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# Adversative *only* is only *only*[1]

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**Abstract.** The focus particle *only* can be used as a sentential connective, conveying a contrast between its two propositional arguments. This paper provides the ingredients required to unite this *adversative* use of *only* with its exclusive use. We argue that adversative *only* is just exclusive *only* that associates with a full CP and therefore scopes above CP-level operators. We motivate a CP-level informativity operator that enforces a non-triviality condition on utterances and determines a CP's rhetorical function in discourse, and show that its interaction with CP-adjoining *only* can give rise to the adversative inference described in the literature.

**Keywords:** *only*, adversativity, focus, informativity, triviality.

## 1. Introduction

In his seminal work on Modern English Grammar, Jespersen (1949) noticed that the focus particle *only* can be used as a sentential connective indicating "a limitation of what has just been said," as illustrated in (1). In recent work, von Fintel and Iatridou (2019) expand the scope of investigation of this use of *only*, which they term *adversative only*. They observe that this pattern is very widespread crosslinguistically, presenting Greek and German counterparts to Jespersen's English examples (2)-(3).

(1) a. Bill is nice, only he talks too much. (Jespersen 1949)
b. The flowers are lovely, only they have no scent. (Brinton 1998)

(2) ine kalos anθropos, mono (pu) milai poli
is good person, but (C) talks much
'He's a nice person, only he talks too much.'

(3) er ist sehr nett, dass er zuviel redet
he is very nice, C he too-much talks
'He's a nice person, only he talks too much.' (von Fintel and Iatridou 2019)

In their discussion of these cases, von Fintel and Iatridou (2019) note that sentences that make use of this *only*-connective convey, intuitively, that the sentence succeeding *only contrasts* with some salient proposition which the sentence preceding it *supports* (a formal characterization of the notions of *support* and *contrast* is proposed later in the paper; for now, we use these notions intuitively as relations strictly weaker than *entail* and *contradict*, respectively). For instance, in Jespersen's original example in (1a), the sentence succeeding *only* expresses the proposition *that Bill talks too much*. This proposition contrasts with the salient proposition *that Bill is nice*, which is expressed (and thus trivially supported) by the sentence preceding *only*.

At first blush, the adversative use of *only* seems quite distant from its use as a focus particle expressing exclusivity, exemplified in (4). A standard analysis of exclusive *only*, provided in (5), argues that *only* is a focus-sensitive propositional operator that presupposes the truth of its

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propositional argument (i.e., its *prejacent*) and asserts that no other proposition in a restricted, well-defined set of alternatives to its prejacent is true (Horn 1969; Rooth 1992).

(4) Only Bill came to the party.

(5) $[\![only]\!] = \lambda p.\lambda w : p(w) = 1.\ \forall p' \in \mathscr{ALT}(p)\ [p \not\subseteq p' \rightarrow p'(w) = 0]$

In principle, we can entertain two hypotheses that relate the meaning of exclusive *only* (4) to that of adversative *only* (1):

- **Hypothesis #1**: *only* is ambiguous between its exclusive and its adversative use.
- **Hypothesis #2**: The lexical contribution of *only* is identical in both its exclusive and its adversative use, and external factors are responsible for the differences in meaning.

Hypothesis #1 has recently been defended by Davis and Winterstein (2022), who argue that the meanings of adversative and exclusive *only*, while distinct, are nevertheless diachronically related. A notable weakness of this argument is that it cannot seem to explain the widespread crosslinguistic occurrence of this use of *only*. Another argument in favor of hypothesis 2, given in von Fintel and Iatridou (2019), is that adversative *only* shares a core meaning component with exclusive *only*: it also introduces an exclusivity inference (6). This inference sets adversative *only* apart from other adversative connectives like *but, yet* and *although*, that do not convey that the proposition expressed by their second conjunct is the *only* one that contrasts with their first conjunct, as exemplified by the contrast in (7).[2]

(6) Bill is nice, only he talks too much.
$\rightsquigarrow$ The only limitation/exception to Bill's niceness is that he talks too much.

(7) a. Bill is nice, only he talks too much... ??Furthermore, he gets impatient quickly.
b. Bill is nice, but he talks too much... Furthermore, he gets impatient quickly.

If we can provide a single lexical entry for *only*'s adversative and exclusive uses, von Fintel and Iatridou's observation would simply fall out as a consequence of this unification. The goal of this paper is thus to cash-out this intuition and develop the ingredients required for a unified account of adversative and exclusive *only*. In a nutshell, we suggest that adversative *only* is simply an occurrence of exclusive *only* (5) taking scope over a full CP, and consequently over CP-level operators that effectively restrict *only*'s alternatives. In particular, we claim that when *only* outscopes a CP, it scopes above an *informativity* operator which adjoins to CPs and determines the relation they bear to the question under discussion. It is the scopal interaction between (standard, run-of-the-mill exclusive) *only* and our informativity operator that gives rise to the adversativity component of the meaning of sentences like (1).

Note that if we are correct, then calling the instances of *only* in (1) *adversative only* is misleading, as it suggests that these are occurrences of a distinct type of *only*, that carries an adversative inference as part of its meaning. On our analysis, the source of the adversative inference is not *only* itself. In fact, a key feature of our analysis is that it correctly predicts the existence of another use of wide-scope *only*, which does not introduce an adversative inference. We therefore adopt the more neutral term *CP-level only* to refer to the use of the focus particle in (1). We

[2]Davis and Winterstein contest von Fintel and Iatridou's empirical claim that adversative uses of *only* introduce an exclusivity inference; see our response to their objection in footnote 5.

also, going forward, refer to garden-variety uses of *only* as in (4) as *regular only*, as the term *exclusive only* for these uses suggests that CP-level *only* is not exclusive, contra the main claim in this paper.

The paper is structured as follows: In section 2 we review further observations from von Fintel and Iatridou (2019) about the adversative inference of CP-level *only* that will be relevant to our analysis. Section 3 motivates the introduction of informativity operators. In section 4 we provide our analysis of sentences with CP-level *only*, illustrating how the adversative inference results from the interaction of *only* and an informativity operator. We discuss a prediction of our account, that we expect to find CP-level uses of *only* without an adversativity inference, in section 5. The analysis crucially makes use of the notions of *support* and *contrast*, which are treated as primitive notions until section 6, where they are afforded a formal definition within a probabilistic QUD model of discourse. Section 7 briefly addresses the status of *only*'s prejacent in sentences with CP-level *only*: in some, it seems to be at-issue, while in others it seems to be presupposed. Section 8 concludes and highlights issues left for future research.

## 2. The adversative inference of CP-level *only*

We paraphrased the adversativity inference of sentences with CP-level *only* as in (8), following von Fintel and Iatridou (2019). This is familiar from the literature on other adversative connectives (Anscombre and Ducrot 1977; Winter and Rimon 1994; Umbach 2005; Winterstein 2012; Toosarvandani 2014), and suggests that three propositions are involved in the meaning of an adversative sentence: the two propositions expressed in the sentence, $[\![\phi]\!]$ and $[\![\psi]\!]$, and some other salient proposition $p$.

(8) '$\phi$, *only* $\psi$' conveys that $[\![\psi]\!]$ *contrasts* with a salient proposition $p$ that $[\![\phi]\!]$ *supports*.

The salient proposition $p$ that also configures in the adversative inference is not necessarily distinct from *only*'s prejacent in sentences with CP-level *only*. In fact, in Jespersen's original example (9), $p = [\![\phi]\!]$, as the proposition that is supported by $[\![\phi]\!]$ (9a) and that contrasts with *only*'s prejacent $[\![\psi]\!]$ (9b) is the proposition that Bill is nice (9c). However, $p$ can differ from $[\![\phi]\!]$. Consider (10) from von Fintel and Iatridou, for instance. When uttered in a discussion about whether we should buy some specific house, (10) conveys that the nice location of the house supports us buying it, while its physical state contrasts with us buying it. The salient proposition relative to which the two propositions in the sentence (10a)-(10b) are in opposition to each other, then, is the proposition that the house is worth buying (10c); i.e., $p \neq [\![\phi]\!]$.

(9) Bill is nice, only he talks too much.
   a. $[\![\phi]\!] = \lambda w$. Bill is nice in $w$
   b. $[\![\psi]\!] = \lambda w$. Bill talks too much in $w$
   c. $p = \lambda w$. Bill is nice in $w$

(10) The house is in a good location, only it's very dilapidated.
   a. $[\![\phi]\!] = \lambda w$. the house is in a good location in $w$
   b. $[\![\psi]\!] = \lambda w$. the house is very dilapidated in $w$
   c. $p = \lambda w$. the house is worth buying in $w$

Adding the adversative inference to the exclusive one, we can paraphrase the meaning of sentences with CP-level *only* as in (11). Our goal is to motivate the ingredients required to derive

this inference from such sentences while keeping *only* unambiguously exclusive. To do so, we need to venture into a discussion of informativity next.

(11) '$\phi$, *only* $\psi$' conveys that $[\![\psi]\!]$ *contrasts* with a salient proposition $p$ that $[\![\phi]\!]$ *supports*, and that no other relevant, true proposition contrasts with $[\![\psi]\!]$.

## 3. Informativity operators

In a QUD model of discourse, every utterance is made with respect to a *question under discussion* that partitions the set of worlds compatible with what discourse participants take for granted (Roberts 2012). A simplified model, i.e., an ordered pair $\langle c, \mathcal{Q}\rangle$, is formally defined in (12). In this framework, the *non-triviality condition* in (13) is imposed on any contribution to the discourse, requiring declarative utterances to express an *informative* proposition relative to $\mathcal{Q}$. An obvious question is what is required for a proposition to be informative relative to a partition $\mathcal{Q}$; a first pass at an answer is provided in (14).

(12) A QUD model of discourse is a pair $\langle c, \mathcal{Q}\rangle$, such that:
- a. $c = \{w : w$ is compatible with the *common ground*$\}$ (Stalnaker 1978, 2002)
- b. $\mathcal{Q}$ is a *partition* over $c$, i.e., a set of propositions $q_1, ..., q_n$ such that:
  - (i) $\mathcal{Q} = \{q_1\} \cup \{q_2\} \cup ... \cup \{q_n\}$
  - (ii) $c = q_1 \cup q_2 \cup ... \cup q_n$
  - (iii) $\forall i \leq n\ [q_i \neq \varnothing]$
  - (iv) $\forall i, j \leq n\ [i \neq j \rightarrow q_i \cap q_j = \varnothing]$

(13) **Non-triviality condition:** Every declarative utterance in discourse must denote an *informative* proposition relative to $\mathcal{Q}, c$.

(14) **Informativity (first pass):** A proposition $p$ is *informative* relative to a context $c$ and a partition $\mathcal{Q}$ only if $\exists q \in \mathcal{Q}$ s.t. $q \cap p = \varnothing$.

According to (14), an informative utterance relative to the QUD is one whose corresponding proposition rules out at least one answer to the QUD. Under this definition of informativity, the condition in (13) on admittance of utterances in discourse is correctly predicted to rule out the discourse in (15), given that the uttered sentence does not bear on the question asked (we assume that at least in this case, the question asked is the QUD).

(15) Q: Who won the race?
A: #It's getting colder this week.

But the definition in (14) has a problem: as pointed out by von Fintel and Heim (2011), it fails to account for the felicity of the discourses in (16)-(17). Our first pass at defining informativity predicts (16) to be infelicitous because the declarative utterance in this discourse does not directly bear on, and thus does not rule out any possible answer to its respective question. The eventuality of Adele grinning on her way to the locker room is logically compatible both with her having won and with her having lost the race; of course, her grin might be indicative of a victory, but perhaps she is just a graceful loser? Similarly in (17), Mira having entered without a rain jacket does not rule out the possibility that it is, in fact, raining.

(16) Q: Who won the race?
A: I saw Adele grinning on her way to the locker room.

(17) Q: What's the weather?
A: Mira came in without a rain jacket. (von Fintel and Heim 2011)

Intuitively, the reason these discourses are felicitous, despite involving utterances that do not express informative propositions given (14), is that the replies in each case *support* or *contrast* an answer to the question under discussion. The utterance in (16) supports the answer *Adele won the race*. The utterance in (17) *contrasts* with the answer *it's raining*. To accommodate the felicity of (16)-(17), we modify our definition of informativity as in (18), using the notions of *support* and *contrasts*. We do propose a formal definition of these notions in section 6, but for now we treat them as primitive relations with the axioms in (19), relying on the reader's intuitive ability to make sense of them.

(18) **Informativity (second pass):** A proposition $p$ is *informative* relative to a context $c$ and a partition $\mathscr{Q}$ iff there is a salient $A \in \mathscr{Q}$ s.t. $p$ supports or contrasts with $A$.

(19) For any propositions $p, q$:
a. If $p \subseteq q$, then $p$ supports $q$
b. If $p \cap q = \varnothing$, then $p$ contrasts with $q$

For reasons that will imminently become clear, we suggest that the condition in (13) requiring declaratives to express informative propositions be enforced by a dedicated syntactic operator. The operator, which we call INFORM, adjoins to declarative CPs and returns undefinedness if they denote a non-informative proposition relative to $\mathscr{Q}$; i.e., a proposition that does not *support* or *contrast* with a salient answer to $\mathscr{Q}$. The lexical entry for this operator is provided in (20).

(20) $$[\![\text{INFORM}]\!]^{A,\mathscr{Q},c,g} = \begin{cases} \lambda i \lambda p.\ p \textit{ supports } A.\ p & \text{if } i = 1 \\ \lambda i \lambda p.\ p \textit{ contrasts } A.\ p & \text{if } i = -1 \end{cases}$$

In addition to the familiar parameters, context $c$ and assignment function $g$, the operator is interpreted relative to two other parameters to $A, \mathscr{Q}$, where $A$ is a proposition that is a salient answer to $\mathscr{Q}$. It takes as arguments two elements: a free variable $i$, ranging over the set $\{1, -1\}$, and a proposition $p$. Given these ingredients, INFORM introduces a presupposition that its propositional argument $p$ *supports* or *contrasts* with $A$, depending on the value of $i$.

Given our modified definition of informativity, to determine whether an utterance satisfies the non-triviality condition of the QUD framework (13), we must evaluate it relative to a salient answer to the QUD. The idea that utterances are evaluated relative to another salient proposition is not new; in fact, it is a central tenet of the framework of *argumentation within language* (Anscombre and Ducrot 1983; Winterstein 2012; Davis and Winterstein 2022). In that framework, interpretation of an utterance $\phi$ is made relative to an *argumentative goal*, such that accepting the content expressed by $\phi$ raises the credence in that argumentative goal.

We therefore borrow argumentation theoretic terminology here, and will henceforth refer to $A$, the propositional parameter of INFORM as the *argumentative goal* of $p$, the propositional argument of INFORM. We will also refer to $i$, the index argument of INFORM that determines whether $p$ supports or contrasts with $A$, the *argumentative polarity* index of $p$, or $p$'s *polarity*

*index* in short.[3] With this new operator as part of our syntax, we can now turn to our analysis of sentences with CP-level *only*.

## 4. Analysis

### 4.1. The structure of adversative *only* sentences

We argue that sentences of the form '$\phi$, *only* $\psi$' involve implicit coordination of two CPs, one of which is outscoped by regular *only*. That it is a constituent as large as CP that is outscoped by *only* is evident when the complementizer slot of the sentence under *only* is overtly realized. While English does not generally allow overt realization of that complementizer, Hebrew and Greek do. When realized, the complementizer must linearly follow *only* (21)-(22). The same fact can be demonstrated in English as well, if we embed a declarative sentence with Aux-to-C movement under CP-level *only*. The sentence in (23) involves *negative inversion* – the auxiliary verb is fronted under a sentence-initial negative element, in an operation standardly assumed to be a manifestation of Aux-to-C movement (cf. Adger (2003)), and thus indicates a full CP below CP-level *only*.

(21) a. hu neχmad, ʁak ⌈ʃe-⌉ hu medabeʁ yoteʁ midai
he nice only COMP- he talk too much
'He's a nice person, only he talks too much.'

b. ha-bayit bemikum tov, ʁak ⌈ʃe-⌉ hu mamaʃ yaʃan
the-house in.location good, only COMP- he very old
'The house is in a good location, only it's very old.' (Hebrew)

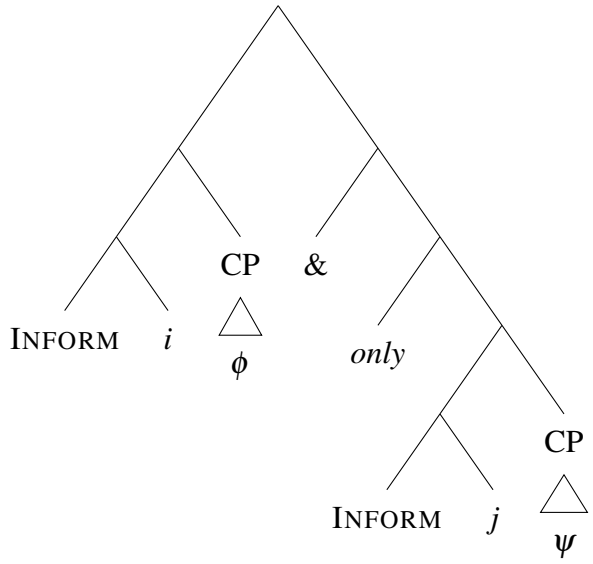
(22) ine kalos anthropos, mono ⌈pu⌉ milai poli
is good person only COMP talks much
'He's a nice person, only he talks too much.' (Greek)

(23) Bill is nice, only never does he visit his parents for more than a few minutes.

There is an important implication for *only* scoping above a full CP. In a system like ours, which syntacticizes the non-triviality condition in the form of a mandatory INFORM operator at the edge of declarative CPs – this entails that CP-level *only* outscopes INFORM, and sentences with CP-level *only* thus have the schematic coordination structure in (24).

[3]We thank Kai von Fintel for introducing us to the literature on argumentation theory and for suggesting the idea of argumentative polarity.

(24)




4.2. The interaction of *only* and INFORM

Let us take stock of what has been done so far. We postulated that the informativity requirement on declarative utterances is enforced by an operator, INFORM, that resides at the edge of CPs. This operator adds a presupposition that its propositional argument is informative with respect to its contextual parameters. We further hypothesized that being informative means to *support* or *contrast*, in the argumentative sense, with a salient answer to the QUD. Finally, we argued that in the cases of CP-level *only* discussed above, *only* takes scope above INFORM. In this section, we show that those assumptions are enough to account for the adversative inference of sentences with CP-level *only* without stipulating a lexical ambiguity.

To understand the interaction between *only* and the presupposition that INFORM adds to the semantics, we first have to understand the general projection pattern of presuppositions in the scope of *only*. Empirically, the proposition *only(p)* is judged as acceptable whenever $p$ is true, and at least some $q \in \mathscr{ALT}(p)$ is defined (i.e. its presupposition is met by the conversational common ground). In that case, *only(p)* is judged as true if every $q \in \mathscr{ALT}(p)$ is either false or undefined. In other words, the presupposition of $p$ both projects (since $p$ is presupposed to be true), and restricts the range of alternatives *only* negates (since the alternatives that are asserted to be false are only the ones whose presupposition is satisfied). This is demonstrated in (25)-(26).

(25) a. Only $[\text{Adele}]_F$ ate an apple.
b. **Asserts:** $\forall x \in \mathscr{D}_e : x \neq Adele \rightarrow \neg ate\_apple(x)$

(26) a. Only $[\text{Adele}]_F$ quit smoking.
b. **Asserts:** $\forall x \in \mathscr{D}_e \cap \{y : y \text{ used to smoke}\} : x \neq Adele \rightarrow \neg quit\_smoking(x)$

In (25), all alternatives are of the form *x ate an apple*, therefore they do not presuppose anything, and the sentence asserts that all of them are false, as we would expect. In (26), on the other hand, the alternatives are of the form *x quit smoking*, and thus they each presuppose that *x used to smoke*. The way this presupposition integrates into the assertion is by restricting the

alternatives in the scope of the universal quantifier, which in our case means restricting the set of individuals that can replace $x$.[4]

We can now calculate the prediction of our system for sentences like (1), or, in general, sentences of the form *'$\phi$, only $\psi$'*. Recall that we assigned these sentences the implicit coordination structure in (24). Importantly, to interpret this structure we need to assign values to the argumentative polarity indices $i$ and $j$. We argue that any assignment in which $i = j$ will lead to a contradictory meaning, and is thus not a possible assignment. Let us assume for simplicity that $i = 1$ (the argument in the case of $i = -1$ is identical). We start by calculating the meaning of each conjunct in the structure in (24). As shown in (27), the first conjunct presupposes that $[\![\phi]\!]$ supports $A$, and asserts that $[\![\phi]\!]$ is true. The second conjunct presupposes both that $[\![\psi]\!]$ is true and that $[\![\psi]\!]$ supports $A$, and asserts that no other proposition in $\mathscr{ALT}([\![\psi]\!])$ that supports $A$ is true (28). We assume that presuppositions project from both conjuncts, so the entire conjunction presupposes the presuppositions of both its conjuncts, and asserts both assertions as in (29).

(27) $[\![\textsc{Inform}(i)(\phi)]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to 1\end{smallmatrix}\right]}$

a. **Presupposes:** $[\![\phi]\!]$ supports $A$

b. **Asserts:** $[\![\phi]\!] = 1$

(28) $[\![\textit{only}[\textsc{Inform}(j)(\psi)]]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to 1\end{smallmatrix}\right]}$

a. **Presupposes:** $[\![\psi]\!]$ supports $A \wedge [\![\psi]\!] = 1$

b. **Asserts:** $\forall p$: $([\![\psi]\!] \not\subseteq p \wedge p \textit{ supports } A) \rightarrow p(w) = 0$

(29) $[\![(24)]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to 1\end{smallmatrix}\right]}(w)$

a. **Presupposes:** $[\![\phi]\!]$ supports $A \wedge [\![\psi]\!]$ supports $A \wedge [\![\psi]\!] = 1$

b. **Asserts:** $[\![\phi]\!] = 1 \wedge \forall p$: $([\![\psi]\!] \not\subseteq p \wedge p \textit{ supports } A) \rightarrow p(w) = 0$

Setting aside for now the division of labor between presupposition and assertion in these utterances, that we return to in section 7, the meaning of the entire construction in the case of $i = j = 1$ is given in (30). It conveys that both conjuncts are true in the evaluation world, that both of them support the argumentative goal $A$, and that no other salient proposition supports $A$ besides the second conjunct. This of course can never be satisfied – given that the first conjunct supports $A$ (and assuming it is not entailed by the second conjunct), it cannot be the case that only the second conjunct supports $A$.

(30) $[\![(24)]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to 1\end{smallmatrix}\right]}(w) = 1$ iff $\begin{cases} [\![\phi]\!](w) = [\![\psi]\!](w) = 1 \\ [\![\phi]\!] \textit{ supports } A \wedge [\![\psi]\!] \textit{ supports } A \\ \forall p\text{: } ([\![\psi]\!] \not\subseteq p \wedge p \textit{ supports } A) \rightarrow p(w) = 0 \end{cases}$

We conclude that to derive a non-contradictory interpretation, the argumentative polarity assignment in sentences with the structure in (24) has to be such that $i \neq j$, namely the polarity

[4] We note that this pattern does not straightforwardly follow from certain theories of presupposition projection. It is strictly weaker than what *strong Kleene* logic (Kleene 1938) predicts, for example. We suggest that this pattern might be the result of local accommodation in the scope of *only*, which collapses the presupposition and the asserted component of the prejacent $p$. We leave the topic at that, since a serious discussion is beyond the scope of this paper.

index in each conjunct must be assigned a different value. The predicted meaning of such an assignment is given in (31)-(34) (again, assuming for simplicity that $i = 1$). It conveys that both conjuncts are true in the evaluation world, that the first conjunct supports $A$ and the second contrasts with $A$, and that no other salient proposition contrasts with $A$ beside the second conjunct. This captures both the adversative inference and the exclusivity that the use of *only* in this kind of constructions conveys.

(31) $[\![\textsc{Inform}(i)(\phi)]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to -1\end{smallmatrix}\right]}$

a. **Presupposes:** $[\![\phi]\!]$ *supports* $A$

b. **Asserts:** $[\![\phi]\!] = 1$

(32) $[\![\textit{only}[\textsc{Inform}(j)(\psi)]]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to -1\end{smallmatrix}\right]}$

a. **Presupposes:** $[\![\psi]\!]$ *contrasts* with $A \wedge [\![\psi]\!] = 1$

b. **Asserts:** $\forall p$: $([\![\psi]\!] \not\subseteq p \wedge p$ *contrasts* with $A) \rightarrow p(w) = 0$

(33) $[\![(24)]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to -1\end{smallmatrix}\right]}(w)$

a. **Presupposes:** $[\![\phi]\!]$ *supports* $A \wedge [\![\psi]\!]$ *contrasts* with $A \wedge [\![\psi]\!] = 1$

b. **Asserts:** $[\![\phi]\!] = 1 \wedge \forall p$: $([\![\psi]\!] \not\subseteq p \wedge p$ *contrasts* with $A) \rightarrow p(w) = 0$

(34) $[\![(24)]\!]^{A,\mathscr{Q},c\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to -1\end{smallmatrix}\right]}(w)$ = 1 iff $\begin{cases} [\![\phi]\!](w) = [\![\psi]\!](w) = 1 \\ [\![\phi]\!]$ *supports* $A \wedge [\![\psi]\!]$ *contrasts* $A$ \\ $\forall p$: $([\![\psi]\!] \not\subseteq p \wedge p$ *contrasts* $A) \rightarrow p(w) = 0 \end{cases}$

To demonstrate this, let us turn back to the example in (10), repeated in (35) below. We assume that the argumentative goal $A$ here is *that the house is worth buying.* Our analysis predicts that (35) will be judged true iff it is true (i) that the house is in a good location, and that it is very dilapidated; (ii) that the house is in a good location supports $A$, and that it is very dilapidated contrasts with $A$; (iii) that the house is very dilapidated is the only salient proposition that contrasts with $A$.[5] This seems to be the meaning we intuitively attribute to this sentence. Given

[5] As mentioned in footnote 2, Davis and Winterstein (2022) reject a unified analysis of CP-level *only* and regular *only*, because (among other things) they contest von Fintel and Iatridou's empirical claim that CP-level *only* encodes the exclusivity inference paraphrased above, providing the example in (i) to illustrate their point.

(i) a. Regular *only*: Ali's research output is very narrow; she only writes about Sartre…#not to mention de Beauvoir.

b. CP-level *only*: Ali is a typical analytic philosopher, only she has a soft spot for Sartre… not to mention de Beauvoir.

Their reasoning is as follows: In (ia), regular *only* takes *Sartre* as its focus associate, presupposes its prejacent (namely, *that Ali writes about Sartre*), and asserts that all propositions derived by replacing *Sartre* with a relevant alternative to are false. Given that *de Beauvoir* is a relevant alternative, the *only*-statement is incompatible with the addition in the *not to mention* phrase, hence its infelicity. Had CP-level *only* introduced a similar exhaustive inference, the *not to mention* addendum in (ib) should have also been infelicitous, contrary to fact.

We agree with the judgement reported in (i), but contest Davis and Winterstein's theoretical conclusion. On our analysis, the sole difference between CP-level and regular *only* is that the former takes scope above a CP, whereas the latter takes a lower scope position, presumably within or at the edge of an IP. The observation in (i) is fully compatible with our analysis, as long as it is assumed that *not to mention* phrases scope below the position of CP-level *only* (i.e., below CP), but above the next highest scope position available for *only* (again, presumably within or right above IP). In that case, the utterances in (i) have the structures in (ii). When *only* is IP-internal (iia), a *not to mention* addendum asserting the truth of one of the alternatives to *only*'s prejacent contradicts the

that a different polarity assignment would yield a deviant meaning, we correctly predict that this is the only reading the sentence in (35) can have.

(35) The house is in a good location, only it's very dilapidated.

## 5. Prediction: *not only*

In our analysis, the adversative meaning of CP-level *only* in constructions like (24) stems from the fact that the two CPs must be assigned different argumentative polarity to avoid contradiction. Crucially, there is nothing inherent in the meaning of *only* that forces this to be the case. We thus predict that whenever *only* can take a CP argument in a coordination structure in which assigning the same argumentative polarity to both conjuncts does not lead to contradiction, we should get a non-adversative readings. As far as we know, the only other construction in which CP-level *only* appears is in sentences of the form '*not only* $\phi$*, (also)* $\psi$', as in (36) below.

(36) a. Not only does he talk too much, he's (also) very hostile.
b. Not only are the flowers lovely, they're (also) good for your health.
c. Not only is the house in a nice location, it's (also) fairly priced.

Let us first show that these examples indeed involve a CP-level *only*. While these examples in English again do not manifest an overt complementizer, they do involve *negative inversion*, i.e., a manifestation of Aux-to-C movement occurring below *only*. That is of course only possible if a full CP is embedded below *only*. Further evidence that *only* in such constructions outscopes a CP comes, again, from languages like Hebrew and Greek (37)-(38), where *only* appears above an overtly realized complementizer.

(37) lo ʁak ʃe- ha-bait be-mikum tov, (gam) hameχiʁ ʃelo hogen
NEG only COMP- the.house in.location good also the.price of.it fair
'Not only is the house in a good location, it's also fairly priced.'

(38) den ine mono oti to spiti ine se orea jitonia, exi epsis ke lojiki timi
NEG is only COMP the house is in beautiful neighborhood, has also and logical price
'Not only is the house in a good neighborhood, it's also reasonably priced.'

---

negation of alternatives induced by *only*. However, when *only* outscopes a CP (iib), a *not to mention* phrase in its scope simply constitutes a part of its prejacent.

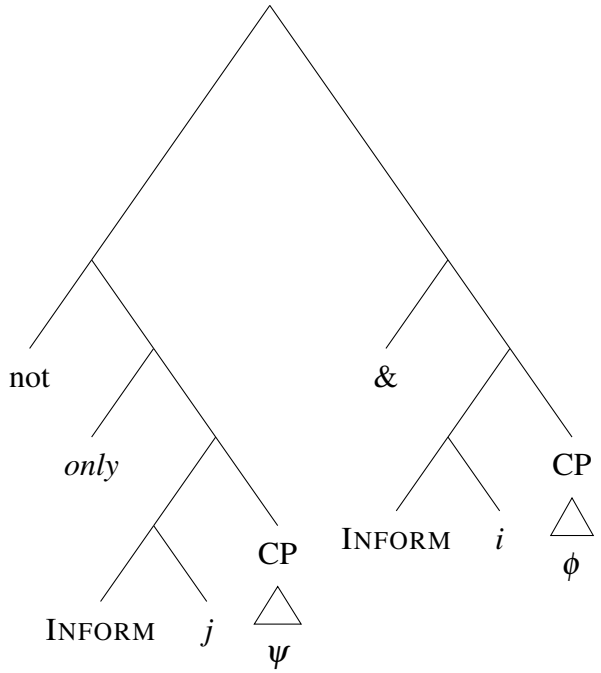
(ii) a. (ia) $\rightsquigarrow$ [[$_{IP}$ Ali [*only* [$_{vP}$ writes about [*Sartre*]$_F$]]] [$_{XP}$ not to mention...]]
b. (ib) $\rightsquigarrow$ [*only* [$_{CP}$ [$_{IP}$ Ali has a soft spot for Sartre] [$_{XP}$ not to mention...]]]

If we reproduce Davis and Winterstein's examples with an addendum that cannot be construed as part of the prejacent of *only*, CP-level *only* seems to behave like an IP-internal regular *only*. This can be achieved by introducing the information in the *not to mention* phrases in (i) with an utterance headed by *furthermore*, which introduces a new sentence. On our analysis of CP-level *only* (iiia) and (iiib) are infelicitous for the same reason, as in both the *furthermore* clause asserts an alternative to *only*'s prejacent right after that alternative was asserted to be false.

(iii) a. Regular *only*: *Ali's research output is very narrow; she only writes about Sartre...#Furthermore, she sometimes writes about de Beauvoir.*
b. CP-level *only*: *Ali is a typical analytic philosopher, only she has a soft spot for Sartre...#Furthermore, she sometimes writes about de Beauvoir.*

We can therefore assign the examples in (36) a structure that is almost identical to that of the original examples (24), the only differences being the order of conjuncts and, importantly, the negation that takes scope above CP-level *only* (39).

(39)




Despite the similar structure, however, their meaning, and specifically the contribution of *only*, are very different in the two constructions – in (36), the adversative inference that *only* introduces in the positive case (1) seems to disappear.

We argue that this difference stems from the fact that a uniform assignment of argumentative polarity to the two conjuncts does not lead to a contradiction in the *not only* cases. To see how this works, consider the result of assigning a uniform polarity, namely the case of $i = j$ in (39). Again, we assume for simplicity that $i = j = 1$. We have already derived the meaning of the constituent $[\![\textit{only}[\textsc{Inform}(j)(\psi)]]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to 1\end{smallmatrix}\right]}$ in (28). To derive the meaning of the first conjunct in (39), we then have to apply negation to that meaning, keeping in mind that presuppositions project from the scope of negation. The result is given in (40). We thus predict (39) to convey the meaning in (41), namely, (i) that both conjuncts are true in the evaluation world; (ii) that both support the argumentative goal $A$; and (iii) that the first conjunct is *not* the only salient proposition that supports $A$. This seems to on par with our intuition about these sentences. The example in (36c), for instance, intuitively conveys (assuming again an argumentative goal along the lines of *we should buy the house*), that the good location of the house supports the argumentative goal, and that there is another proposition that supports that goal, i.e., that the house is fairly priced.

(40) $[\![\textsc{Neg}[\textit{only}[\textsc{Inform}(j)(\psi)]]]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to 1\end{smallmatrix}\right]}$

a. **Presupposes:** $[\![\psi]\!]$ *supports* $A \wedge [\![\psi]\!] = 1$

b. **Asserts:** $\neg\forall p$: $([\![\psi]\!] \not\subseteq p \wedge p \textit{ supports } A) \rightarrow p(w) = 0$

$(\equiv \exists p : [\![\psi]\!] \not\subseteq p \wedge p \textit{ supports } A \wedge p(w) = 1)$

(41) $[\![(39)]\!]^{A,\mathscr{Q},c,\left[\begin{smallmatrix}\text{i}\to 1\\ \text{j}\to 1\end{smallmatrix}\right]}(w) = 1$ iff $\begin{cases}[\![\phi]\!](w) = [\![\psi]\!](w) = 1\\ [\![\phi]\!] \textit{ supports } A \wedge [\![\psi]\!] \textit{ supports } A\\ \exists p : [\![\psi]\!] \not\subseteq p \wedge p \textit{ supports } A \wedge p(w) = 1\end{cases}$

We have thus shown that CP-level *only* does not necessarily come in the adversative flavor. Furthermore, there is evidence that the availability of the adversative reading is linked to the logical consistency of a non-uniform argumentative polarity assignment. This is predicted by our analysis of CP-level *only*. Note that in the *not only* cases, the adversative reading is not only avoidable, but it seems to be entirely unavailable. This of itself is not necessarily problematic for our account, given that many factors control the availability of certain variable assignments, and it might be the case that some independent pragmatic consideration blocks the non-uniform polarity assignment in these cases.

However, it is interesting to think what this consideration might be. One possibility is that shifts in argumentative polarity are generally dispreferred. While shifting the polarity between two conjuncts (or generally in consecutive sentences) is possible, it demands either a specialized item that forces this change (*but, however,* etc.), or a last resort move to avoid a pathological meaning, in the spirit of *the default principle of co-orientation*, discussed in (*a.o.*) Blakemore and Carston (2005); Davis and Winterstein (2022). This is demonstrated in (42).[6] Given that the *not only* cases do not fall into either of those categories, that may explain the unavailability of an adversative inference.

(42) Q: Should we buy this house?
A: #It's in a nice location, and it's very dilapidated.

## 6. Formalizing *support* and *contrast*

We rejected the definition of informativity in (14), repeated in (44), as too restrictive to be the one assumed in a non-triviality condition on declarative utterances (43). Instead, we opted for a weaker definition that makes use of the notions of *support* and *contrast* (45).

(43) **Non-triviality condition:** Every (declarative) utterance in discourse must denote an *informative* proposition relative to $\mathscr{Q}$.

(44) **Informativity (first pass):** A proposition $p$ is *informative* relative to a context $c$ and a partition $\mathscr{Q}$ iff $\exists q \in \mathscr{Q}$ s.t. $q \cap p = \varnothing$.

(45) **Informativity (second pass):** A proposition $p$ is *informative* relative to a context $c$ and a partition $\mathscr{Q}$ iff there is a salient $A \in \mathscr{Q}$ s.t. $p$ supports or contrasts with $A$.

So far, however, we have been treating these notions as primitives, relying on the reader's intuitive ability to understand them.

To make things more concrete, one may adopt any of the proposals in the literature for formalizing these notions (cf. Winterstein, 2012; Spenader and Maier, 2009; *a.o.*). The debate over the correct formalization is in a large part independent from our discussion so far – we only crucially assume the axioms in (19); i.e., that *support* is weaker than entail, and *contrast* is

[6]The badness of this example may be also explained by *Maximize Presupposition!* and it is difficult to tease the two explanations apart.

weaker than contradict. Solely for concreteness, however, we present in this section a way of formalizing these notions in a *probabilistic* QUD model of discourse, with which our analysis can be made compatible.

Winterstein (2012) suggests that the adversative connective *but* requires there to be some argumentative goal, such that its first conjunct is an argument *for* that goal, while its second is an argument *against* it. The notions of being an argument for or against an argumentative goal are construed by Winterstein probabilistically, following Merin (1999). Simply put, $p$ is an argument *for* a goal $A$ if it raises the probability of $A$ in our epistemic model, and it is an argument *against* $A$ if it lowers its probability in the epistemic model.

Let us adopt a proposal in this spirit for the notions of *support* and *contrast* that we make use of in our definition of informativity (45). To do so, we define a *probabilistic* QUD model of discourse (PQUD). A PQUD model is a tuple $\langle c, \mathscr{Q}, P\rangle$. As in (12), $c$ is a context set and $\mathscr{Q}$ a partition of $c$. To these we add a probability distribution $P$, defined in (46), which we think of as assigning to each cell in $\mathscr{Q}$, the likelihood that the actual world is in that cell, given the evidence in the context set $c$.

(46) In a given PQUD model $\langle c, \mathscr{Q}, P\rangle$, $P : D_{s,t} \to [0,1]$ is a function that assigns probabilities to cells in the partition induced by $\mathscr{Q}$ s.t.

$$P(c) = \sum_{q \in \mathscr{Q}} P(q) = 1$$

i.e., $P$ is a proper distribution over $c$.

We can now define the notions of *support* and *contrast* in terms of the conditional probability of an argumentative goal given a proposition (cf. van Rooij and Schulz (2019)) and thus revise our definition of informativity and of the INFORM operator as in (47)-(48).

(47) **Informativity (final):** $p$ is *informative* relative to $\langle c, \mathscr{Q}, P\rangle$ iff there is a salient answer $A \in \mathscr{Q}$, s.t. $\underbrace{P(A|p \cap c) > P(A|c)}_{p \text{ supports } A}$ or $\underbrace{P(A|p \cap c) < P(A|c)}_{p \text{ contrasts } A}$

(48) $[\![\text{INFORM}]\!]^{A,\mathscr{Q},c,g} = \lambda i \lambda p \lambda w : i{\cdot}P(A|p \cap c) > i{\cdot}P(A|c).\ p(w) = 1$

The formalization states that a proposition is informative given a common ground if admitting the proposition into the common ground changes the prior probability of the relevant argumentative goal given just the common ground. The polarity index of INFORM determines the direction in which the probability of the argumentative goal is required to change: $[\![\text{INFORM}]\!]^{A,\mathscr{Q},c,g}(1)(p)$ indicates that $p$ (augments the probability of, and thus) *supports* $A$, and $[\![\text{INFORM}]\!]^{A,\mathscr{Q},c,g}(-1)(p)$ indicates that $p$ (decreases the probability of, and thus) *contrasts* with $A$. As mentioned above, nothing in our analysis of CP-level *only* hinges on this conceptualization of argumentative relations, which is proposed here as a more concrete way of thinking about them.

## 7. On the status of *only*'s prejacent

This paper pursues an analysis of CP-level *only* that does not posit an ambiguity with regular *only*. The primary motivation for such an analysis to begin with is the observation in von

Fintel and Iatridou 2019 according to which the use of CP-level *only* introduces an exclusivity inference that is similar to that introduced by regular *only*.

However, von Fintel and Iatridou (2019) also voice an intuition according to which the prejacent of CP-level *only* seems to express at-issue content, while that of regular *only* is presupposed. If correct, then, at least prima facie, this intuition poses a challenge to our attempt at unifying the semantics of CP-level and regular *only*. In fact, the at-issue status of CP-level *only*'s prejacent is cited by Davis and Winterstein (2022) as a consideration against unification; on their analysis, CP-level *only* denotes an operator that encodes an adversativity presupposition, but crucially lacks the exclusivity inference that the operator denoted by exclusive *only* encodes.

Note that determining whether the prejacent of CP-level *only* is at-issue or not is no trivial matter, since sentences with CP-level *only* cannot be embedded in most environments. Specifically, they seem unacceptable when embedded in environments that are traditionally used to test presupposition projection, like the scope of a downward-entailing predicate or the antecedent of a conditional (49).[7]

(49) a. #I don't think that he's a nice man, only he talks too much.
b. #If the house is in a good location only it's very dilapidated, we shouldn't buy it.

One standard diagnostic for presuppositionality that does not use embedding is von Fintel's (2004) *hey, wait a minute!* test. Applying it to our cases here seems to yield a result which is on par with the intuition expressed by von Fintel and Iatridou (2019): the infelicity of B's response in the example in (50) indicates that the proposition *that he talks too much* is not presupposed.

(50) A: He's a nice man, only he talks too much.
B: # Hey, wait a minute! I didn't know he talked too much!

While this indeed posits a challenge to theories that attempt to unify the different occurrences of *only*, it is part of a more general phenomenon; the status of *only*'s prejacent has long been subject to debate precisely because, as pointed out by a number of authors, that prejacent failes to exhibit the hallmarks of presuppositions in certain environments (see, e.g., discussion in Roberts 2006; Ippolito 2007; Crnič 2022 and references therein). The empirical picture regarding the status of *only*'s prejacent is complex as it is, and thus the pattern exhibited by CP-level *only* does not seem to us to be a devastating argument against a unified analysis, as much as it is an addition to an already complicated empirical landscape.

Note, also, that while the prejacent of CP-level *only* seems at-issue in positive CP-level *only* sentences (1), the intuition with respect to our *not only* cases (36) is an opposite one: for these utterances to be felicitous, the prejacent of CP-level *only* should be taken for granted. This again can be shown by using the *hey, wait a minute!* test: B's response in (51) is felicitous, indicating that *only*'s prejacent is indeed presupposed in this case. This fact renders the presupposition projection patterns of CP-level *only* even more intriguing – the division of labor

[7]This is a curious fact in and of itself, which might be explained on our account by the lack of local informativity constraints on non-matrix CPs. If *only* does not have in its scope any INFORM operator that restricts the set of alternatives it negates, the meaning will inevitably be contradictory, for the same reason that it is contradictory with uniform argumentative polarity. Sentences of the form '$\phi$, *only* $\psi$' are predicted to assert both that $[\![\psi]\!]$ is true, and that $[\![\psi]\!]$ is the only true proposition.

between presupposition and assertion in the so-called *adversative only* cases seems to differ from both basic occurrences of regular *only* (e.g., (4)) and CP-level *only* that is embedded under negation.

(51) A: Not only does he talk too much, he's also very hostile.
B: Hey, wait a minute! I didn't know he talked too much!

Rejecting the unification hypothesis in favor of an ambiguity analysis on the basis of the status of the prejacent, then, should lead one to conclude that *only* is actually three-way ambiguous. This three-way ambiguity seems unavoidable given the reported intuitions, as one cannot unify regular *only* with the CP-level *only* in our *not only* sentences without assuming some notion of argumentative polarity playing a role in restricting the set of alternatives that *only* operates on. Had *only*'s scope in the *not only* cases been unrestricted by our informativity operator, we would predict that any two true propositions could be conjoined in this construction (#*Not only is he a nice man, he (also) talks too much*); for any two utterances $\phi$, $\psi$, if the truth of $\phi$ is taken for granted, asserting the truth of $\psi$ makes *not only* $\phi$ true. On the other hand, if the adversative inference of the '$\phi$, *only* $\psi$' cases is lexicalized into the meaning of *only*, this also cannot be the *only* used to account for our *not only* cases, where no adversativity inference is observed.

Granted, the at-issue status of *only*'s prejacent in $\phi$, *only* $\psi$, and its seeming non-at-issueness in *not only* $\phi$, *(also)* $\psi$, present us with a curious pattern for which we cannot offer an explanation at this point. But this unexpected division of labor between presupposition and assertion (i) could constitute an argument from Occam's razor against a non-unified account, which requires a proliferation of different *only*s to account for it; and (ii) can be viewed as instantiating a more general problem in the semantics of *only*, rather than an issue restricted to CP-level *only*.

## 8. Conclusion

This paper is concerned with sentences of the form '$\phi$, *only* $\psi$', in which *only* surfaces linearly where a sentential connective would usually appear. We show that these are instances in which syntactically, *only* takes scope above a CP constituent, and argue that semantically it is still just the familiar, run-of-the-mill exclusive focus particle. Our approach, which unifies this use of *only* with its regular use as an exclusive, contrasts with a lexical ambiguity approach that posits two *only*s in the lexicon (e.g., Davis and Winterstein 2022).

What seems to set CP-level *only* apart from regular *only* is that it introduces an adversativity inference, indicating that its prejacent contrasts *indirectly* with the utterance preceding it (via some other salient proposition relative to which the argumentative orientation of the contrasting propositions diverges). Rather than encode this inference in a new lexical entry for *only*, we derive it from an interaction between CP-level *only* and an informativity operator, which we argue resides at the edge of CP and determines its argumentative orientation.

Three empirical observations lend support to our unified analysis of *only*. Two were already observed by von Fintel and Iatridou (2019): First, CP-level *only* is not a quirk of a particular language but is quite widespread. Second, this use of *only* seems to carry an exclusivity inference similar to that of the familiar IP-internal *only*. Finally, we further observe here other uses of *only* in conjunctive sentences that can also be shown to reside, syntactically, above CPs, but that lack adversative inferences. These are uses in examples of the form '*not only* $\psi$, *(also)* $\phi$'.

Given that our unification account does not encode adversativity into the semantics of CP-level *only* to begin with, it is well-equipped to account for the absence of it in such examples.

One problem that remains unaddressed by our account relates to the division of labor between presupposition and assertion in the meaning of CP-level *only* sentences. While we predict that the asserted content of the proposition adjacent to *only* should be presupposed by the entire conjunction, the facts are more complicated: in the *not only* cases, it is indeed presupposed, while in the non-negated cases it is part of the at-issue content. We acknowledge this discrepancy as an issue left for future research.

Finally, we note that the range of phenomena investigated by von Fintel and Iatridou (2019) in relation to adversative *only* is broader than the scope of this paper. We point at two of their main observations, which seem like natural paths for extending the analysis presented here in future research. First, von Fintel and Iatridou observe that a similar pattern occurs with the particle *except*, as demonstrated in (52), which conveys, like the non-negated CP-level *only* cases, an adversative relation between the two clauses. Given that *except* is not an exclusive, it is not obvious to us at this point whether and how the ingredients proposed in this paper can be used to account for such cases.

(52) He's a nice man, except (that) he talks too much.

Second, von Fintel and Iatridou (2019) point out that CP-level *only* can precede not only declarative sentences, but speech acts like questions and imperatives (53a)-(53b). Curiously, these cases still convey, intuitively, an adversative relation between the two clauses adjacent to *only*, while maintaining the inquisitive/imperative force of the second one.

(53) a. Fine, I'll go to Oleana with you, only where is it?
b. It's raining, only don't use that as an excuse to skip class!

Accounting for this class of phenomena is using the tools developed here is, too, left for future work.

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