DP-internal *only* in English and Russian

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Abstract

This paper presents an analysis of DP-internal *only* in English and
Russian. I review the evidence in Coppock and Beaver (2012b, 2015) for
definites containing *only* that do not presuppose uniqueness, and supple-
ment it with data from Russian. Building on this empirical foundation, I
propose that DP-internal *only* presupposes existence and asserts unique-
ness, and the determiner *the* in *the only* constructions is semantically vac-
uous. As a consequence, DPs containing *only*, like indefinites, are never of
type e. I also present evidence that the DP-internal and adverbial usages
of *only* correspond to a single lexical item.

1 Introduction

Suppose, counterfactually, that the novel *Waverley* was written by a committee comprising Scott, Macfarlane, and Campbell. In such circumstances, one could truthfully utter (1).

(1) Scott is not the only author of *Waverley*.

<div align="right">(Coppock and Beaver, 2015)</div>

What does the definite description *the only author of Waverley* in (1) denote? In conventional theories of definiteness,[1] an expression of the form *the P* can only be used when a single individual satisfies the predicate *P*. But if Scott, Macfarlane and Campbell are all authors of *Waverley*, then there is no single "only author of *Waverley*," and the definite description should not be interpretable. Nonetheless, (1) is a grammatical sentence of English.

The main thrust of this paper is to argue for an account of (1) and similar examples in English and Russian wherein *only* presupposes existence and asserts uniqueness, and *the* is not the definite article at all, but a semantically vacuous determiner. The major advantage of this analysis compared to Coppock and Beaver's (2015) is that it is compatible with a Fregean theory of definiteness.

Here and throughout the term "DP-internal *only*" (following McNally (2008)) refers to the adjectival use of *only* in phrases such as *the only author of Waverley* in (1).

The paper is organized as follows. Section 2 reviews the data presented in Coppock and Beaver (2015) on DP-internal *only* and definiteness. Section 3 shows that Russian also evinces a surprising interaction between *only* and definiteness. Section 4 presents my analysis of DP-internal *only* and the accompanying determiner *the* in more detail. Section 5 compares my analysis to Coppock and Beaver's (2015). Section 6 describes the semantics of DP-internal *only* in Russian in more depth. Section 7 examines the adverbial use of the word *only*. Section 8 concludes the paper.

2 *Only* NPs in English

Although *only* NPs (that is, nominal phrases containing *only*) appear to be definites,[2] they do not always meet the licensing conditions of the definite article. Consider (1) again.

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[1] That is, in theories of definiteness in the vein of Frege (1892 [reprinted 1948]) or Strawson (1950), in which the definite article presupposes uniqueness. Familiarity theories of definiteness, which describe the definite article's licensing conditions in different terms, will be addressed briefly in section 5. See Schwarz (2009, chap. 1) and Horn and Abbott (2012) for general discussion of the principal contemporary theories of definiteness.

[2] With the exception of the idiom *an only child*. The use of the indefinite article with *only* is not productive:

(1) * He is an only friend.

(1)   Scott is not the only author of *Waverley*.

The terms *author of Waverley* and *only author of Waverley* denote the following sets in the scenario from the previous section:

(2)   *author of Waverley*: {SCOTT, MACFARLANE, CAMPBELL}

(3)   *only author of Waverley*: ∅

Someone has the property of being an "only author *Waverley*" if they are an author of *Waverley* and no one else is. The existence of multiple authors of *Waverley* entails that there are no "only authors," so the set in (3) is empty. Hence the uniqueness presupposition of the definite article is not satisfied with regard to *only author of Waverley*,[3] which ought to denote a set of a single element if the definite article is to be used felicitously.

Observe that it is *only* and *not* together which cancel the uniqueness entailment. When either is removed, as in (4) and (5), then *the (only) author* refers to a single, unique author.

(4)   Scott is not the author of *Waverley*.

(5)   Scott is the only author of *Waverley*.

Only NPs without a uniqueness entailment are not restricted to the predicate position. (6), also from Coppock and Beaver (2015), shows such an *only* NP in an argument position. In a context where Anna's team scored multiple goals, and she scored one, then (6) would be true. But the existence of multiple goals means that uniqueness is not satisfied.

(6)   Anna didn't score the only goal.

Both (1) and (6) have secondary readings in which the *only* NP does satisfy uniqueness. These readings can be made more prominent with context:

(7)   Scott isn't the only author of *Waverley*. Macfarlane is.

(8)   Anna didn't score the only goal. Maria did.

These referential readings are roughly the same as the ones that arise when *the* is substituted for *the only*:

(9)   Scott isn't the author of *Waverley*. Macfarlane is.

(10)   Anna didn't score the goal. Maria did.

(1) and (7) and (6) and (8) show that *only* NPs in the scope of negation are ambiguous between readings where uniqueness is and is not satisfied. Only verbs of creation induce this ambiguity. When *see* is substituted for *score*, as in (11), then the unique reading of *the only goal* is forced; (11) can only mean that there was a single goal.

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[3]Coppock and Beaver (2015) divide the presupposition of the definite article into two parts: existence and uniqueness. In those terms, it is the existence presupposition that is not satisfied in (1) because the set that directly combines with *the* is empty.

(11)   Anna didn't see the only goal. #Vera saw one, too.

In fact, verbs of creation is an overly narrow characterization, because verbs like *bring* that do not exactly involve acts of creation nonetheless lack a uniqueness entailment:

(12)   Anna didn't bring the only cake. Vera brought one, too.

Coppock and Beaver (2015) note that the verbs which cause *only* NPs to entail non-uniqueness all follow the inference pattern in (13).

(13)   There were ten cakes, and then Anna brought one, making eleven.

(14) shows that the pattern fails for *see*, which is why (11) has only a referential reading of *the only goal*.

(14)   #There were ten goals, and then Anna saw one, making eleven.[4]

A sentence whose presuppositions are not met should not have a defined truth value. But since (1) and (6) are true in the given circumstances, *only* NPs must lack the uniqueness presupposition of regular definites.

3   *Edinstvennyj* NPs in Russian

The surprising interaction of DP-internal *only*, negation, and definiteness carries over to Russian, a language with a substantially different paradigm of definiteness. Russian lacks articles and allows bare nominals in argument positions. Bare nominals may be interpreted as either indefinite or definite depending on context:[5]

(15)   Anna čitaet knigu.
       Anna reads book

       'Anna is reading a book' or 'Anna is reading the book.'

The standard account of bare nominals in Russian is that they receive their definite or indefinite import by covert type-shifting (Chierchia, 1998), with Partee's (1986) IOTA and A shifts applying to definite and indefinite nominals respectively. These type shifts are presumably embodied by phonetically null determiners in the syntax.

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[4]The ungrammaticality of (14) could be mitigated by replacing *goal* with *bird* and imagining a context where Anna was on a bird-spotting trip. But such a usage of *saw* involves a notion of bringing something into the realm of first-hand knowledge, and, as predicted, would allow for a non-unique reading of *the only bird*:

(1)   Anna didn't see the only bird. Vera saw one, too.

[5]Although indefinite readings are more restricted than definite ones. See Geist (2010) for details.

The interaction of DP-internal *only* and definiteness in Russian materializes as an unexpected paradigm of forced definite and indefinite readings (i.e., unique and non-unique) of *edinstvennyj* NPs (the Russian equivalent of *only* NPs). Argumental *edinstvennyj* NPs generally have unique readings, but constituent negation forces them to be read as non-unique and prevents them from serving as antecedents of pronouns in subsequent sentences. Unlike in English, argumental *edinstvennyj* NPs in negated sentences are not ambiguous between unique and non-unique readings.

(16)-(18) establishes the paradigm. The second sentence in each numbered example, separated for clarity, should be read as a continuation of the first. *Edinstvennuju lekciju* 'the only lecture' is definite in (16) and (17), which both entail a single lecture and allow subsequent reference by a pronoun in the continuation sentence. The same phrase in (18), which entails multiple lectures, is indefinite and does not allow subsequent reference. Note that in (16) and (17) Russian uses two different, unambiguous sentences to express the two ambiguous readings in English sentences like (6).

(16)   a. Anna posetila edinstvennuju lekciju, kotoruju pročital Xomskij,
           Anna attended only   lecture which   gave   Chomsky
           kogda byl v našem universitete.
           when was at our   university

           'Anna went to the only lecture that Chomsky gave at our university.'

       b. Ona byla o   lingvistike.
          it   was about linguistics

          'It was about linguistics.'

(17)   a. Anna ne posetila edinstvennuju lekciju, kotoruju pročital
           Anna not attended only   lecture which   gave
           Xomskij, kogda byl v našem universitete.
           Chomsky when was at our   university

           'Anna didn't go to the only lecture that Chomsky gave at our university.'

       b. Ona byla o   lingvistike.
          it   was about linguistics

          'It was about linguistics.'

(18)   a. Anna posetila ne edinstvennuju lekciju, kotoruju pročital
           Anna attended not only   lecture which   gave
           Xomskij, kogda byl v našem universitete.
           Chomsky when was at our   university

           'Anna went to one of the lectures that Chomsky gave at our university.'

       b. # Ona byla o   lingvistike.
            it   was about linguistics

          'It was about linguistics.'

The reason that *ona* 'it' cannot refer to *edinstvennuju lekciju* in (18) is that indefinites in negated sentences do not generally license subsequent reference, unlike definites:

(19) Anna didn't go to (the/*a) lecture, because it was too late in the evening.

In Russian, negation forces the definite reading:

(20) Anna ne posetila lekciju potomu, čto ona byla sliškom pozdno
      Anna not attended lecture because   it was too   late
      večerom.
      in the evening
      'Anna didn't go to the lecture, because it was too late in the evening.'

The possibility or impossibility of subsequent pronominal reference is thus an additional diagnostic for whether the *edinstvennyj* NP is a (unique) definite or a (non-unique) indefinite.

The Russian data is more complicated than the tidy contrast in (16)-(18) would suggest, however. For one thing, some speakers *do* permit the continuation in (18). This phenomenon will be addressed in section 4. For another, some speakers find (17) marginal and prefer to state it as in (21), which has a stronger implication that someone else rather than Anna went to Chomsky's only lecture.

(21) Ne Anna posetila edinstvennuju lekciju, kotoruju pročital Xomskij,
      Not Anna attended only   lecture which   gave   Chomsky
      kogda byl v našem universitete.
      when was at our   university
      'It wasn't Anna that went to the only lecture that Chomsky gave at our university.'

In examples to follow, I will use the variants corresponding to (17) and not (21) for consistency, as all of my consultants agreed that one or the other was grammatical.

Some speakers interpret (18) as entailing that Anna attended more than one of Chomsky's lectures, while others interpret it to mean that she attended only one (but that Chomsky gave more than one). In either case, the *edinstvennyj* NP must be non-unique since it is entailed that Chomsky gave more than one lecture.

The word *edinstvennyj* requires greater context in Russian than DP-internal *only* does in English. Most speakers judge (22) to be bad, for example, because of the lack of a restrictive clause or prepositional phrase attached to *edinstvennyj gol* 'only goal.' For that reason, the *edinstvennyj* NPs throughout this section bear relative clauses or PPs to give the necessary context for their use to be grammatical in Russian.

(22)   * Anna zabila edinstvennyj gol.
          Anna scored only   goal

Intended: 'Anna scored the only goal.'

Despite these caveats, the generalization remains that argumental *edinstvennyj* NPs must be read as non-unique when in the scope of constituent negation and as unique otherwise. This generalization is borne out across a range of different verbs and NPs:

(23)   a. Marija napisala edinstvennoe xorošoe sočinenie vo vsëm klasse.
          Maria wrote   only   good   essay   in entire class
          'Maria wrote the only good essay in the entire class.'

        b. Ono bylo o   russkoj literature.
          it   was about Russian literature
          'It was about Russian literature.'

(24)   a. Marija ne napisala edinstvennoe xorošoe sočinenie vo vsëm
          Maria not wrote   only   good   essay   in entire
          klasse.
          class
          'Maria didn't write the only good essay in the entire class.'

        b. Ono bylo o   russkoj literature.
          it   was about Russian literature
          'It was about Russian literature.'

(25)   a. Marija napisala ne edinstvennoe xorošoe sočinenie vo vsëm
          Maria wrote   not only   good   essay   in entire
          klasse.
          class
          'Maria wrote one of the good essays in the class.'

        b. # Ono bylo o   russkoj literature.
            it   was about Russian literature
          'It was about Russian literature.'

With *proiznesti* 'to give (a speech)':

(26)   a. Boris proiznës edinstvennuju xorošuju reč'   na svad'be.
          Boris gave   only   good   speech at wedding
          'Boris gave the only good speech at the wedding.'

        b. Ono bylo o   molodožënax.
          it   was about newlyweds
          'It was about the newlyweds.'

(27)   a. Boris ne proiznës edinstvennuju xorošuju reč'   na svad'be.
          Boris not gave   only   good   speech at wedding
          'Boris didn't give the only good speech at the wedding.'

        b. Ono bylo o   molodožënax.
          it   was about newlyweds
          'It was about the newlyweds.'

(28)   a. Boris proiznës ne edinstvennuju xorošuju reč'   na svad'be.
             Boris gave   not only   good   speech at wedding

            'Boris gave one of the good speeches at the wedding.'

      b. # Ono bylo o   molodožënax.
               it   was about newlyweds

            'It was about the newlyweds.'

Not only verbs of creation force the indefinite reading of *edinstvennyj* NPs. Other verbs like *uvidet'* 'to see' and *poprobovat'* 'to taste' do so as well:

(29)   a. Lena uvidela edinstvennogo krokodila, kotoryj byl v zooparke.
             Lena saw   only   crocodile which was at zoo

            'Lena saw the only crocodile at the zoo.'

      b. On byl dlinoy   tri   metra.
             it   was lengthwise three meters

            'It was three meters long.'

(30)   a. Lena ne uvidela edinstvennogo krokodila, kotoryj byl v
             Lena not saw   only   crocodile which was at
             zooparke.
             zoo

            'Lena didn't see the only crocodile at the zoo.'

      b. On byl dlinoy   tri   metra.
             it   was lengthwise three meters

            'It was three meters long.'

(31)   a. Lena uvidela ne edinstvennogo krokodila, kotoryj byl v
             Lena saw   not only   crocodile which was at
             zooparke.
             zoo

            'Lena saw one of the crocodiles at the zoo.'

      b. # On byl dlinoy   tri   metra.
               it   was lengthwise three meters

            'It was three meters long.'

(32)   a. Ol'ga poprobovala edinstvennyj tort, kotoryj byl na večerinke.
             Olga tasted   only   cake which   was at party

            'Olga tasted the only cake at the party.'

      b. On byl šokoladnyj.
             it   was chocolate

            'It was chocolate.'

(33)   a. Ol'ga ne poprobovala edinstvennyj tort, kotoryj byl na večerinke.
             Olga not tasted   only   cake which   was at party

            'Olga didn't taste the only cake at the party.'

    b. On byl šokoladnyj.
       it   was chocolate

      'It was chocolate.'

(34)   a. Ol'ga poprobovala ne edinstvennyj tort, kotoryj byl na večerinke.
        Olga tasted   not only   cake which was at party

        'Olga tasted one of the cakes at the party.'

    b. # On byl šokoladnyj.
        it   was chocolate

      'It was chocolate.'

Argumental *edinstvennyj* NPs entail uniqueness except in the scope of constituent negation, where they entail non-uniqueness. This pattern parallels the data from English from section 2, in that negation (constituent in Russian, sentential in English) forces a non-unique reading of NPs with *only* and *edinstvennyj*.

4   A theory of *only* NPs

In this section, I present a theoretical account of the data in sections 2 and 3. I argue that DP-internal *only* presupposes existence and asserts uniqueness, and the lexical item *the* in *only* NPs in English is semantically vacuous.

Before I do so, I will briefly show that Heim's (1982) familiarity theory of definiteness, a prominent alternative to uniqueness theories, also has trouble with the semantics of *only* NPs. Familiarity theories locate the fundamental difference between indefinites and definites in novelty and familiarity: the definite article is used when the referent is familiar to both speaker and listener, and the indefinite article is used when it is familiar only to the speaker.

Does a familiarity theory of definiteness account for the behavior of *only* NPs more successfully? In the exchange in (35), the referent of *the only goal* is clearly not familiar to the speaker (hence why *the goal* is not licensed), but it can nonetheless be used felicitously.

(35) - What happened in the match this morning?
      - Not much. Newcastle scored the *(only) goal.

While the implications of *only* NPs on familiarity theories of definiteness deserve a fuller treatment than I can give in this paper, (35) indicates that they would likewise have difficulty handling the semantics of *only* NPs.

4.1 Existence presupposition

Since the definite article[6] itself presupposes uniqueness and thus existence (a weaker condition than uniqueness), it is difficult to tease apart whether it is *only*

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[6]Although later I will argue that *the* in *the only* is not actually the definite article, here I assume a skeptical reader who has not yet been convinced of the point.

or *the* which contributes the existence presupposition to *only* NPs. Regardless, the shared entailment of Scott's authorship in (36) and its negated counterpart (37) shows that *only* NPs do presuppose existence, because both sentences entail that there is at least one author of *Waverley*.

(36) Scott is the only author of *Waverley*.
  a. Entailment: Scott is an author of *Waverley*.
  b. Entailment: There are no other authors of *Waverley*.

(37) Scott is not the only author of *Waverley*.
  a. Entailment: Scott is an author of *Waverley*.
  b. Entailment: There are other authors of *Waverley*.

Besides preservation under negation, another characteristic property of presuppositions is that failure to satisfy them causes the sentence as a whole to have an undefined truth value. Indeed, it would be strange (and not merely false) to utter either (36) or (37) if there were no authors of *Waverley*. Along the same lines, (38) is no better with *the only* than with just *the*.

(38) #Macron met with the (only) King of France today.

The evidence that DP-internal *only* alone has an existence presupposition without the help of *the* is not conclusive. There is stronger evidence that DP-internal *only* has a uniqueness assertion, and if that is the case then the definite article would no longer be compatible with *only* since *the*'s uniqueness presupposition would clash with *only*'s uniqueness assertion. If the definite article is out, then *only* is the only word left to carry the existence presupposition.

4.2 Uniqueness assertion

DP-internal *only* asserts uniqueness. Affirmative sentences with *only* NPs entail the uniqueness of the set that *only* combines with, as shown by the second entailment of (36) that Scott is a unique author of *Waverley*. Indeed, the primary purpose of using DP-internal *only* is to underscore uniqueness: one would use (39) rather than (40) in order to emphasize that there is only one computer in the situation.

(39) Boris broke the only computer.
(40) Boris broke the computer.

That the uniqueness entailment is an assertion and not a presupposition is demonstrated first of all by the *only* NPs in sections 2 and 3 which do not entail uniqueness. Since uniqueness is not preserved under negation in these examples, it must not be a presupposition.

Additional evidence supports the point. Consider the exchanges in (41) and (42).

(41) Is it true that John lives in the house with a green roof?
  - No, he lives next door.
  - #No, there are two houses with a green roof.

(42) Is it true that John lives in the only house with a green roof?
  - No, he lives next door.
  - No, there are two houses with a green roof.

In (41), the second speaker cannot felicitously challenge the uniqueness of *house with a green roof*. In (42), the same exchange but with *the only* instead of *the*, the second speaker is free to do so, indicating that uniqueness is at-issue and thus a semantic assertion.

Similar evidence comes directly from Coppock and Beaver (2015):

(43) #He's not the ambassador to Spain—there are two.

(44) He's not the only ambassador to Spain—there are two.

Only the uniqueness of the phrase with *only* may be negated—a clear sign that *the only ambassador to Spain* asserts uniqueness instead of presupposing it.

The existence presupposition and uniqueness assertion are already present in Coppock and Beaver's (2015) proposed logical form for *only*, given below.

(45) *only*: $\lambda P.\lambda x.[\partial(P(x)) \wedge \forall y[x \neq y \rightarrow \neg P(y)]]$

Coppock and Beaver use Beaver's (1992) partial operator ∂ to model presuppositions compositionally: $\partial(\phi)$ is true if ϕ is true and undefined otherwise. Notice that presupposing $P(x)$ amounts to presupposing the existence of a satisfier of the predicate P. And the second conjunct is an assertion of the uniqueness of x relative to the predicate P, so existence and uniqueness are already built in to (45).

4.3 Contribution of the determiner *the*

Where my proposal diverges from Coppock and Beaver's (2015) is in the role of *the* in *only* NPs. Coppock and Beaver assume that it is the same definite article as in any other definite description. In my proposal, *the* in *only* NPs is a determiner with no semantic content.

There is independent evidence that *the* may be used in non-definite contexts, specifically with kind readings, covariation with an indefinite, and pseudo-indefinite readings.

An example of a kind reading with *the* is in (46). The phrase *the snow leopard* does not refer to a specific snow leopard, but to snow leopards as a species.

(46) The snow leopard is a solitary creature.

Schwarz (2009) presents "donkey sentences" like (47) in which *the donkey* does not refer to a particular donkey but instead co-varies with the indefinite NP in the antecedent clause.

(47) If a farmer owns a donkey, he beats the donkey.

If *the* in (47) were the definite article, the *the donkey* would have to denote a single donkey, contrary to the meaning of the sentence.

Certain expressions like *read the newspaper* and *take the bus* also do not seem to involve proper definites, as the referents of *the newspaper* and *the bus* need not be unique (or familiar). They are essentially identical to the expressions *read a newspaper* and *take a bus*.

The existence of examples besides negated *only* NPs in which the word *the* does not have the semantics of the definite article lends credence to my hypothesis that *the* in *only* NPs is semantically vacuous.

An important consequence of this claim is that *only* NPs are never of type e. Since uniqueness is not a presupposition, *the only P*, unlike *the P*, is licensed even when P has multiple elements. But what would *the only P* denote in such circumstances? It cannot be the undefined individual, because as we have seen in (1) and (6) such sentences have defined truth values. Rather, it must be something similar to the quantificational definite descriptions proposed by Russell (1905), who modelled the definite article with an existential quantifier:[7]

(48) *Bertie found the solution*:
$\exists x.\text{SOLUTION}(x) \land \forall y.[\text{SOLUTION}(Y) \to y = x] \land \text{FOUND}(b, x)$

(Horn and Abbott, 2012, ex. 1′)

In fact, it is natural to model the semantics of *only* NPs as well with an existential quantifier. (6) can be translated into the formula in (49).

(49) *Anna scored the only goal*:
$\exists x.\partial(\text{GOAL}(x)) \land \text{SCORED}(a, x) \land \forall y[x \neq y \to \neg\text{GOAL}(x)]$

(49) expresses that there is a goal, scored by Anna, which is the unique goal in the situation (the universal quantification term asserts that all other entities in the domain of discourse are not goals, and therefore x is the only goal).

(49) is much closer to the semantics of *a goal* than that of *the goal*:

(50) *Anna scored a goal*: $\exists x.\text{GOAL}(x) \land \text{SCORED}(a, x)$

(51) *Anna scored the goal*: $\text{SCORED}(a, \iota x.\text{GOAL}(x))$

So the theoretical claim that *only* NPs are not of type e agrees with the actual semantics of such phrases—*the only P* is similar in meaning to *a P* but with an additional uniqueness condition, embodied by the last clause in (49).

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[7]Russell's theory is subject to the well-known objection in Strawson (1950) that it predicts that failure to satisfy the uniqueness condition of the definite article results in sentences that are false, not undefined as is actually the case.

A downside of this account of *the* in *only* NPs is that it implies a lexical ambiguity between the definite article and the semantically vacuous *the* wherever *the* appears. The use of the semantically vacuous *the* in normal definites like *the book* would be ruled out by a type mismatch: it would be of type e with the definite article *the* and of type $\langle e, t \rangle$ with the semantically vacuous *the*, so under normal circumstances *the book* would not be ambiguous. Nevertheless, it is inelegant to have two unrelated entries for *the*, and a more complete account is needed of why the semantically vacuous *the* can only ever appear with *only* NPs.

Furthermore, the claim that *the* has no semantic content in *only* NPs would not be able to capture the difference in meaning between (52) and (53).

(52) Anna scored the only goals.

(53) Anna scored only goals.

My theory of *the* wrongly predicts that (52) and (53) should have the same meaning.[8] While the presence of *the* is syntactically obligatory for singular count nouns, it is optional for plural nouns. I do not have an explanation for why its presence or absence has an effect on the overall semantics of the sentence.

4.4 Empirical coverage

The evidence in sections 2 and 3 can be distilled into four main empirical observations:

(54) *Only* NPs do not presuppose uniqueness in English.

(55) Argumental *only* NPs (with verbs of creation) are ambiguous in English between unique and non-unique readings.

(56) Argumental *edinstvennyj* NPs must have non-unique readings when co-occurring with constituent negation, and must have unique readings otherwise (without extra semantic help—see section 6).

(57) Argumental *edinstvennyj* NPs are never ambiguous in Russian.

(54) follows directly from my claim that *only* NPs assert uniqueness. Accounting for (55) takes a bit more work. Recall that the generalization arises from sentences like (6), repeated below.

(6) Anna didn't score the only goal.

(6) is ambiguous between a reading consistent with a single goal and a reading consistent with multiple goals. (58) and (59) tease apart the two readings with additional context, and spell out their truth conditions.

(58) **One-goal reading**
Anna didn't score the only goal. Maria did.

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[8]As long as one also maintains, as I do in section 7, that DP-internal *only* (in (52)) and adverbial *only* (in (53)) have the same semantics.

a. Anna scored a goal.

b. There was only one goal.

(59) **Multiple-goals reading**
Anna didn't score the only goal. Maria also scored.

a. Anna scored a goal.

b. There was not only one goal.

From (58) and (59), it is clear that the two sentences differ only in whether the uniqueness assertion of *the only goal* is negated.

An implication of the quantificational nature of *only* NPs noted in the previous section is that, in a compositional derivation, argumental *only* NPs must undergo some kind of raising operation akin to that of argumental indefinites, since they cannot compose directly with verbs that expect an argument of type *e*.

If the *only* NPs in (58) and (59) both must undergo raising, then the semantic ambiguity may be traced to a choice of different raising destinations, one outside of the scope of negation and the other inside. In (58), *the only goal* has evidently raised outside of the scope of negation, so that its uniqueness assertion is not negated. In (59), *the only goal* has raised to some lower position (perhaps adjoining to VP) in the scope of negation, so that its uniqueness assertion is negated. Thus the ambiguity of argumental *only* NPs in English is a consequence of their quantificational nature which necessitates raising out of argument positions.

Predicative *only* NPs like in (1) may also be ambiguous between a unique and non-unique reading. But unlike with argumental *only* NPs, a similar ambiguity arises even with predicative definites that do not contain *only*.

(60)   Napoleon is not the greatest French soldier.

(60) may be used to mean either that Napoleon does not have the property of being the greatest French soldier, or that Napoleon is not the same individual as the one designated by the moniker "the greatest French soldier." The former reading corresponds to the non-unique reading of *only* NPs. The latter reading corresponds to the unique reading of *only* NPs, in that *the only P* is being used as a designator and not a predicate.

A raising explanation likewise holds for the ambiguity in Russian.[9] Only argumental *edinstvennyj* NPs under constituent negation are forced to be non-unique. Since the constituent negation particle is syntactically attached to the *only* NP itself, it cannot raise out of negation; wherever it raises to, it will take the negation particle with it. It is not clear why no ambiguity arises with sentential negation in Russian, but whatever (presumably syntactic) reason there is that *edinstvennyj* NPs must raise outside of the scope of sentential negation

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[9]A raising account supposes, as I have argued previously, that *edinstvennyj* NPs are quantificational in nature and thus not of type *e*, unlike typical Russian bare nominals. If they were of type *e*, then raising would not longer be motivated and a different explanation for the Russian facts would be necessary.

would also account for the observation in (57) that argumental *edinstvennyj* NPs are never ambiguous as to a unique or non-unique reading. The ambiguity in English is due to raising possibilities that are apparently unavailable in Russian.

It was mentioned in section 3 that some idiolects of Russian allow reference to a *ne edinstvennyj* NP. That is to say, some Russian speakers find the combination in (61) grammatical, and similarly for (25), (28), (31) and (34).

(61) a. Anna posetila ne edinstvennuju lekciju, kotoruju pročital
          Anna attended not only   lecture which   gave
          Xomskij, kogda byl v našem universitete.
          Chomsky when was at our   university

          'Anna went to one of the lectures Chomsky gave at our university.'

     b. Ona byla o   lingvistike.
         it   was about linguistics

         'It was about linguistics.'

The issue is that *edinstvennuju lekciju* 'only lecture' still entails uniqueness in (61), despite occurring under constituent negation, which cancels the uniqueness assertion for most speakers.

That it nonetheless can indicates that perhaps *ne edinstvennuju lekciju* has undergone Partee's (1986) A shift to become indefinite. In that case, *ne edinstvennuju* would function as a complex determiner that asserts non-uniqueness, but the existence entailment would derive from A rather than *edinstvennyj*. Since A would apply to the entire phrase, including *ne*, it would be above the scope of negation and consequently would allow subsequent reference like any other bare indefinite nominal in Russian.

It is still mysterious why A would be available in (61) for some speakers but not others. The speakers who accepted (61) had much greater exposure to English than those who rejected them. There is no immediately clear reason why this correlation would hold, given that no equivalent construction to (61) is possible in English. Further research is necessary to better understand these idiolects of Russian and their prevalence.

4.5   Compositional semantics

While a full compositional analysis of *only* NPs is beyond the scope of this paper, I want to demonstrate that my theory is not inconsistent with a compositional semantics approach by showing the derivation of a simple sentence.

For concreteness, I adopt Coppock and Beaver's (2015) formula for *only* (leaving out the presupposition for simplicity), and the following formula for *the* when it combines with *only*:

(62) *only*: $\lambda P.\lambda x.\forall y[x \neq y \rightarrow \neg P(y)]$

(63) *the*: $\lambda P.\lambda x.P(x)$

(64)-(69) shows the derivation of (1).

(64) *author of Waverley*: $\lambda x.\text{AUTHOR}(x)$

(65) *only author of Waverley*: $\lambda x.\forall y[x \neq y \rightarrow \neg\text{AUTHOR}(y)]$

(66) *the only author of Waverley*: $\lambda x.\forall y[x \neq y \rightarrow \neg\text{AUTHOR}(y)]$

(67) *not the only author of Waverley*: $\lambda x.\neg\forall y[x \neq y \rightarrow \neg\text{AUTHOR}(y)]$

(68) *is not the only author of Waverley*: $\lambda x.\neg\forall y[x \neq y \rightarrow \neg\text{AUTHOR}(y)]$

(69) *Scott is not the only author of Waverley*: $\neg\forall y[s \neq y \rightarrow \neg\text{AUTHOR}(y)]$

The second conjunct of (69) asserts that it is not the case that all individuals other than Scott are not authors of *Waverley*, i.e. that there is an author of *Waverley* who is not Scott. Together with the presupposition that Scott is an author of *Waverley*, this formula correctly capture the semantics of (1) compositionally.

5 Critique of Coppock and Beaver (2015)

Coppock and Beaver (2015) offer an alternative theory of the interpretation of *only* NPs. The cornerstone of their theory is that IOTA and A are the source of the uniqueness and existence entailments for all definite and indefinite descriptions. On their account, the definite article encodes a weak uniqueness presupposition, while the indefinite article is an identity function on predicates. Weak uniqueness means uniqueness or non-existence, i.e. if uniqueness is $|P| = 1$ then weak uniqueness is $|P| \leq 1$.

(70) $the = \lambda P.\lambda x.[\partial(|P| \leq 1) \wedge P(x)]$

(Coppock and Beaver, 2015, p. 395)

(71) $a(n) = \lambda P.\lambda x.P(x)$

(Coppock and Beaver, 2015, p. 401)

A consequence of these formulae is that definite and indefinite descriptions are of type $\langle e, t \rangle$. In order to appear in argument positions, they must undergo either type-shifting to become type e, or syntactic raising.

Coppock and Beaver distinguish between definiteness, a morphological category signaled by the definite article in English, and determinacy, the property of denoting an individual. Except for *only* NPs, definites in English are always determinate and indefinites are always indeterminate under their account, so they need an explanation of why IOTA can never apply to indefinites, and A can only apply to definites when they are negated *only* NPs. They accomplish this with an appeal to the principles of Maximize Presupposition and Type Simplicity. Informally, Maximize Presupposition requires that if there are two possible words whose meanings are identical, then the one with the greater presupposition must be chosen. The indefinite and definite article have the same assertive content, but the definite article has an additional presupposition (weak uniqueness), so it is favored by Maximize Presupposition.

Concretely, Maximize Presupposition applies to (72) to rule out the undesired derivation where IOTA applies to *a chair* to yield a determinate reading. IOTA can only apply when uniqueness is met, but if it had been met, then Maximize Presupposition would have forced the choice of *the* instead of *a*.

(72)   Helen took a chair.

Type Simplicity is the preference for simpler types, all else being equal. IOTA has type $\langle et, e \rangle$ while A has type $\langle et, \langle et, t \rangle \rangle$, so IOTA would be preferred unless its licensing condition (uniqueness) is not met.

In summary, Coppock and Beaver's theory of definiteness has the following components:

- The definite article encodes a weak uniqueness presupposition. The indefinite article is an identity function.

- Definite descriptions are fundamentally predicative and are of type $\langle e, t \rangle$ before type-shifting.

- A DP receives its determinacy or indeterminacy through an IOTA or A type-shift. The principles of Maximize Presupposition and Type Simplicity ensure that definiteness and determinacy, and indefiniteness and indeterminacy, coincide in English except in the case of negated *only* NPs.

Coppock and Beaver's theory is more expansive than my proposal in section 4, because it reimagines definiteness not just for *only* NPs but for all other definite and indefinite expressions as well. One might question whether the universal application of covert type-shifts in English is sufficiently motivated by the evidence of negated *only* NPs, especially considering that there are two perfectly good overt operators, *the* and *a(n)*, which do the same work. Additionally, uniqueness is redundantly encoded in their system by the weak uniqueness presupposition of the definite article and the strong uniqueness presupposition of IOTA.

The reason that Coppock and Beaver offer such a wide-ranging proposal is that negated *only* NPs directly contradict any account of definiteness in which uniqueness is presupposed by the definite article. As long as one maintains that *only* NPs are regular definite descriptions, then indeterminate *only* NPs are a flat contradiction.

However, as I have shown in section 4, if one abandons the assumption that *only* NPs are proper definites, then no modifications to the theory of definiteness are necessary, and the semantics of *only* NPs can be formulated in a manner that is consistent with their limited scope of application.

6   DP-internal *only* in Russian

The preceding discussion has more or less assumed that *edinstvennyj* in Russian corresponds to DP-internal *only* in English. A comparison of *edinstvennyj* with

a number of exclusive adjectives in English will flesh out that assumption. There are several adjectives with a similar meaning to *only*, including *sole*, *single*, and *one*. (73), for instance, has the same meaning regardless of the choice of adjective.

(73)   The (only/sole/single/one) person to come was Ahmed.

However, these words evince distinct semantic and syntactic properties in other circumstances. Coppock and Beaver (2012a) catalog the inventory of properties thoroughly. Their conclusions are summarized in the table below.

	indefiniteness	superlatives	plurals	NPIs	DP negation
only	no	no	yes	yes	no
sole	yes	yes	yes	yes	yes
single	yes	yes	no	marginal	yes
one	yes	marginal	no	yes	yes

(74)-(78) make the entries in the table concrete. (74) tests the possibility of an indefinite interpretation. (75) and (76) test superlative and plural NPs, respectively. (78) tests the possibility of DP negation.

(74)   This company has (*an only/a sole/a single/one) director.

(75)   The oil spill was the (*only/sole/single/?one) worst environmental disaster in the state's history.

(76)   They are the (only/sole/*single/*one) people we can trust.

(77)   The (only/sole/??single/one) pick-up truck he ever owned was a Chevrolet.

(78)   Not (*an only/a sole/a single/one) person came.

The remainder of the section will test the properties of *edinstvennyj* against this matrix.

6.1   Indefiniteness

Unlike in English, *edinstvennyj* NPs (the Russian equivalent of *only* NPs) may be indefinite, not only with constituent negation as shown in section 3, but also in a variety of other circumstances:

(79)   U ètoj kompanii — (odin/edinstvennyj) direktor.
       At this company   (one/only)   director
       'This company has a sole director.'

(80)   Marija napisala edinstvennoe xorošoe sočinenie za vsju   žizn'.
       Maria wrote   only   good   essay   in entire life
       'Maria wrote a single good essay in her entire life.'

(81) Boris ne proiznës ni edinstvennoj xorošoj reči na svad'be.
     Boris not gave   not only   good   speech at wedding

     'Boris didn't give a single good speech at the wedding.'

(79) is an existential construction, in which *edinstvennyj* is synonymous with *odin* 'one.' In (80), indefiniteness is forced by the prepositional phrase *za vsju žizn'* 'in her entire life' which precludes a definite reading. In (81), double negation with the construction *ne . . . ni* renders the *edinstvennyj* NP indefinite.

6.2   Licensing of negative polarity items

Both adverbial and DP-internal *only* license negative polarity items in English:

(82)   *(Only) Khalid **ever** goes to the movies.

(83)   The *(only) poem I **ever** read in high school was "The Raven."

DP-internal *only* cannot license NPIs outside of its DP:

(84)   * The only team that I had heard of **ever** won the World Cup.

Edinstvennyj licenses two kinds of NPIs, *kto-libo* (Pereltsvaig, 2006) and *kto-nibud'* (Brown and Franks, 1995):

(85) Ivan vzjal edinstvennuju knigu, kotoruju (kto-libo / ?kto-nibud')
     Ivan took only   book which   anybody   anybody
     xotel.
     wanted

     'Ivan took the only book that anybody wanted.'

(86), the same sentence except without *edinstvennyj*, is ungrammatical, proving that it is *edinstvennyj* that licenses the NPIs.

(86)   * Ivan vzjal knigu, kotoruju (kto-libo / kto-nibud') xotel.
       Ivan took book   which   anybody   anybody   wanted
       Intended: 'Ivan took the book that somebody wanted.'

Edinstvennyj cannot license *kto-nibud'* outside of its DP:

(87) Edinstvennyj učitel' vybral (kogo-to / *kogo-nibud').
     only   teacher picked someone   anyone

     'The only teacher picked someone.'

In (87), *kto-to* is a positive polarity item that is subject to Principle C of the Binding Theory (Brown and Franks, 1995).[10]

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[10]The morphemes *to*, *nibud'* and *libo* are affixes or clitics which may attach to a number of pronouns, including *čto* 'what' (*čto-to*, *čto-nibud'*, *čto-libo*) and *kto* 'who' (*kto-to*, *kto-nibud'*, *kto-libo*). Only the underlying pronoun takes case endings, hence forms like *kogo-to*, the genitive and accusative declension of *kto-to*.

6.3   Other properties of *edinstvennyj*

The remaining properties of *edinstvennyj* to be pinned down are its ability to combine with superlative NPs and plural NPs, and to undergo DP negation.

DP negation is impossible for *edinstvennyj*:

(88)   Ni   (odin/*edinstvennyj) čelovek ne   prišël.
       Not one/only   person not came

‘Not a sole person came.’[11]

Edinstvennyj (in its plural form *edinstvennye*) may modify a plural NP.

(89)   Oni — edinstvennye ljudi, kotorym ja doverjaju.
       they   only   people which   I trust

‘They are the only people that I trust.’

Edinstvennyj cannot generally modify a superlative NP:

(90)   * Èto edinstvennyj samyj vysokiy neboskrëb v   Čikago.
           this only   most tall   skyscraper in Chicago

           Intended: ‘It is the single tallest skyscraper in Chicago.’

However, there are marginal examples where *edinstvennyj* can combine with a superlative, with undertones of hyperbole:

(91)   ?? Ona edinstvennaja samaja krasivaja ženšina vo vsëm mire.
          she only   most   beautiful woman   in entire world

          ‘She is the single most beautiful woman in the whole world.’

6.4   Summary

The relevant semantic and syntactic properties of *edinstvennyj* and its potential counterparts are thus:

	indefiniteness	superlatives	plurals	NPIs	DP negation
edinstvennyj	yes	marginal	yes	yes	no
only	no	no	yes	yes	no
sole	yes	yes	yes	yes	yes
single	yes	yes	no	marginal	yes
one	yes	marginal	no	yes	yes

The properties of *edinstvennyj* are most similar to those of DP-internal *only*, with the exception of the greater possibility of an indefinite reading of *edinstvennyj* compared with English *only*. The similarity of *only* and *edinstvennyj* in a range of circumstances supports my comparison between the two words with regards to definiteness.

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[11]Russian *ni* is a negative concordance particle in this case, rather than double negation.

7 DP-internal *only* and adverbial *only*

So far I have exclusively discussed the DP-internal usage of the word *only*. There is also a usage which I will term "adverbial *only*" for convenience.[12] An example is (92).

(92)   Only Omar takes the bus.

DP-internal and adverbial *only* share many properties, including the basic inference pattern of existence and uniqueness, association with focus, alternative sets and the licensing of negative polarity items. The purpose of this section is to argue that my analysis of DP-internal *only* is consistent with a unified account of the two *only*s, though the details of what a unified account would look like are beyond the scope of this paper.

7.1 Compositional semantics

(45), repeated below, is the logical form of DP-internal *only* proposed by Coppock and Beaver (2015).

(45)   *only*: $\lambda P.\lambda x.[\partial(P(x)) \wedge \forall y[x \neq y \rightarrow \neg P(y)]]$

The formula for DP-internal *only* in (45) also adequately captures the meaning of adverbial *only* in (92). Suppose the following translations:

(93)   *Omar*: o

(94)   *takes the bus*: $\lambda x.\textsc{Take-bus}(x)$

If *only* composes first with *takes the bus* and then with *Omar*, then the logical form of the entire sentence would be (95).

(95)   *Only Omar takes the bus*: $\partial(\textsc{Take-bus}(o)) \wedge \forall y[o \neq y \rightarrow \neg\textsc{Take-bus}(y)]$

(95) works out to presuppose that Omar takes the bus and assert that no one else does, which is the correct meaning of the sentence. This division of presupposition and assertion is the standard analysis of simple sentences with *only* (Horn, 1969), and it mirrors the existence presupposition-uniqueness assertion inference pattern of DP-internal *only*.

The one caveat is that it would be more plausible syntactically for *only* to compose first with *Omar* and then with *takes the bus*. Of course this could be accomplished by switching the order of the parameters P and x in (45), but then a similar but mirrored problem would arise with the DP-internal usage of *only*, since it must combine with P before x.

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[12]Although *only* has a different distribution than other adverbs, for example:

(1)   (Only/??Quickly) John finished the race.

(2)   John finished the race (*only/quickly).

The exact syntactic status of this usage of *only* is not relevant to my argument.

There may be technical issues (though seemingly tractable ones) in realizing a unified account of the two *only*s in the framework of compositional semantics. Nonetheless, the difficulty resides mostly in the syntax, and the semantics of the two words are near-identical.

7.2   Alternative sets and association with focus

Alternative sets are a fundamental part of the semantics of adverbial *only* (Rooth, 1985, 1992). A sentence with adverbial *only* like (96) asserts that no one in a set of contextually constrained alternatives to Min-ji goes to the movies (in addition to presupposing that Min-ji herself does go).

(96)   Only Min-ji goes to the movies.

Only NPs with restricting clauses or PPs also involve alternative sets. (97), for instance, carries an implication of the existence of alternative buses to other destinations which (98), lacking *only*, does not.

(97)   Rebecca took the only bus to Wichita.

(98)   Rebecca took the bus to Wichita.

When *only* NPs lack a restricting clause, like in (99), then the presence of an alternative set becomes harder to diagnose. But again, the crucial difference between (99) and (100), its counterpart without *only*, is that (99) carries a wider entailment of uniqueness (in the sense that (100) but not (99) would be licensed at an event with more than one cookie), and to a certain degree expresses the expectation that there would have been more than one cookie. It is with regard to these alternative, non-existent cookies that (99) expresses its meaning.

(99)   Raj ate the only cookie.

(100)   Raj ate the cookie.

Besides inducing alternative sets, Rooth (1985) showed that adverbial *only* associates with focus. Consider (101) and (102), where capitalization marks semantic focus.

(101)   Mary only introduced BILL to Sue.

(102)   Mary only introduced Bill to SUE.

In a situation where Mary introduced Bill and Dave to Sue, and Dave to Mary, (101) would be false but (102) would be true. But without *only*, both sentences would be true. The crux of association with focus is that *only* interacts with semantic focus in a manner that affects truth conditions.

DP-internal *only* likewise associates with focus. If Mary has a red hatchback, Mike has a red pick-up truck, and Susan has a blue sedan, then (103) would be true but (104) would be false insofar as it implies that other people also have hatchbacks. Again, removing *only* renders both sentences true in the given context.

(103)   Margaret is the only one with a red HATCHBACK.

(104)   Margaret is the only one with a RED hatchback.

The evidence is fairly strong that DP-internal *only* associates with focus and induces alternative sets, although the alternation in unrestricted *only* NPs like (99) is more difficult to detect.

7.3   Negative polarity items and downward entailment

Section 6 showed that DP-internal *only*, like adverbial *only*, licenses negative polarity items. The scope of adverbial *only* is not a traditional downward entailment environment, however. (105) does not entail (106).

(105)   Only John eats vegetables.

(106)   Only John eats broccoli.

However, a weaker version of downward entailment called Strawson entailment does apply. Strawson entailment carries the additional requirement that a sentence's presuppositions be satisfied (Von Fintel, 1999). In (106), if the presupposition that John eats broccoli is satisfied, then (105) does entail (106).

An identical pattern emerges with DP-internal *only*. (107) entails (108) so long as the existence presupposition of *only* is satisfied with regard to states with more than 30 million and 35 million inhabitants. (109) entails (110) if an entity satisfying the description *book in the library written by Gogol* exists.

(107)   The only state with more than 30 million inhabitants is California.

(108)   The only state with more than 35 million inhabitants is California.

(109)   The only book in the library written by a Russian is already checked out.

(110)   The only book in the library written by Gogol is already checked out.

Both *only*s are Strawsonian downward-entailing NPI licensers.

7.4   Cross-linguistic perspective

A different strategy for evaluating the plausibility of a unified account of the two usages of *only* is to see whether other languages have them as the same lexical item.

DP-internal *only* is translated as *edinstvennyj* in Russian. Adverbial *only* corresponds to a different lexical item, *tol'ko*:

(111)   Tol'ko studenty prišli.
         only   students came

         'Only the students came.'

The same lexical distinction between adverbial and DP-internal *only* is made in Chinese (Shizhe Huang, p.c.), Spanish and German (McNally, 2008). On the other hand, French uses the same word, *seul*:[13]

(112) Seuls les étudiants sont venus.
       Only the students are   came

       'Only the students came.'

(113) Julia a   écrit   le seul bon essai.
       Julia has written the only good essay

       'Julia wrote the only good essay.'

The cross-linguistic evidence on the lexical identity of the two *only*s is mixed and does not clearly support either a unified or a distinct account. However, the range of properties that DP-internal and adverbial *only* share suggest that a unified account is feasible, and at any rate my analysis of DP-internal *only* does not seem to be inconsistent with one.

8   Conclusion

On the basis of evidence from English and Russian, I have proposed a theory of *only* NPs in which *only* presupposes existence and asserts uniqueness, and *the* is a semantically vacuous determiner, rather than the definite article. This theory is able to explain the ambiguity of argumental *only* NPs in English and the non-ambiguity in Russian. Compared to Coppock and Beaver (2015), it has the advantage that it is compatible with uniqueness theories of definiteness.

There are several promising avenues for future research. More work ought to be done on the relationship between adverbial and DP-internal *only*. Section 7 showed that a unified account of the two usages is not out of the question, but such an account has yet to be formulated in detail. Examining whether the two words are lexically identical in a greater range of languages would also be fruitful.

The evidence in this paper is restricted to English and Russian. Whether or not *only* and definiteness interact unexpectedly in other languages remains to be seen. French, which like English has articles and no lexical distinction between adverbial and DP-internal *only*, is an especially good candidate for further investigation. All else being equal, one would expect to see the same absence of a uniqueness presupposition with *only* NPs in French as in English.

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[13]I thank Maëlys Glück for this data. French also has an adverb *seulement*, morphologically derived from *seul*, which corresponds to some instances of adverbial *only* in English.

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