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Spreading ignorance*

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Abstract This squib compares two notions of alternatives. On a familiar pragmatic view, alternatives are relevant propositions a speaker could have conveyed instead of, or in addition to, the asserted sentence. On the inquisitive-semantic view, alternatives are part of a sentence's semantic value, typically tied to specific lexical operators, and correspond to maximal ways of supporting that sentence. We compare these notions by examining ignorance inferences (IIs) triggered by disjunctive sentences of varying complexity. We introduce a novel phenomenon, *Ignorance Spreading*, in which a conjunction embedded under disjunction yields IIs about the individual conjuncts. We argue that this phenomenon distinguishes the two notions: an implicature approach can derive the observed inferences if the relevant sub-alternatives are available for pragmatic reasoning, whereas an inquisitive account over maximal inquisitive alternatives undergenerates. We take this to show that an adequate theory of IIs must access structurally available sub-alternatives, not just maximal alternatives introduced by disjunction. We conclude by noting remaining challenges for current theories of IIs.

Keywords: disjunction, conjunction, ignorance inferences, implicatures, inquisitive semantics, alternatives

1 Background

1.1 Ignorance inferences

Disjunctive sentences are well known to give rise to ignorance inferences (IIs). In a context where the question is who has five children, an utterance of (1) suggests

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that the speaker does not know which disjunct is true. Throughout, we use $I_s(\phi)$ as an abbreviation for 'the speaker s is ignorant about ϕ' and $B_s(\phi)$ for 's believes ϕ'. $I_s(\phi)$ holds if and only if both $\neg B_s(\phi)$ and $\neg B_s(\neg\phi)$ hold.[1]

(1) Ed has five children, or Tom does. $\phi \vee \psi$
$\rightsquigarrow I_s(\phi),\ I_s(\psi)$

Similar inferences arise with more complex disjunctive sentences such as (2), where a further disjunction is embedded in the second disjunct. Here too, IIs may arise for each individual disjunct.

(2) Ed has five children, or Tom does, or Sam does. $\phi \vee (\psi \vee \chi)$
$\rightsquigarrow I_s(\phi),\ I_s(\psi),\ I_s(\chi)$

A useful diagnostic is to make one disjunct concern the speaker herself. The corresponding IIs should then conflict with the ordinary assumption that people know personal facts such as how many children they have. Consequently, the sentences in (3) are infelicitous, even if the actual facts are not mutually known, regardless of the position of the first-person disjunct.

(3) a. #I have five children, or Tom does (or Sam does).
b. #Ed has five children, or I do (or Sam does).
c. #Ed has five children, or Tom does, or I do.

Before proceeding, we emphasize that the judgments reported here concern ordinary contexts of the kind just described, where interlocutors are fully cooperative and address an open question such as *who has five children*. The sentences in (3) typically become felicitous when it is plausible that the speaker is ignorant of the relevant personal facts — for instance, if the speaker is known to suffer from severe amnesia. More generally, the inferences and infelicity effects described above do not arise in so-called *semi-cooperative* contexts, where the speaker is not expected to share all relevant information available to them, as in game-like settings; compare, for example, *Ed has five children or I do, guess which!* (Fox 2014, Marty et al. 2022).[2]

1 Nothing crucial hinges on taking B to be belief rather than some stronger epistemic state. What matters for the arguments below is that $B_s(\phi)$ tracks whatever epistemic position is required for s to be in a position to *assert* ϕ. There is ongoing debate about what this requires: some hold that assertion requires knowledge (Williamson 2000, DeRose 2002), while others take it to require belief, justified belief, or a weaker assertoric position (Weiner 2005, Hawthorne et al. 2016, Mandelkern & Dorst 2022, Ninan 2026). For simplicity, we continue to speak in terms of belief and ignorance, while remaining neutral among these views. We thank the editor for raising this question.

2 Even in fully cooperative contexts, there are cases in which IIs are weaker, if present at all — for instance, in affirmative answers to disjunctive questions (e.g. *Do Ed or you have five children? Yes!*). There is also a class of cases in which IIs do not arise at all, namely sentences such as *Either Ed has*

A theory of IIs should therefore explain both how these inferences arise and when they do and do not arise. In what follows, we sketch two major alternative-based approaches to IIs that address these challenges.[3]

1.2 Ignorance as quantity implicature

A prominent approach derives IIs as implicatures (Grice 1975, Gazdar 1979, Sauerland 2004, Fox 2007, Singh 2010, Meyer 2013, Buccola & Haida 2019, Marty & Romoli 2022). For concreteness, we sketch a common version of this approach, building on Sauerland (2004). It relies on two key ingredients. The first is a version of Grice's Maxim of Quantity, which requires speakers to contribute all relevant information they are in a position to assert. We formulate it as in (4), adapted from Sauerland (2004) and Fox (2007) to include logically independent alternatives, in addition to logically stronger ones (see Singh (2010) for a similar proposal).

(4) QUANTITY
If ϕ and ψ are relevant to the topic of conversation, ψ is an alternative to ϕ, and ϕ leaves ψ's truth value underdetermined, then a speaker who believes both ϕ and ψ should assert ψ rather than, or in addition to, ϕ.

The second ingredient is a theory of alternatives. While different theories of alternatives have been proposed, they largely agree on what counts as an alternative in the cases of interest. First, a sentence of the form $\phi \star \psi$, where '$\star$' is a binary connective, has ϕ and ψ among its alternatives. Second, a sentence involving multiple connectives combines all the alternatives of each connective. Thus, the alternatives to a sentence of the form $\phi \star (\psi \star \chi)$ include not only ϕ and $(\psi \star \chi)$, but also ψ, χ and their combinations.[4]

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five children, or I am a monkey's uncle, where the second disjunct expresses a proposition that is patently false. Such disjunctions convey that the first disjunct is true, and that the speaker is highly confident of this belief (Simons 2001). We thank an anonymous reviewer for these insights.

3 Our focus is on comparing approaches to IIs that rely on different notions of alternative. For this reason, we do not discuss Aloni (2022)'s recent account (see also Degano et al. 2025), which derives, for disjunctive sentences, possibility inferences for each individual disjunct as neglect-zero effects. We simply note that this approach does not, by itself, derive full ignorance. This feature allows it to account for recent results in Degano et al. 2025, to which we return in the conclusion, but it does not account for the basic data in (1)–(3), nor for the novel data introduced below.

4 We remain neutral between formal-alternative approaches such as Sauerland 2004, and the original Gricean approach, where alternatives are contextually relevant propositions rather than alternative sentences (see Fox 2007 for discussion). These variants make the same predictions for the phenomenon discussed in Section 2. We also leave the treatment of alternatives as conceptual alternatives, as proposed in Buccola et al. 2022, and IIs for future work.

To illustrate, consider the sentence in (1). As discussed above, its alternatives include the following sentences (they also include the conjunction $\phi \wedge \psi$; we set this type of alternative aside, as it is orthogonal to our discussion):

(5) a. Ed has five children. ϕ
    b. Tom has five children. ψ

Since the speaker asserted (1) rather than either alternative in (5), Quantity yields $\neg B_s(\phi)$ and $\neg B_s(\psi)$. Together with the Quality assumption that the speaker believes what she asserted, these inferences yield $\neg B_s(\neg\phi)$ and $\neg B_s(\neg\psi)$: if the speaker believed $\neg\phi$, her belief in $\phi \vee \psi$ would require belief in ψ, contrary to the Quantity inference. Thus $I_s(\phi)$ and $I_s(\psi)$ follow.

This account extends to three-disjunct sentences like (2), assuming that the alternatives include not only the matrix disjuncts, ϕ and $(\psi \vee \chi)$, but also those of the embedded disjunction, ψ and χ, as well as their combinations, $(\phi \vee \psi)$ and $(\phi \vee \chi)$. Applying the reasoning above over this set of alternatives yields ignorance about each individual disjunct: $I_s(\phi)$, $I_s(\psi)$ and $I_s(\chi)$.[5]

The implicature approach also accounts for the context-dependency of IIs. In particular, their suspension in semi-cooperative contexts can be explained as a result of Quantity being deactivated in such contexts (Fox 2014; see Meyer 2013, Marty et al. 2022 for another take). Similarly, their sensitivity to the question under discussion can be captured by the fact that this question affects which alternatives are contextually relevant. For instance, if the question concerns *whether either Ed or Tom has five children*, (1)'s disjuncts are not immediately relevant, and the resulting IIs are weaker or absent. By contrast, if the question concerns *who has five children*, each disjunct is individually relevant, yielding robust IIs. This also accounts for the infelicity of the sentences in (3): the relevant disjunct-alternatives enter Quantity reasoning and generate an II that conflicts with ordinary assumptions about speakers' knowledge of personal facts.

In sum, the implicature approach derives IIs for simple and complex disjunctive sentences from the Quality assumption that the speaker believes what she says, the Quantity principle in (4), and a suitable theory of alternatives, while capturing their context-dependency as sketched above.

1.3 Ignorance as inquisitive sincerity

In the implicature approach, alternatives are *external competitors*: sentences, or propositions expressed by sentences, that the speaker could have asserted instead.

5 Grammatical approaches of the implicature view derive IIs via silent operators quantifying over alternatives (a.o., Meyer 2013, Buccola & Haida 2019, Marty & Romoli 2022). For our purposes, they make the same predictions as the other implicature accounts.

Inquisitive semantics (Ciardelli et al. 2018), closely related to alternative semantics (Hamblin 1973, Alonso-Ovalle 2006, Roelofsen 2019), provides a different notion of alternative. Here, alternatives are *internal* to the semantic value of the uttered sentence: they correspond to the distinct ways in which the sentence can be supported.

More concretely, a sentence denotes a downward-closed set of information states (sets of possible worlds). The maximal elements of such a denotation are its *inquisitive alternatives*. We write $alt(\llbracket\phi\rrbracket)$ for the set of inquisitive alternatives of ϕ. A sentence is *inquisitive* just in case it has more than one such alternative. The informative content of a sentence is the union of its alternatives, and this is the component targeted by the ordinary Quality assumption: the speaker is assumed to accept that at least one alternative obtains.

In this approach, disjunction is interpreted by union of denotations:

(6) $\llbracket\phi \text{ or } \psi\rrbracket = \llbracket\phi\rrbracket \cup \llbracket\psi\rrbracket$

The inquisitive alternatives of a disjunction are the maximal elements of this union. In the simple cases relevant here, where ϕ and ψ are non-inquisitive and logically independent, each disjunct contributes a single maximal possibility. Thus, if $alt(\llbracket\phi\rrbracket) = \{\mathsf{A}\}$ and $alt(\llbracket\psi\rrbracket) = \{\mathsf{B}\}$, a simple disjunction has two alternatives:

(7) $alt(\llbracket\phi \text{ or } \psi\rrbracket) = \{\mathsf{A}, \mathsf{B}\}$

Inquisitive semantics has been fruitfully applied to various phenomena involving declarative and interrogative sentences (see Ciardelli et al. 2018 for an overview). What is most relevant here is the principle in (8) adapted from the pragmatic framework of Groenendijk & Roelofsen (2009) (see also Coppock & Brochhagen 2013 for a related principle).

(8) INQUISITIVE SINCERITY
If ϕ is inquisitive, then the speaker's information state s must not already establish any one of ϕ's inquisitive alternatives: for every $\mathsf{A} \in alt(\llbracket\phi\rrbracket)$, $s \nsubseteq \mathsf{A}$.

The motivation behind (8) is intuitive for questions: a speaker would not ask a question if she already knew which answer is true.[6] The same idea extends to disjunctions, which likewise introduce alternatives. For the simple disjunction in (1), the alternatives are A and B, corresponding to the disjuncts ϕ and ψ. Inquisitive

6 In place of (8), one could instead require that both $\mathsf{A} \cap s \neq \varnothing$ and $s \setminus \mathsf{A} \neq \varnothing$, directly encoding ignorance with respect to A. But this is too strong as a general formulation: a speaker may felicitously ask who came to the party while already knowing that one salient candidate did not.

Sincerity requires $s \notin A$ and $s \notin B$, yielding $\neg B_s(\phi)$ and $\neg B_s(\psi)$.[7] Together with the Quality assumption that the speaker accepts the informative content of the asserted disjunction, i.e. $s \subseteq \mathsf{A} \cup \mathsf{B}$, we also derive $\neg B_s(\neg\phi)$ and $\neg B_s(\neg\psi)$. Thus, Inquisitive Sincerity together with Quality derives the familiar IIs, $I_s(\phi)$ and $I_s(\psi)$.

For three-disjunct sentences like (2), the account delivers only the corresponding $\neg B_s(\cdot)$ inferences. Assuming that ϕ, ψ, and χ are non-inquisitive and logically independent, and writing their unique alternatives as A, B, and C respectively, the sentence has three inquisitive alternatives:

(9) $alt([\![\phi \text{ or } (\psi \text{ or } \chi)]\!]) = \{\mathsf{A}, \mathsf{B}, \mathsf{C}\}$

Inquisitive Sincerity yields the inferences $\neg B_s(\phi)$, $\neg B_s(\psi)$, and $\neg B_s(\chi)$. Unlike in the binary case, however, Quality alone does not yield full ignorance. Accepting the disjunction requires only that $s \subseteq \mathsf{A} \cup \mathsf{B} \cup \mathsf{C}$, which is compatible with ruling out one disjunct. For instance, s may be contained in $\mathsf{B} \cup \mathsf{C}$ while $\mathsf{A} \cap s = \varnothing$, in which case the speaker believes $\neg\phi$, even though Inquisitive Sincerity is satisfied. This limitation already reflects a difference between the two notions of alternative. Inquisitive Sincerity reasons over maximal alternatives of the uttered sentence, whereas the implicature approach may also access competitors such as $\psi \vee \chi$.

One way to derive full IIs for three-disjunct sentences is to add a condition along the lines of Coppock & Brochhagen's 2013 Maxim of Depictive Sincerity. Roughly, if a sentence highlights an alternative A, the speaker must consider A possible, i.e. $\mathsf{A} \cap s \neq \varnothing$, yielding the $\neg B_s \neg(\cdot)$ inferences. The intuition is that a cooperative speaker should not explicitly present an alternative that she already takes to be false. Applied to (2), and assuming that each overt disjunct highlights the corresponding alternative, this condition requires the speaker's information state to be compatible with each of the three disjunct alternatives. Together with the inferences delivered by Inquisitive Sincerity, this derives $I_s(\phi)$, $I_s(\psi)$, and $I_s(\chi)$.

Finally, although the context-sensitivity of IIs has not been developed in detail within this framework, there are at least two conceivable routes. One might treat Inquisitive Sincerity as a pragmatic requirement whose force depends on contextual assumptions about cooperativity. Alternatively, one might assume that, in certain environments, disjunctive meanings are mapped to their non-inquisitive closure, in which case no II is expected. Whether either strategy yields a full account of the suspension facts remains an open question.

7 In translating between the information-state notation and the B_s-notation introduced before, we assume that $B_s(\phi)$ holds just in case every world in the speaker's information state s is a ϕ-world. For a non-inquisitive ϕ whose unique alternative is A, $B_s(\phi)$ amounts to $s \subseteq \mathsf{A}$.

2 Spreading ignorance

The two notions of alternatives considered here are distinct but not incompatible. The question is whether both are needed, or whether a more parsimonious theory relying on only one could achieve the same empirical coverage. The spreading cases below bear on this question.

2.1 The phenomenon

Simple conjunctive sentences like (10) normally convey that the speaker believes both conjuncts to be true.

(10) Tom has three children and Sam has two. $\psi \wedge \chi$

When such a sentence is embedded under disjunction, as in (11), the resulting sentence may now give rise to IIs. More surprisingly, these inferences need not be confined to the matrix disjuncts: ignorance can 'spread' to the embedded conjuncts. In a context where the question is how many children each protagonist has, (11) suggests not only speaker ignorance about whether Tom has three children and Sam has two, but also ignorance about each conjunct individually. Crucially, the latter inferences do not logically follow from ignorance about the conjunctive disjunct: $I_s(\psi \wedge \chi)$ does not entail $I_s(\psi)$ or $I_s(\chi)$. For instance, a speaker may know that Tom has three children while remaining uncertain whether Sam has two. Such a speaker is ignorant about $\psi \wedge \chi$, but not about ψ.

(11) IGNORANCE SPREADING
Ed has five children, or Tom has three and Sam has two. $\phi \vee (\psi \wedge \chi)$
$\rightsquigarrow I_s(\phi),\ I_s(\psi),\ I_s(\chi)$

Further evidence for these inferences comes from the infelicity of (12). In line with (3), a sentence of the form '$\phi \vee (\psi \wedge \chi)$' is infelicitous in the relevant context if the speaker is expected to be knowledgeable about either of the embedded conjuncts.[8]

(12) a. #Ed has five children, or I have two and Tom has three.
b. #Ed has five children, or Tom has three and I have two.

8 Ignorance spreading is also observed in the antecedent of conditionals, e.g., *If (either) Ed has five children or Tom has three and Sam has two, then they can get a group discount on the visit*. This shows that IIs arise independently of the exclusivity implicature typically associated with disjunction, which is generally absent in these environments.

2.2 The inquisitive approach

The inquisitive approach correctly predicts that no IIs arise for simple conjunctions like (10). In inquisitive semantics, conjunction is interpreted by intersection:

(13) $[\![\psi \text{ and } \chi]\!] = [\![\psi]\!] \cap [\![\chi]\!]$

We assume that the conjuncts ψ and χ are non-inquisitive, with unique alternatives B and C, respectively. Then $\psi \wedge \chi$ has a single alternative, namely the maximal information state supporting both conjuncts:

(14) $alt([\![\psi \text{ and } \chi]\!]) = \{\mathsf{B} \cap \mathsf{C}\}$

Thus, for the relevant case here, conjunction is non-inquisitive and Inquisitive Sincerity predicts no IIs.[9]

The problem arises with ignorance spreading. Consider again (11). Let the unique inquisitive alternative of ϕ be A. By the conjunction clause, the conjunction $\psi \wedge \chi$ has a single alternative, $\mathsf{B} \cap \mathsf{C}$. Since disjunction is interpreted by union, the whole sentence has only the alternatives contributed by the two matrix disjuncts:

(15) $alt([\![\phi \text{ or } (\psi \text{ and } \chi)]\!]) = \{\mathsf{A}, \mathsf{B} \cap \mathsf{C}\}$

Inquisitive Sincerity therefore requires only that the speaker's information state not establish either alternative. This yields $\neg B_s(\phi)$ and $\neg B_s(\psi \wedge \chi)$. Together with Quality, the account derives ignorance about the two matrix alternatives:

(16) a. $I_s(\phi)$
b. $I_s(\psi \wedge \chi)$

This is where the account undergenerates: it derives ignorance about ϕ and $\psi \wedge \chi$, but not about the embedded conjuncts ψ and χ. Consequently, the account is compatible with a speaker who knows one embedded conjunct, provided she remains ignorant about the conjunctive disjunct as a whole. For instance, in (12), the account allows the speaker to know that she has two children, as long as she cannot establish that she has two children and Tom has three. But this is precisely the kind of state that the infelicity of (12) rules out: ignorance targets the embedded conjuncts themselves, not merely the conjunction containing them.

This problem differs from the limitation noted in Section 1.3 for three-disjunct sentences. There, Inquisitive Sincerity derived the relevant $\neg B_s(\cdot)$ inferences, but Quality alone failed to derive the corresponding $\neg B_s(\neg(\cdot))$ inferences. As discussed,

9 More generally, conjunction may be inquisitive as well. For instance, if ψ is non-inquisitive and χ is a disjunction $\chi_1 \vee \chi_2$, $\psi \wedge \chi$ may have two alternatives, corresponding to $\psi \wedge \chi_1$ and $\psi \wedge \chi_2$ (assuming neither one entails the other).

a condition such as Depictive Sincerity could supply the latter. Here, however, such a strengthening would at most yield $\neg B_s(\neg\phi)$ and $\neg B_s(\neg(\psi \wedge \chi))$, which entails $\neg B_s(\neg\psi)$ and $\neg B_s(\neg\chi)$. It would not yield the missing $\neg B_s(\psi)$ and $\neg B_s(\chi)$ inferences.

In sum, the inquisitive approach predicts ignorance about the two maximal alternatives associated with a disjunction embedding a conjunction, but these inferences are too coarse-grained. In the relevant cases, disjunction introduces multiple maximal alternatives, while conjunction collapses its conjuncts into a single conjunctive alternative. Ignorance therefore targets the conjunctive disjunct as a whole, without extending to its individual conjuncts.

2.3 The implicature approach

Like the inquisitive approach, the implicature approach correctly predicts no IIs for simple conjunctions like (10). Since $\psi \wedge \chi$ entails both ψ and χ, no II is generated by Quantity.

(17) a. Tom has three children. ψ
b. Sam has two children. χ

In contrast to the inquisitive approach, the implicature approach successfully captures the phenomenon of ignorance spreading.[10] In this approach, the alternatives to (11) include not only each disjunct, but also each embedded conjunct and their combinations. For present purposes, the relevant alternatives are those in (18).

(18) a. Ed has five children. ϕ
b. Tom has three children. ψ
c. Sam has two children. χ
d. Tom has three children and Sam has two. $\psi \wedge \chi$
e. Ed has five children or Tom has three. $\phi \vee \psi$
f. Ed has five children or Sam has two. $\phi \vee \chi$

The assertion does not entail (18-a)–(18-d). Quantity therefore yields:

(19) a. $\neg B_s(\phi)$
b. $\neg B_s(\psi)$
c. $\neg B_s(\chi)$
d. $\neg B_s(\psi \wedge \chi)$

10 We thank an anonymous reviewer for helpful discussion about the derivation below.

Together with the Quality assumption in (20), the inferences in (19-a)–(19-d) derive the desired ignorance inferences.[11]

(20) $B_s(\phi \vee (\psi \wedge \chi))$

Ignorance about the first disjunct follows as in the simple case. If the speaker believed $\neg\phi$, then, given (20), she would have to believe $\psi \wedge \chi$, contradicting (19-d). Hence, $\neg B_s(\neg\phi)$. Together with (19-a), this yields $I_s(\phi)$. The argument for the embedded conjuncts proceeds in parallel. Consider ψ: if the speaker believed $\neg\psi$, then, given (20), she would have to believe ϕ, contradicting (19-a). The same reasoning applies to χ. Thus $\neg B_s(\neg\psi)$ and $\neg B_s(\neg\chi)$. Together with (19-b) and (19-c), this yields $I_s(\psi)$ and $I_s(\chi)$, deriving the spreading effect.

Finally, the explanation for the infelicity effects in (3) extends to (12), provided that the context involves a question such as "how many children each protagonist has", or "which individuals (individually or jointly) have five children". Such questions make relevant not only the disjuncts but also the embedded conjuncts and their combinations — precisely the alternatives that feed the Quantity-based reasoning above. Hence, the implicature approach predicts the full set of IIs observed for sentences like (11) in the relevant contexts, accounting for both ignorance spreading and the associated infelicity effects.

3 Conclusion

Both the implicature and the inquisitive approaches capture important components of the IIs associated with simple and complex disjunctive sentences. However, only the implicature approach derives the full set of inferences observed when disjunction embeds conjunction. This contrast follows from the different notions of alternatives: maximal inquisitive alternatives do not include the embedded conjuncts, whereas implicature-based alternatives may. Ignorance spreading therefore supports a theory of IIs with an implicature-style notion of alternative.

Still, the implicature approach faces several challenges. First, ignorance need not always spread to embedded conjuncts, as in (21).[12]

(21) CONTEXT: *We know that Ed generally works only one weekend day, though he sometimes works all weekend. We also know that he worked yesterday, Saturday, and we see him entering his office on Sunday.*

11 This derivation relies on a version of Quantity such as (4) that applies not only to stronger but also to logically independent alternatives. In particular, ψ and χ are not stronger than $\phi \vee (\psi \wedge \chi)$, but independent of it. Under our formulation, this suffices to generate $\neg B_s(\psi)$ and $\neg B_s(\chi)$, which are crucial for spreading. A stronger-alternatives-only formulation would miss this result.

12 We thank Ivano Ciardelli (p.c.) for pointing out such cases and for helpful discussion.

Either Ed forgot something in his office, or he is working on (both) Saturday and Sunday this week.

At first sight, (21) parallels (12). Intuitively, however, (21) suggests ignorance only about whether Ed is working on Sunday and, hence, all weekend. It does not suggest ignorance about whether he worked Saturday. A *relevance-based* explanation seems natural. In this context, (21) addresses the question of *why Ed is coming to the office on Sunday*. This makes the embedded conjunction relevant as a whole, by highlighting the possibility that Ed may be working all weekend, while leaving Saturday irrelevant on its own. This is, of course, only a sketch and we leave a fuller account of the role of relevance in ignorance spreading for future work.

Second, the implicature approach is challenged by the recent experimental results from Degano et al. 2025. In brief, Degano et al. found that sentences of the form $\phi \vee \psi$ are strongly rejected when the speaker is certain about ϕ and considers ψ *impossible*, but accepted when the speaker is certain about ϕ and considers ψ *possible*. This contrast is not straightforwardly predicted by standard implicature accounts, which treat both cases similarly.

Third, Marty et al. 2024 report an asymmetry between disjunction and negated conjunction. While IIs from disjunction are robust, the corresponding 'negative' IIs from sentences like (22), namely ignorance about each conjunct, are much weaker or absent.

(22) Ed and Tom do not both have five children.

The felicity of (23) points in the same direction: the relevant IIs are absent or considerably weaker than in the corresponding disjunctive cases.

(23) Ed and I do not both have five children.

The challenge is that the implicature approach predicts IIs here much as it does for their positive counterparts, by treating the individual negated conjuncts as alternatives. By contrast, in the inquisitive account, negation removes inquisitiveness, so no such inferences are expected. This gives the inquisitive account an advantage with respect to this issue and the first challenge, though not the second.

Future work should therefore combine an account of ignorance spreading with a more refined understanding of relevance and with the experimental findings reported by Degano et al. 2025 and Marty et al. 2024.

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