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Complementarity over competition in grammatical exhaustification*

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Abstract “Hurford” Disjunctions, which display entailing disjuncts, are generally odd (Hurford 1974). Yet, they improve when the disjuncts are scalemates and the weaker one comes first (Singh 2008a i.a.). This suggests that a silent, local, incrementally constrained strengthening of the weaker disjunct can alleviate infelicity (Fox & Spector 2018 i.a.). Interestingly, when a similar strengthening is overtly realized *via only*, the same disjunctions can be rescued when the weaker disjunct comes second (Singh 2008a). To explain this difference, we assume the existence of a covert presuppositional exhaustifier (*pex*, Bassi, Del Pinal & Sauerland 2021), and “incrementalize” an independently motivated constraint on question answering (Doron & Wehbe 2024). *pex* is then banned from the second disjunct of Hurford Disjunctions due to its presupposition trivializing a local, incremental question raised by the first disjunct. We show *only*’s presupposition does not lead to that sort of trivialization. The constrained distribution of (c)overt exhaustifiers in Hurford Disjunctions is thus not driven by pragmatic competition (as previously argued by Singh 2008a), but instead is explained by the fact such exhaustifiers fulfill subtly distinct conversational goals. This reasoning is shown to extend to variants of the basic Hurford Disjunctions, as well as to “scalar” Sobel Sequences.

Keywords: question under discussion, alternatives, scalar implicatures, exhaustification, incremental processing, redundancy, oddness, disjunction, conditionals

1 Redundancy and (c)overt exhaustification

Disjunctions involving contextually entailing disjuncts tend to be odd (Hurford 1974). In (1) for instance, the *Paris*-disjunct contextually entails the *France*-disjunct.

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(1) a. # Jo studied in **France** or **Paris**. b. # Jo studied in **Paris** or **France**.

Sentences like those in (1) were dubbed Hurford Disjunctions (henceforth **HD**), and the descriptive generalization they appear to follow, Hurford's Constraint (henceforth **HC**). HC will be treated as a primitive throughout this paper.[1] In (1), HC seems active regardless of the ordering of the disjuncts: **weak**-to-**strong** as in (1a) or **strong**-to-**weak** as in (1b). Yet, Gazdar (1979) noted that **weak**-to-**strong** "scalar" HDs, in which the two disjuncts are ordered on a scale of logical informativeness, do not seem to violate HC–see (2a). Singh (2008b,a) later observed that the same does not hold of **strong**-to-**weak** but otherwise equivalent disjunctions–see (2b).[2]

(2) a. Jo read **some** or **all** of the books. b. ?? Jo read **all** or **some** of the books.

Though the contrast in (2) appears subtle, it is supported by preliminary experimental evidence, even with QP-level disjunctions of the form *some of the books or all of them* (Hénot-Mortier 2025a). These "scalar" HDs suggest that whatever mechanism rescues (2a) but not (2b) from a violation of HC needs to be (i) tied to scalar implicatures, i.e. inferences of the form *some* $\rightsquigarrow$ *not all*, and (ii) incremental, favoring **weak**-to-**strong** orderings. Based on this, various approaches (Singh 2008b,a; Fox & Spector 2018; Ippolito 2019; Tomioka 2021; Hénot-Mortier 2023) capture the contrast in (2). All posit the existence of a covert operator *exh* (Fox 2007; Chierchia, Fox & Spector 2009), whose semantics is similar to that of *only*, and which, just like *only*, can be inserted locally at the level of the weaker disjunct, breaking the problematic entailment relation between disjuncts. Additionally, these approaches incorporate an "incremental" condition, whether on the timing/licensing of *exh* (Singh 2008b,a; Fox & Spector 2018), or on alternatives passed to it (Ippolito 2019; Tomioka 2021; Hénot-Mortier 2023). Ultimately, this leads to the parses of (2a) and (2b) in (3), whereby *exh* can be active in the first disjunct (3a) but not the second (3b).[3]

(3) a. Jo read **exh** **some** or **all** of the books.

b. ?? Jo read **all** or **some** of the books.

1 There are many explanatory approaches to this constraint, among which Meyer 2015; Katzir & Singh 2014; Mayr & Romoli 2016; Anvari 2018; Zhang 2022; Haslinger 2024.

2 We make the provisional assumption that linear order determines whether an expression is **strong**-to-**weak** or **weak**-to-**strong**. Though this is consistent with the current data, English disjunctions confound linear and hierarchical precedence. Additional evidence is warranted to further tease apart the influence of linear vs. hierarchical order when its comes to exhaustification.

3 "Active" at least at some crucial point of the derivation. Singh (2008b) in fact predicts *exh* to be fine in the second disjunct of (3a), but assumes HC gets checked *before its insertion*.

However, most of these existing approaches do not provide a fully satisfactory account of the following difference: adding *only* to the weaker disjunct of scalar HDs rescues both the weak-to-**strong** and the **strong**-to-weak variant–see (4).[4] If an *exh*-based analysis of (2) is on the right track, why is *exh* incrementally constrained while its closest overt counterpart, *only*, does not appear to be?

(4) a. ? Jo read **only** some or **all** of the books.
b. Jo read **all** or **only** some of the books.

The rest of this paper addresses this question and is structured as follows. Section 2 briefly presents three existing accounts of (2) which can be extended to (4), but at the cost of relatively stipulative or non-standard assumptions. Section 3 introduces a model of incremental implicit Questions under Discussion (building on Roberts 2012; Büring 2003 i.a.) and incorporates an independently motivated constraint on question answering (Doron & Wehbe 2024) into that model to explain the differential distribution of *exh* and *only* in (2) and (4). Section 4 extends the approach to three related cases: scalar and non-scalar HDs for which an alternative of intermediate strength is salient (Singh 2008a; Fox & Spector 2018), and "scalar" Sobel Sequences (Singh 2008a; Ippolito 2019). Section 5 takes stock and concludes.

2 Previous accounts

There are three main existing approaches to *only*-less (2) and *only*-marked (4) HDs. The first (Singh 2008b) proposes that the asymmetry in (2) results from the fact that HC gets checked *before exh* gets inserted in the second disjunct. This causes (2a) to be checked for a HC violation with *exh* present in the first disjunct, leading to felicity; while (2b) gets checked without *exh* present in the second disjunct, leading to oddness. The specific timing assigned to *exh*-insertion w.r.t. the checking of HC is not expected to extend to overt *only*, causing both HDs in (4) to be evaluated by HC with *only* present–correctly predicting felicity across the board. This approach however, fails to explain why the covert insertion of *syntactic* operators like *exh* should interact with the checking of HC (a *pragmatic* constraint).

The second approach (Singh 2008a), constrains the insertion of *exh* instead of constraining its interaction with HC. It proposes that the distribution of *exh* in (2) results from a local version of *Maximize Presupposition!*, stated in (5).

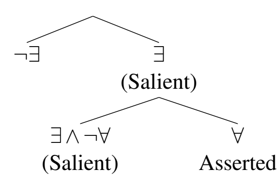
(5) *(Local) Maximize Presupposition!* (Heim 1991; Sauerland 2008; Singh 2011)
Let c be a (local) context. If S_1 and S_2 are two alternatives equivalent in c, and if S_1's presuppositions are met in c and stronger than S_2's, then use S_1.

4 (4a) may feel slightly degraded due to its competition with its *only*-less (and hence phonologically simpler), felicitous counterpart (2a). (4b) is not subject to this kind of competition, because its *only*-less counterpart (2b) is infelicitous.

Singh (2008a) argues that *exh* is disallowed in the second disjunct of (2b), due to its competition with *only*, whose presupposition is met in that local context. To succeed, this approach appeals to a non-standard lexical entry for *only* justifying its competition with *exh* based on (5). Specifically, Singh suggests that *only* asserts its prejacent and presupposes that one alternative to its prejacent is made salient by preceding discourse. This presupposition is met by *only* in the second disjunct of (4b), because *all* is made salient by the first disjunct. Additionally, *exh* and *only* are contextually equivalent in that environment, whose local context entails the negation of the first disjunct, i.e. $\neg\forall$. Based on (5), Singh (2008a) then successfully predicts (2b)'s oddness and (4b)'s felicity.

The last relevant approach, Ippolito (2019), proposes an Economy condition according to which *exh* should not be inserted if it would result in a meaning equivalent to an already salient alternative.[5] Ippolito defines salient alternatives as mother and siblings within the structured set of alternatives (henceforth **SSA**) of an asserted alternative. For instance, a mention of *all* in the first disjunct of a HD is expected to activate the SSA in (6), whose salient nodes are $\exists$ ($\forall$'s mother) and $\exists\wedge\neg\forall$ ($\forall$'s sister). Because $\exists\wedge\neg\forall = exh(\exists)$, *exh* should be disallowed in the second disjunct of (2b). The availability of *only* in (4b) is justified by the fact that the above Economy condition should only apply to *covert* operators–which does not constitute a principled explanation of the difference between *exh* and *only*.

(6) Structured Set of Alternative activated by *all* according to Ippolito (2019).



The approach we will entertain next retains a standard entry for *only*, and appeals to an independently motivated entry for *exh* (*pex*; Bassi et al. 2021). Based on these assumptions, the difference between *pex* and *only* in (2) and (4) will be accounted for without appealing to a form of pragmatic competition between these operators. Instead, we will build on the observation that *pex* and *only* answer distinct questions in matrix contexts, and, by extension, different incremental, implicit questions in embedded contexts. These observations, coupled with a model of incremental implicit questions inspired by Ippolito's SSAs, and an independently motivated constraint on question answering (Doron & Wehbe 2024), captures the data.

5 This can be seen as the "flipside" of Singh (2008a), which claimed *only* to be better based on salience considerations.

3 Capturing *only*-less and *only*-marked scalar HDs

3.1 Core assumptions about overt and covert exhaustifers

We assume *only* presupposes its prejacent and asserts the negation of non-weaker focus alternatives to the prejacent. We also take that covert exhaustification is performed by the means of a presuppositional version of *exh*, dubbed *pex* (Bassi et al. 2021). *pex* asserts its prejacent and presupposes the negation of non-weaker alternatives. This is summarized in (7),[6] and applied to a *some* prejacent in (8), assuming *all* is its only non-weaker, relevant alternative.

(7) a. $[\![\, pex \,]\!] = \lambda p : \bigwedge_{p' \in \mathscr{A}_p \,\wedge\, p \not\models p'} \neg p'.\ p$ b. $[\![\, only \,]\!] = \lambda p : p.\ \bigwedge_{p' \in \mathscr{A}_p \,\wedge\, p \not\models p'} \neg p'$

(8) a. $[\![\, pex\ some \,]\!] = \neg\forall.\ \exists$ b. $[\![\, only\ some \,]\!] = \exists.\ \neg\forall$

The presuppositional nature of *pex* is motivated (among others) by inferences triggered by *some* under another occurrence of *some* and negative factives; as well as oddness-inducing implicatures. Still, *pex*'s presupposition was argued to be easily *accommodated*, i.e. added to the Common Ground if not met in context (Stalnaker 1974, 1978; Lewis 1979; Stalnaker 2002; Von Fintel 2008). Accommodation is defined in (9), and will be shown to interact with questions in principled ways.

(9) *Presupposition Accommodation.* Let S be the set of worlds compatible with the premises of the conversation (Context Set, henceforth **CS**), and A_p an utterance asserting A and presupposing p. If S does not entail p (i.e. contains $\neg p$-worlds), p may get *accommodated* by producing a new CS $S' = S \cap p$–the biggest subset of S entailing p–against which A may then be evaluated.

3.2 Core assumptions about questions and question answering

Building on Hamblin (1958); Groenendijk & Stokhof (1984); Groenendijk (1999) i.a., we take questions to represent partitions of the CS. We also assume that sentences always intend to address a question under discussion (**QuD**; Van Kuppevelt 1995; Büring 2003; Roberts 2012; Ginzburg 2012 i.a.)–explicit or implicit. (10-11) show that covert and overt exhaustifiers are compatible with distinct overt QuDs.[7]

(10) Context: Jo is taking an undergrad NLP class this semester. The class has small weekly assignments, and **Jo will pass iff Jo completes all of them**.

6 These definitions do not prohibit the resulting meaning from being contradictory. Doing so would require Innocent Exclusion (Fox 2007); but the above definitions are enough for our current purposes.
7 Hénot-Mortier (in press) makes a similar point to explain why *pex* is covert and *only* overt.

–Did Jo complete **all** the assignments or not? QuD: $\boxed{\neg\forall \mid \forall}$

–Jo completed { all✓, some✗, only some✓, SOME$^{?}$} assignments

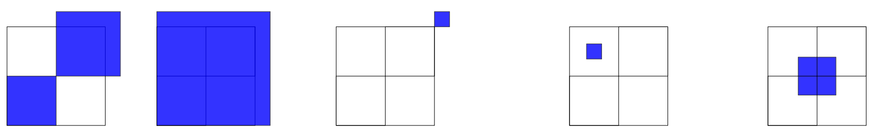
(11) Context: Jo is taking a grad semantics class this semester. The class has larger biweekly assignments, and **Jo will pass iff Jo completes at least one**.

–Did Jo complete **some** assignments or not? QuD: $\boxed{\neg\exists \mid \exists}$

–Jo completed { all$^{?}$, some✓, only some✗, SOME✗} assignments.

To make better sense of the contrasts observed in (10-11), we spell out a few constraints on question answering. For concreteness, we adopt the notion of *Strong Relevance* (Križ & Spector 2020): a proposition is relevant to a question iff its intersection with the CS corresponds to a non-maximal union of the question's cells.[8] Irrelevant propositions can be contradictory (if disjoint with the CS), trivial (if entailed by the CS), overinformative (if they entail a cell), or strongly irrelevant (all other cases). These various configurations are depicted in (12).

(12) Addressing a QuD (partitioned 4-cell Context Set). Assertions shown in blue.



Relevant Trivial Contradictory Overinformative Irrelevant

To the above characterizations, we add an additional constraint incorporating the role of presuppositions, based on Heim (2015); Aravind, Fox & Hackl (2022); Doron & Wehbe (2024): an utterance's relationship to a QuD should be evaluated based on its assertive content, *after* intersecting the CS with potential presuppositions (i.e. after accommodation, whenever needed). This constraint, dubbed *Post-Accommodation Informativity* by Doron & Wehbe (2024), helps explain (10-11). In (10), *all* is obviously relevant to the QuD, while literal *some* is not and covertly *pex*ing it does not help, because it leads to a trivial one-cell $\boxed{\neg\forall}$ QuD after accommodation. *only some* is fine because it leads to a $\boxed{\forall \mid \exists\wedge\neg\forall}$ QuD after accommodating $\exists$, to which the assertion $\neg\forall$ is relevant. Lastly, the relative felicity of *SOME* can be explained by the idea that focus makes $\neg\forall$ at-issue: *SOME* is thus "just" overinformative. Turning to (11), *all* is now overinformative, while literal *some* is now obviously relevant to the QuD. *pex*ing it does not hurt: it leads to a $\boxed{\exists\wedge\neg\forall \mid \neg\exists}$ QuD after accommodating $\neg\forall$, to which the assertion $\exists$ is relevant. *Only some* is degraded because it leads to a trivial $\boxed{\neg\exists}$ QuD after accommodating

8 There exists many other approaches to relevance: Lewis (1988); Büring (2003); van Rooy (2004); Roberts (2012); Hawkins & Goodman (2017); Agha & Warstadt (2020, 2022); Feinmann (2025); Benbaji-Elhadad & Doron (2025); Hénot-Mortier (2024, 2025b).

$\exists$. *SOME*'s infelicity is remains slightly puzzling (as *SOME* should just feel over-informative). In brief, (10) and (11) suggest that *only* and *pex* are devices used to answer distinct overt QuDs, in a way that is captured by theories of informativity and relevance and of their interaction with presupposition accommodation.

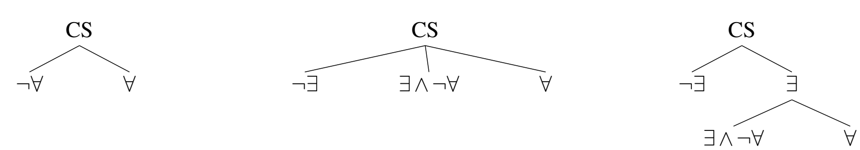
We proceed to argue that this pattern extends to the implicit, incremental QuDs inferred after processing the first disjunct of a scalar HD. Simply put, (4b) is fine because answering (10) with *only some* is fine; while (2b) is odd, because answering (10) with *(pex) some* is odd. Before formalizing these insights, we sketch a model of incremental implicit QuDs.

3.3 Incremental implicit QuDs in disjunctive environments

We propose that assertions such as *Jo read some of the books* evoke the implicit QuD(s) they could felicitously address, and that this process takes place incrementally in complex sentences, e.g. disjunctions. Moreover, building on Büring (2003); Riester (2019); Ippolito (2019); Zhang (2022); Hénot-Mortier (2025c,a) we take that such implicit QuDs form trees. In our case, QuD trees will correspond to nested partitions of the CS, i.e. trees whose root is CS, whose nodes are all subsets of the CS, and such that any mother node is partitioned by the set of its children. This definition was already adopted by Ippolito for SSAs; see e.g. the SSA in (6). We also take that one given assertion may evoke several QuD trees; building on the judgments in (10-11), we then assume that *Jo read all of the books* gives rise to a QuD tree partitioning the CS based on the $\forall$-alternative alone (13a), but also to QuD trees induced by *both* $\exists$ and $\forall$, in a "flat" (13b), or "tiered" (13c) way.[9]

(13) QuD trees evoked by *Jo read all of the books*.

a. "Polar" QuD tree b. "Flat" QuD tree c. "Tiered" QuD tree



What about disjunctions? Disjuncts tend to answer the same QuD (Simons 2001; Westera 2020; Zhang 2022). From a compositional perspective, this implies that the QuD tree of a disjunction should result from the well-formed merger of QuD trees evoked by its constitutive disjuncts (Hénot-Mortier 2025c i.a.). (14) formalizes

9 Which QuD is more likely to be inferred eventually depends on the sentence's focus structure. Also, there may be different candidate QuDs depending on were exactly focus gets assigned. See Hénot-Mortier (2025a), Hénot-Mortier (2025b) or Hénot-Mortier (2025c) for a more formal and systematic definition of these trees.

this, and implies that once the set $\mathbb{T}_A$ of QuD trees evoked by the first disjunct is computed, it is clear that any QuD tree evoked by the entire disjunction should be a "supertree" of a member of $\mathbb{T}_A$, as defined in (15).

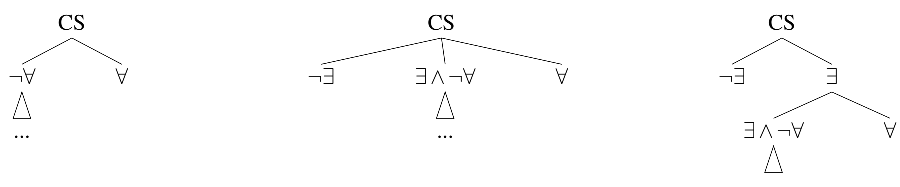
(14) *Disjunctive QuDs.* If $A \vee B$ is disjunctive utterance, Q_A a QuD tree evoked by A, Q_B a QuD tree evoked by B, and if $Q_A \cup Q_B$ is a well-formed nested partition of the CS, then $Q_A \cup Q_B$ is a QuD evoked by $A \vee B$. $\cup$ is defined as union over nodes and branches.

(15) *Supertree.* Let T and T' be two well-formed QuD trees. T' is a (non-strict) supertree of T if T' displays all the nodes and branches T displays. T' may or may not display additional nodes and branches refining T's terminal nodes.

Considering (2b)/(4b), any incremental QuD computed after processing *all or..* in such HDs will then be a supertree of a QuD evoked by *all*; see (16).

(16) "Supertrees" of QuD trees evoked by *Jo solved all of the problems* (triangles denote underspecified subtrees and may be empty).

a. "Polar" supertree b. "Flat" supertree c. "Tiered" supertree



The next section details how the second disjunct, which may involve *pex* or *only*, interacts with the incremental implicit QuD raised by the first disjunct.

3.4 Accommodation on incremental implicit QuDs

Recall that utterances involving *pex*/*only* carry presuppositions which may be easily accommodated. Also recall that answers to overt questions must be informative and relevant *after* presuppositions are accommodated. We now "incrementalize" this last idea to motivate the differing licensing conditions of *pex* and *only* in (2) vs. (4). First, (17) defines accommodation on a *nested* partition of the CS (i.e. a QuD tree).

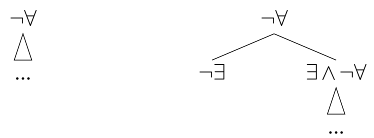
(17) *Presupposition accommodation on a nested partition.* Let T be a QuD tree (nested partition of the CS) and p a presupposition. Accommodating p on T amounts to intersecting all of T's nodes with p, removing resulting empty nodes, dangling or unary branches.[10]

10 More formally, if T is defined by a set of nodes $\mathscr{N}$ and branches $\mathscr{E}$ between pairs of nodes,

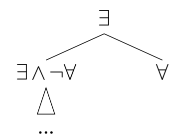
Based on (17), we can define the effect of the presuppositions carried by *pex* ($\neg\forall$) and *only* ($\exists$) on the incremental implicit QuD derived from *all or ...* in (2b) and (4b). This is done in (18) and (19), respectively.

(18) Accommodating *pex some*'s presupposition ($\neg\forall$) on the "supertrees" from (16).

a. "Polar" b. "Non-polar" (flat/tiered)



(19) Accommodating *only some*'s presupposition ($\exists$) on the "supertrees" from (16).



(18) and (19) show that the $\exists$-presupposition carried by *only some* and the $\neg\forall$-presupposition carried by *pex some* "reduce" the incremental QuD raised by the first disjunct (*all*) in different ways. In (18), accommodating $\neg\forall$ removes a lot of the original QuD tree's structure. In (18a) in particular, the only structure that is left is underspecified. This implies that there may not be a clear QuD left for *pex some*'s assertion to address after accommodation. In (19), accommodating $\exists$ retains some crucial structure, in the form of the $\forall$-branch/cell. This leaves a clear QuD for *only some*'s assertion ($\neg\forall$) to address. We proceed to clarify this key intuition, by adapting an existing constraint on the felicitous answering of overt questions.

3.5 Felicitously addressing incremental questions

(20) formalizes the idea that QuDs should not be settled by presuppositions, while (21) adapt (20) to incremental implicit QuDs.

(20) *Post-Accommodation Informativity (Doron & Wehbe 2024).* If S presupposes p and intends to answer a question Q (partition of the CS), S has to be "informative' w.r.t. Q *after* the CS gets updated with p. S is informative w.r.t. Q iff its rules out at least one cell in Q (Roberts's concept of relevance).

(21) *Incremental Post-Accommodation Informativity.* Given a partial LF C evoking a set of possible incremental QuD trees $\mathbb{T}_C$, and a continuation S of C presupposing p, for any[11] QuD tree $T \in \mathbb{T}_C$, S's assertion should rule out a node in the tree obtained by accommodating p on T (following (17)).

then $T \cap p$ (T accommodated with p) is defined by $\mathscr{N}' = \{N \cap p \mid N \in \mathscr{N} \wedge N \cap p \neq \emptyset\}$ and $\mathscr{E}' = \{(N \cap p, N' \cap p) \mid (N, N') \in \mathscr{E} \wedge N \cap p \neq \emptyset \wedge N' \cap p \neq \emptyset\}$. This is in fact equivalent to redefining the nested partition corresponding to the QuD on the CS obtained after standard accommodation.

11 Why should this constraint hold universally over possible incremental QuD trees? After all, it might be enough to have one incremental QuD tree verifying an extension of (20) for the entire disjunction

We first spell out (21)'s predictions for the odd HD (2b). In (2b), the partial LF C obtained after processing the first disjunct has the form *all or ...*, and the set of possible incremental QuD trees $\mathbb{T}_C$ resulting from that partial LF was derived in (16). The relevant continuation S of C is of the form *pex some*.[12] The presupposition p of S is thus $\neg\forall$, and its assertion, $\exists$. (21) then states that $\exists$ (S's assertion) should rule out a node in any tree in are computed in (18). Does asserting $\exists$ rule out a node in each of these trees? This is the case for (18b): $\exists$ rules out the $\neg\exists$-leaf. However, this is not the case for (18a): because this QuD tree is fully underspecified, $\exists$ does not clearly rule out any of its nodes.[13] This triggers a violation of (21) and correctly predicts (2b) to be odd–even with *pex*.

Now turning to the felicitous (4b). The partial LF C, and the set of possible incremental QuD trees $\mathbb{T}_C$ derived from it, are the same as before. The relevant continuation S however, is now of the form *only some*. Therefore, the presupposition p of S is $\exists$, and its assertion, $\neg\forall$. (21) then states that $\neg\forall$ should rule out a node in any tree in (16), updated with $\exists$. The relevant tree is computed in (19), and the assertion $\neg\forall$ obviously rules out the $\forall$-leaf of that tree. (21) is therefore satisfied, and (2b) is predicted to escape oddness, thanks to *only*.

The cases of (2a) and (4a), whereby the weaker disjunct comes first, are even more straightforward. In such cases, C is empty, meaning, there is no incremental QuD tree against which (21) should be checked. (21) is therefore vacuously verified, in turn allowing both *pex* and *only* to rescue (2a) and (4a) from oddness. The next section shows how (21) may successfully cover cases beyond (2) and (4).

4 Extensions

We now show how our model can capture the surprising *absence* (Section 4.1) or *persistence* (Section 4.2) of oddness asymmetries in variants of (2) and (4). It also sketches how (21) could be used in the domain of Sobel Sequences (Section 4.3).

4.1 Distant-Entailing alternatives

Fox & Spector (2018) observed that the contrast in (2) tends to disappear when the scalar alternatives denoted by the two disjuncts (e.g. *some* and *all*) get "separated" by an intermediate salient alternative, e.g. *most*–see (22). (22)'s disjuncts were

to be felicitous. An alternative to this universal phrasing suggested to me by Jad Wehbe, is to assume that the most *salient* incremental QuD tree should be relevantly addressed by the continuation. This would cash out the oddness of (2b) as a kind of garden path effect–see footnote 13.

12 Because having a bare *some* would produce a violation of HC, we must assume that *some* is covertly *pex*ed to give (2b) its best shot.

13 Assuming this incremental QuD tree is the most salient would allow us to reduce the scope and force of the constraint in (21) and see (2b)'s oddness as a garden path–see footnote 10.

dubbed *Distant-Entailing*. The felicity of both (22a) and (22b), even without *only*, suggests that *exh*/*pex* is allowed in the first *or* second disjunct when *most* is salient.

(22) *Context: If Jo reads all of the books, they'll definitely get an A at the test. If they read most but not all, they'll get a B. If they read some but not most, a C. We are wondering which grade Jo will get.*

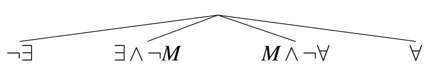
a. Jo read **pex/?only** **some** or **all** of the books.

b. Jo read **all** or ?**pex/only** **some** of the books.

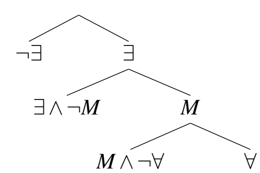
Here is how our approach may capture (22). In (22)'s context, three alternatives are in fact made salient: *some* (∃), *most* (*M*), and *all* (∀). So, whatever incremental QuD gets inferred from (22)'s context (even *before* processing the first disjunct) will most likely involve all three alternatives. (23) details the resulting QuD trees.[14]

(23) QuD trees inferred from the context in (22).

a. "Flat" QuD tree

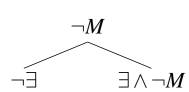


b. "Tiered" QuD tree



Assuming (22a) and (22b) are being rescued by *pex*, one must accommodate *pex some*'s presupposition on the above trees, and check if *pex some*'s assertion remains informative after that. Since *most* is salient in (22), *pex some*'s presupposition becomes $\neg M$. (24) shows the unique QuD tree obtained after accommodating $\neg M$ on the trees in (23); the two original trees collapse into one, as the nodes entailing *M* get "trimmed" by accommodation. The tree in (24) turns out to be properly addressed by *pex some*'s assertion (∃), which rules out the ¬∃-leaf. This line of reasoning holds whether *pex some* occurs in the first or in the second disjunct.

(24) QuD tree inferred from the context in (22), after accommodating $\neg M$.



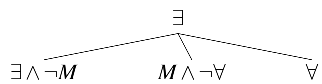
Now assuming (22a) and (22b) are being rescued by *only*, one must accommodate *only some*'s presupposition (∃) on the trees in (23), and check if *only some*'s assertion

14 (23a) is generated by forming a Hamblin partition out of the three salient scalar alternatives *together*. (23b) is generated top-down, based on scalar alternatives of increasing strength, *one at a time*.

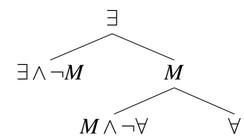
($\neg M$) remains informative after that. (25) shows the QuD trees obtained from (23) after accommodating $\exists$. Both trees in (25) are properly addressed by *only some*'s assertion, $\neg M$, which rules out the $M \wedge \neg\forall$ and $\forall$ leaves. Again, this holds whether *only some* occurs in the first or in the second disjunct.

(25) QuD trees inferred from the context in (22), after accommodating $\exists$.

a. Obtained from (23a):



b. Obtained from (23b):



The success of this approach relies on *most*'s salience, but also on *some*'s salience–cashed out within the structure of QuD trees. Modifying (22) to only make *all* and *most* salient would cause infelicity, in a way predicted by our account.

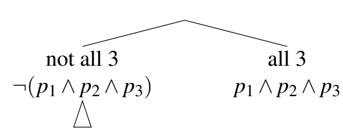
4.2 Non-scalar Distant-Entailing alternatives

Singh (2008a) and Fox & Spector (2018) mention the HDs in (26) as a challenge for their respective accounts of (2). Although (26) displays the same felicity profile as (2)/(4), i.e. a contrast between (26a) and (26b) iff *only* is absent, Singh and Fox & Spector in fact predict *exh* to be *allowed* in the second disjunct of (26b), which in turn predicts the *absence* of the attested contrast. This is essentially because the disjuncts of (26) are not mutual focus alternatives, but yet Distant-Entailing: the implicature of *problem 1* (*neither problem 2 nor problem 3*) *is* contentful, even after processing *all three problems*.

(26) a. Jo solved (only) **problem 1** or **all three problems**.
b. Jo solved **all three problems** or #(only) **problem 1**.

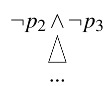
This issue may disappear once QuD structure is considered. Let us focus on (26b): after processing the first disjunct, a reasonable implicit QuD may correspond to whether all three problems were solved. This is depicted in (27). Other QuDs may of course be possible, but the one in (27) will turn out particularly problematic for a *pex*-repair of the sentence; while it will not be so for an *only*-repair.

(27) QuD tree inferred after processing *Jo solved all three problems or ...* (first disjunct of (26b)). p_i refers to problem i.

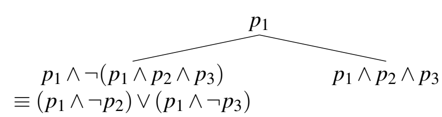


Assuming first a *pex*-repair of (26b), one must accommodate *pex* p_1's presupposition ($\neg p_2 \wedge \neg p_3$) on (27), and check if *pex* p_1's assertion remains informative after that. (28) shows the result of accommodation: it trimmed the $p_1 \wedge p_2 \wedge p_3$-leaf, yielding a fully underspecified tree. *pex* p_1's assertion (p_1), does not definitely rule out any leaf in that tree, violating (21) and causing oddness. Assuming now an *only*-repair of (26b), one must accommodate *only* p_1's presupposition (p_1) on (27), and check if *only* p_1's assertion ($\neg p_2 \wedge \neg p_3$) remains informative after that. (29) shows the tree obtained after accommodation. *pex* p_1's assertion rules out the $p_1 \wedge p_2 \wedge p_3$-leaf in that tree, satisfying (21).[15] The difference between *pex* and *only* in (26) is thus captured.

(28) QuD tree inferred after accommodating $\neg p_2 \wedge \neg p_3$ (*pex* p_1's presupposition) on (27).



(29) QuD tree inferred after accommodating p_1 (*only* p_1's presupposition) on (27).



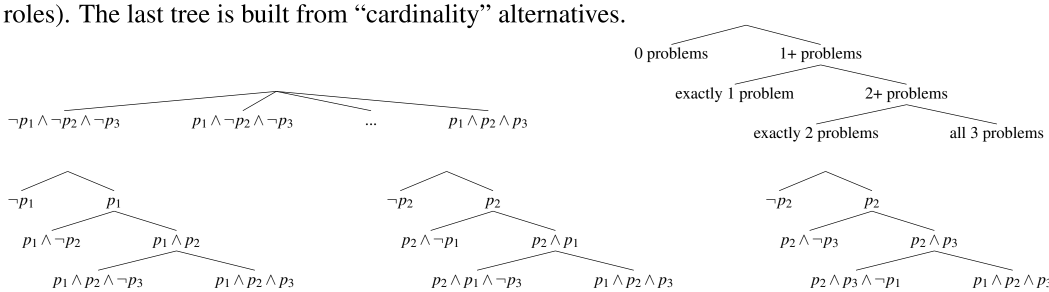
4.3 Sobel Sequences

Sobel Sequences (Sobel 1970; Lewis 1973) are sequences of conditionals featuring entailing antecedents ($p \wedge q \vDash p$) and following the templates in (30). Such sequences were originally used to motivate a variably strict account of conditionals.

(30) a. If p then r but if $p \wedge q$ then $\neg r$. b. # If $p \wedge q$ then $\neg r$ but if p then r.

What happens when, instead of being conjunctively strengthened, the antecedents are scalarly ordered, as in (31)? Singh (2008a) originally observed that such "scalar"

15 Other reasonable QuD trees inferred from the first disjunct of (26b) would make *only* p_1 satisfy (21). Such trees are given below. The first one is isomorphic to the powerset of $\{p_1, p_2, p_3\}$. The next three trees represent all the possible hierarchical arrangements of p_1 vs. p_2/p_3 (which play symmetric roles). The last tree is built from "cardinality" alternatives.



Accommodating p_1 (*only* p_1's presupposition) on these trees always produce trees with a $p_1 \wedge p_2 \wedge p_3$-leaf. *only* p_1's assertion $\neg p_2 \wedge \neg p_3$ will thus always rule out this leaf, satisfying (21).

Sobel Sequences pattern like the scalar HDs in (2)/(4): without *only* in their antecedent, scalar Sobel Sequences *must* start with the conditional whose antecedent is weaker. With *only* in the antecedent, both orderings are fine.[16]

(31) a. If Jo (only) solved **some** problems she'll fail, but if she solved **all** she'll pass.
b. If Jo solved **all** problems she'll pass, but if she #(only) solved **some** she'll fail.

While this pattern was successfully explained by both Singh (2008a) and Ippolito (2019), both accounts rested on the previously mentioned non-standard assumptions. Our approach too requires further assumptions, that are however motivated by Hurford Conditionals (Mandelkern & Romoli 2018). Hénot-Mortier (2025b) captured these challenging datapoints, together with standard HDs, by assuming that conditionals evoke "chained" QuD trees.[17] Specifically, a conditional was taken to evoke a QuD tree corresponding to its antecedent, but where the nodes verifying that antecedent are further subdivided according to a QuD evoked by the consequent. (32) exemplifies this for the first conditional of (31b). The first tree in (32) gets trivialized by *pex some*'s presupposition, violating (21). Besides, no tree in (32) gets trivialized by *only some*'s presupposition, which only trims ¬∃-branches–satisfying (21). In that sense, the conditional QuD trees in (32) interact with (c)overt exhaustifiers just like the trees in (13) did in the case of HDs.[18] Lastly, (31a) is as unproblematic as weak-to-strong HDs: in such sequences (21) gets checked on an empty context C (meaning no incremental QuD trees) and as such is vacuously verified.

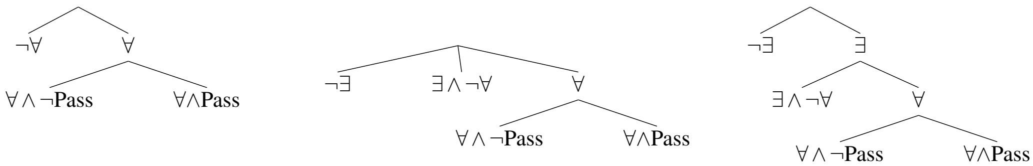
(32) QuD trees evoked by *If Jo solved all of the problems, she'll pass*, obtained from the trees in (13) by subdividing their ∀-leaves into Pass/¬Pass leaves.

16 The similarity between (31) and (2)/(4) (weakly) suggests that (31) may be explained by scalar implicatures rather than a variably strict semantics. Additional evidence favoring this view may come from non-scalarly ordered antecedents that are *not* overtly conjunctive (Danny Fox, p.c.). It appears that Sobel Sequences built from such antecedents appear quite degraded in both orders–see (i). This is unexpected solely under a variably strict approach, while it makes more sense assuming an *exh*/*pex* approach, given that such operators are *not* expected to be at work in (i).

(i) a. ?? If Jo is **French** she's friendly, but if she's **Parisian** she's rude.
b. # If Jo is **Parisian** she's rude, but if she's **French** she's friendly.

17 Enguehard (2021) also entertains this idea to account for presupposition projection in questions.

18 One must however make sure that such trees accurately represent the *incremental* QuD considered after *but* is processed in the sequence, i.e. give reliable cues about the global QuD associated with the entire Sobel Sequence. We think this is a reasonable assumption, since *but* in Sobel Sequences, just like *or* in HDs, conveys contrast, i.e. suggests that the two propositions it conjoins address the same global QuD (Simons 2001; Tomioka 2021). In fact, we believe that replacing *but* with *and* in (31b) restores felicity, even without *only*. This makes sense, given that *and*, unlike *or* and *but*, can introduce brand new subject matters, making the computation of incremental QuDs less systematic.



5 Conclusion

Adopting a grammatical view of scalar implicatures whereby covert exhaustification is the mirror image of *only* w.r.t. the assertion/presupposition divide (Bassi et al. 2021), we showed that the felicity profile of *only*-less and *only*-marked scalar HDs could be captured *modulo* a few extra yet independently motivated assumptions: that complex assertions evoke local, incremental questions, and that such questions, just like overt ones, must be felicitously addressed by upcoming discourse (building on Doron & Wehbe 2024). Under that view, the distribution of (c)overt exhaustifiers in scalar HDs (and beyond) can be explained by a unified constraint, that is not based on pragmatic competition, but instead exploits the fact that (c)overt exhaustifiers achieve subtly different conversational goals. The relative simplicity and unified character of the account constitutes an indirect argument in favor of *presuppositional* exhaustification; had implicatures been at-issue, our QuD-based account would have failed to capture *only*-less HDs. Future work may involve exploring the roles of overt QuDs, indirect implicatures and other connectives in shaping felicity or oddness.[19]

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19 See Haslinger (2024) for relevant discussions and interesting directions.

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Complementarity over competition in grammatical exhaustification

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