to preposition pied-piping ($F_1 = 376.939$, $p < .000$, by items; $F_2 = 161.552$, $p < .000$, by subjects).[4] If cleft structures with preposition stranding are part of the machinery that can account for the grammar of sluicing, their low acceptability scores reduce the appeal of this machinery. The results of this

[4] The results from this experiment were analyzed prior to normalizing for speaker variability as well, and showed similarly degraded judgments for the interrogatives with preposition stranding ($F_1 = 559.059$, $p < .000$ by items, $F_2 = 85.482$, $p < .000$ by subjects). Interestingly, a Google search did not produce any interrogatives with preposition stranding other than Szczegielniak's own examples.

experiment cannot be fully appreciated, however, until we locate them in the context of preposition omission under sluicing, to which I now turn.

In a controlled study of preposition omission under Polish sluicing, Nykiel and Sag (forthcoming) found a significant difference between sluiced which-NP phrases and simple wh-phrases. A direct comparison of preposition omission and non-omission in two conditions reflecting the contrast between complex wh-phrases (which-NP phrases) and simple wh-phrases revealed that preposition omission is significantly degraded only in the simple condition. Thus, the sentences in the pair (10c) and (10d) were significantly different, but not the sentences in the pair (10a) and (10b).

(10) a. Anna odpowiedziała na jakieś pytanie, ale nie pamiętam jakie
Anna answered PREP some question.A but not I.remember what
(pytanie).
(question).A
'Anna answered some question but I don't remember what question.'

b. Anna odpowiedziała na jakieś pytanie, ale nie pamiętam na jakie
Anna answered PREP some question.A but not I.remember PREP what
(pytanie).
(question).A
'Anna answered some question but I don't remember what question.'

c. Anna odpowiedziała na coś, ale nie pamiętam co.
Anna answered PREP something.A but not I.remember what.A
'Anna answered something, but I don't remember what.'

d. Anna odpowiedziała na coś, ale nie pamiętam na co.
Anna answered PREP something.A but not I.remember PREP what.A
'Anna answered something, but I don't remember what.'

If the availability of a cleft structure is relevant to preposition omission, the acceptability of sentences like (10a) should align with the acceptability of sentences like (9a). That is, we would expect a significant difference between preposition omission and non-omission parallel to the significant difference found between preposition stranding and pied-piping in interrogatives. What we learn instead is that (10a) and (9a) differ in acceptability. Coupled with the results of experiment 1, this finding speaks against the predictions in

(7) and (8).

2 Complex wh-phrases

In this section, I propose that the complexity of a sluiced wh-phrase belongs to what Wasow et al. (To appear) call 'soft' (i.e. non-categorical) constraints, which cannot be reconciled with a cleft analysis. Recall that on Szczegielniak's analysis, sluiced phrases permitting preposition omission have the property that they are complex phrases, or to use Pesetsky's (1987) terminology, D-linked phrases. D-linked phrases are taken to be those that refer to 'a set [of entities] both speaker and hearer have in mind' (Pesetsky 1987:108). For the most part, this set of entities will have been mentioned in prior discourse, and hence the referent of a wh-phrase will be familiar. One problem with applying this notion of D-linking to sluicing is that virtually all sluiced wh-phrases, since they are anaphoric, have some familiar entities as referents, although the degrees of familiarity may vary.[5] It seems to me that calling sluiced which-phrases D-linked as a way of separating them out from other wh-phrases is merely a descriptive strategy without much explanatory value.

Another aspect of Pesetsky's definition of D-linking is that it captures more than one means by which a sluiced wh-phrase can be made to refer to a familiar set of entities. A which-phrase encodes a 'one of a set of X' meaning and is coupled with an NP correlate (*some question* in (10a, b)). A simple wh-phrase also can encode a similar meaning, as in (11).

(11) You were dressed in something red that night, but I don't remember what.

The correlate contains a reduced relative clause, modifying the indefinite pronoun *something*, and the set of felicitous referents of the wh-phrase is a set of red items of clothing, hence a set that is already familiar to both speaker and hearer. The notion of D-linking that Szczegielniak has in mind must be rather narrow, since his D-linked category does not extend to simple wh-phrases. I further pursue the challenge that sentences like (11) pose for an account of preposition omission in Polish sluicing by conducting a controlled acceptability judgment study.

[5] Discourse-initial sluicing using a variety of wh-phrases is also a possibility, but the contexts where preposition omission occurs are such that a linguistic correlate is always present in prior discourse.

Experiment 2: Complexity of correlates

It is reasonable to assume that Szczegielniak's account predicts that a Polish counterpart of (11), given in (12), is unacceptable, insofar as no underlying interrogative cleft (see (13)) can be envisioned for it.

(12) Byłaś ubrana w coś czerwonego tamtej nocy, ale nie pamiętam co.

(13) *Co to w czerwonego byłaś ubrana tamtej nocy?
what.A it in red.A you.were dressed that night

Unlike (13), I find (12) to be quite acceptable, however. This sort of modification by means of a reduced relative clause provides a useful tool to investigate how the form of the correlate (NP vs. reduced relative clause) influences the acceptability of preposition omission. I designed an experiment testing the difference between the NP and relative clause conditions. Sample experimental items appear in (14).

(14) a. Byłaś ubrana w coś czerwonego tamtej nocy, ale nie pamiętam
you.were dressed in something red.A that night but not I.remember
co.
what.A
'You were dressed in something red that night, but I don't remember what.'

b. Byłaś ubrana w coś czerwonego tamtej nocy, ale nie pamiętam
you.were dressed in something red.A that night but not I.remember
w co.
in what.A
'You were dressed in something red that night, but I don't remember in what.'

c. Byłaś ubrana w jakąś sukienkę tamtej nocy, ale nie pamiętam
you.were dressed in some dress.A that night but not I.remember
jaką (sukienkę).
what (dress).A
'You were dressed in some dress that night, but I don't remember what (dress).'

d. Byłaś ubrana w jakąś sukienkę tamtej nocy, ale nie pamiętam
you.were dressed in some dress.A that night but not I.remember
w jaką (sukienkę).
in what (dress).A
'You were dressed in some dress that night, but I don't remember in what (dress).'

Forty native speakers of Polish participated in the experiment, rating the items on a three-point scale as well. Figure 2 shows the results, normalized for speaker variability. The relative clause condition is abbreviated as *REL*; the NP condition appears as *NP*. The absence/presence of preposition is indicated as *P*/*NoP*.

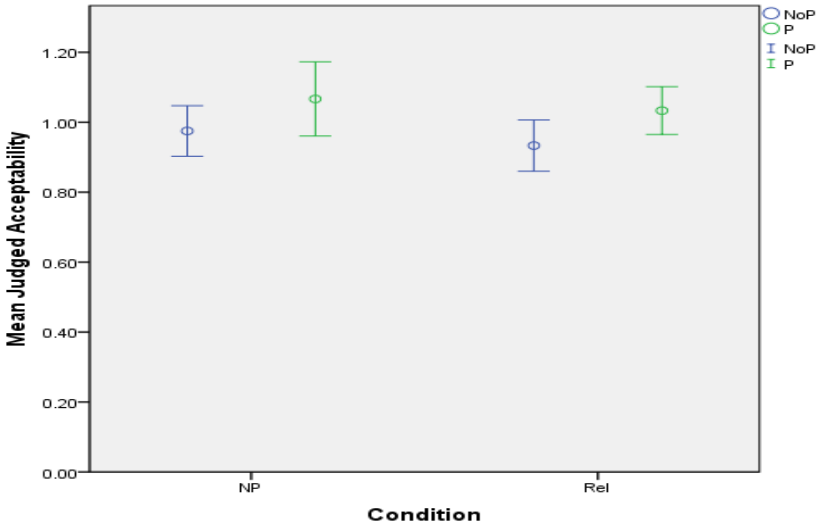

Figure 2: Acceptability ratings by items (scale 1-3), normalized for speaker variability

Results

There was a marginally significant effect of preposition omission by items (F_1 = 5.219, p = .032) and a main effect of preposition omission by subjects (F_2 = 33.508, p < .000), where preposition omission was judged worse in the relative clause condition. The interaction between preposition omission and condition was unreliable (F_1 = .010, p = .922, by items; F_2 = 1.108, p = .307 by subjects), and so was the effect of condition (F_1 =

1.439, p = .243, by items; F_2 = 2.549, p = .128, by subjects).[6] When Nykiel and Sag (forthcoming) compared complex (as in (10a, b)) and simple wh-phrases (as in (10c, d)), they found a main effect of both preposition omission and condition, that is, of complexity. These findings suggest an acceptability scale: preposition omission in the simple condition is clearly degraded, while in the NP condition it is fully acceptable, with the relative clause condition falling in between.

This scale cannot be explained by appeal to D-linking in that all three conditions involve discourse-old (familiar) referents for wh-phrases, and none of the conditions permits a fully acceptable corresponding cleft. Even if the putative clefts were acceptable, Szczegielniak would still have to account for the similarity of the NP and relative clause conditions. I propose that D-linking be replaced here by a more explanatory term of phrasal complexity of a correlate and a sluiced wh-phrase. I use Hofmeister's (2008) definition of complexity (or informativity): 'a phrase x_1 is more informative [complex] than a phrase x_2 if the syntactic and semantic information in x_2 is a proper subset of the syntactic and semantic information in x_1'. By this definition, the NP correlate in (14c, d) is more complex than that in (10c, d), and the correlate in (14a, b), too, is more complex than that in (10c, d). It is more difficult to assess the relative complexity of (14a, b) and (14c, d), because it is not clear that the semantic and syntactic information in *something red* is properly included in the information in *some dress*, unless the dress is indeed red. One clue comes from the fact that the wh-phrase in (14c, d) itself is clearly more complex, which increases the overall degree of complexity of this item. Thus, the scale of acceptability in fact represents different levels of phrasal complexity. Note also that the complexity-based analysis correctly predicts the parallels between which- and what-phrases, which I discussed in the introduction, in that both fall into the category of complex phrases.

An adequate characterization of the behavior of sluicing must make reference to the scalar preferences found in preposition omission. Given the data discussed, phrasal

[6] The same results, when not normalized for speaker variability, reveal a marginally significant effect of preposition omission by items (F_1 = 5.920, p = .024) and a significant one by subjects (F_2 = 20.248, p < .000). No effect of condition was found, though there was a significant interaction between preposition omission and condition (F_1 = 12.496, p < .01 by items; F_2 = 42.598, p < .000 by subjects). This interaction is due to the fact that the judgments for preposition omission in the NP condition were higher than those for non-omission, while the reverse held true for the relative clause condition.

complexity is best viewed as a 'soft' or gradient factor influencing the acceptability of preposition omission. That is, the possibility of preposition omission is not attributable to any categorical constraint operative in the syntax of non-elliptical clauses. A cleft analysis, by shifting the burden of accounting for the appearance of prepositionless sluices onto a particular kind of structure, by necessity rules out gradient aspects of preposition omission.

3 General discussion

The implication of this investigation is that there is no cleft-based exception to a categorical ban on preposition omission under sluicing. Rather, the pattern of preposition omission is subject to gradient constraints and apparently unrelated to putative underlying clefts, as shown by acceptability ratings. The source of this pattern presumably lies not in the syntax, but processing difficulty caused by sluiced phrases, a point I do not pursue here.[7] I merely point out that a complexity-based explanation is more empirically satisfying in that it successfully captures the distribution of acceptability judgments across clauses whose syntax remains constant while individual phrases are manipulated with respect to complexity.

A key property of the data found is, I suggest, that it does not argue for connectivity effects that could explain away the existence of counterexamples to Merchant (2001), nor does it support a categorical perspective on the availability of preposition omission. As we have seen, a case has been made that clefts serve as an alternative source of sluicing just in case interrogative clauses are unavailable. But the behavior of Polish sluicing depletes the set of candidates for the cleft analysis, for some of which a complexity-based explanation may likewise be a better fit.

4 Conclusion

Since Merchant (2001) a correlation has been recognized between the availability of preposition omission under sluicing and the availability of preposition stranding under wh-movement in interrogative clauses, and with it connectivity effects. To the extent that individual languages make use of underlying structures such as clefts in place of

[7] See Nykiel and Sag (forthcoming) for a non-transformational analysis of sluicing that addresses fine-grained differences in phrasal complexity and the effects they have on the acceptability of preposition omission.

interrogative clauses, connectivity effects have not been questioned. In this paper, I reevaluate the evidence for an underlying cleft structure in Polish as per Szczegielniak (2005, 2008). Based on experimental data, I argue that Polish does not have an acceptable cleft structure wherein preposition stranding is possible, while instances of preposition omission under sluicing are found to be felicitous. Further, preposition omission appears to be possible above and beyond the one context where, according to Szczegielniak, clefts are also available, ruling out a cleft-based explanation. Taken together, my data speak against including Polish among languages that lend support to Merchant (2001).

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