Incremental vs. Symmetric Accounts of Presupposition Projection: An Experimental Approach[*]

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Abstract

The presupposition triggered by an expression E is generally satisfied by information that comes before rather than after E in the sentence or discourse. In Heim's classic theory (1983), this left-right asymmetry is encoded in the lexical semantics of dynamic connectives and operators. But several recent analyses offer a more nuanced approach, in which presupposition satisfaction has two separate components: a general principle (which varies from theory to theory) specifies under what conditions a presupposition triggered by an expression E is satisfied; and an 'incremental' component specifies that the principle must be checked on the basis of information that comes before E. Several researchers take this incremental component to be a processing bias, which can be overcome at some cost. If so, it should be possible, although costly, to satisfy presuppositions 'symmetrically', i.e. taking into account an entire sentence. We test this claim with experimental means. Using different 'hard' triggers, we show that in the propositional case symmetric readings are indeed possible, albeit degraded; and we compare the availability of symmetric readings in environments that involve various operators.

Keywords: presupposition projection; symmetry; incremental; processing; experiment.

1   The Debate About Symmetric Readings

1.1   Asymmetries in Presupposition Projection

Presupposition projection is traditionally taken to be computed 'from left to right', in the sense that a presupposition triggered by an expression E should be satisfied (entailed) by information that comes before E in the sentence or discourse. In the case of a simple conjunction, this generalization is motivated by the contrast in (1) (the definite description *the king of Moldavia* triggers a presupposition that Moldavia has a king):

(1)   a.   Moldavia is a monarchy and the king of Moldavia is powerful.

b.   # The king of Moldavia is powerful and Moldavia is a monarchy.

10 In Stalnaker's pragmatic theory (Stalnaker 1974), the presupposition triggered by an expression E must be entailed by the local context of E, construed as a belief state of the speech act participants at the point at which E is uttered. The asymmetry in (1) is derived because local contexts are computed incrementally, as a sentence is uttered: the local context of the definite description includes the information that Moldavia is a monarchy in (1a), but not in (1b) , where the information appears

15 only in the second conjunct, after the definite description.

Heim's dynamic semantics (1983) captures the same generalization, but encodes it in the *lexical semantics* of *and*, realized along dynamic lines: the update of a context C with a conjunction *F and G* is the successive update of C with F, and then with G:

(2)   C[F and G] = (C[F])[G]

20 Unlike Stalnaker's framework, which only accounted for the behavior of a few connectives, Heim's analysis extends to a variety of connectives and operators. But it was criticized by several researchers (including Heim herself) as lacking explanatory depth because it fails to explain why 'deviant' connectives, such as *and**, are never instantiated in natural languages:

(3)   C[F and* G] = (C[G])[F]

25 When F and G are non-presuppositional, *and** is equivalent to *and*. But in the general case this is not so: if the conjunction in (1) were *and**, (1a) would be deviant and (1b) would be acceptable, which is the opposite of what we find in English (cf. Soames 1989, Heim 1990).

Several recent theories have sought to address this problem by adopting modular accounts which take the left-right asymmetries to stem from the fact that presuppositions are checked in-

30 crementally, i.e. as soon as a presupposition trigger is pronounced (Schlenker 2008a, 2009a, Fox 2008, Rothschild 2008b, Chemla 2009c). More specifically, these new theories each have two components: (a) a general principle (which varies from theory to theory) that determines under what conditions a presupposition is satisfied when one has access to the entire sentence; (b) an 'incremental component' that requires that the principle in question be guaranteed to be satisfied as soon

35 as the presupposition trigger is pronounced, i.e. no matter how the sentence ends. This modular approach is in the spirit of Stalnaker's pragmatic account, since linear order plays a distinguished role in the analysis. But it also raises a new question about the nature of the incremental component: is it a 'hard' constraint, or is it a bias (possibly due to processing) that can be overcome at some cost? This question could not be raised within the non-modular analysis of dynamic semantics, but

40 it has taken a new urgency with the development of these new accounts. Three positions could be adopted:

(4)   P1: Left-right asymmetries are a *core property* of presupposition projection.

P2: Left-right asymmetries are *not a property* of presupposition projection.

> P3: Left-right asymmetries are *a bias* that can be overcome at some cost.

P1 is the standard *incremental* position within Heim's dynamic semantics. P2 is a *strict symmetric view*. This is a straw man position, which has not really been defended. P3 is a less extreme *symmetric* view. It can be seen as a *mixed account* which is explicitly endorsed by several recent theories, including Chemla (2008b, 2009c), Rothschild (2008a,b), Schlenker (2007, 2008a, 2009a). It predicts graded judgments of acceptability which have been disputed in the literature (e.g., by Beaver 2008). We propose to settle this controversy by collecting the relevant data with experimental means as was urged by Krahmer (2008) (see also Chemla 2008c).

1.2 Controlling for Triviality

The initial data in (1) would seem to offer overwhelming support for the incremental view in P1: the canonical order in which the trigger comes last seems to be far more acceptable than the reversed order. But in fact there is a confound which could explain the deviance of (1b): whenever the first conjunct is true, so is the second. As a result, the latter conjunct is redundant - and it can be ascertained that independently of the issue of presupposition projection this configuration is ruled out, as seen by the contrast in (5):

(5)   a.   John is in Paris and he is staying near the Louvre.

       b.   # John is staying near the Louvre and he is in Paris.

Thus, independent principles require that the second conjunct should not follow from the first one.[3] As we will see, when this confound is eliminated, the facts are considerably less clear – which makes the debate between P1, P2 and P3 in (4) all the more interesting.

To avoid the problem of redundancy, we should ensure that the non-presuppositional conjunct does not follow from the first conjunct, but that it still justifies its presupposition. The desired configuration is obtained in examples such as (6) or their schematic representations (7), where p^+ represents a proposition that entails p. Throughout our discussion, we adopt the convention of underlining the presuppositional component of an elementary clause, so that for instance *John stopped smoking* is written as *qq'* with *q=John used to smoke* and *q'=John doesn't smoke*.

(6)   a.   John used to smoke five packs a day, and he has stopped smoking.

       b.   John has stopped smoking, and he used to smoke five packs a day.

(7)   a. p^+ *and pp'*

       b.   *pp' and* p^+

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[3]In dynamic terms, an expression should not be 'locally trivial', in the sense that it should neither be equivalent to a tautology nor to a contradiction when evaluated in its local context (Stalnaker 1978). Although any theory needs some way to account for this generalization, we will not be concerned with the best way to do so.

It can be seen that the contrast we found in (1) is by no means as clear in (6), which makes it necessary to explore this question with experimental means.

1.3   An example of a modular account

To illustrate the modular approach, we focus on a trivalent theory of presuppositions discussed in Fox (2008) (it was pioneered by Peters 1979 and developed in different forms by Beaver and Krahmer 2001 and George 2008a,b; see also Schlenker 2009b for discussion). We start from a supervaluationist analysis in which semantic failure is treated as a kind of uncertainty about the value of an expression. Roughly, the idea is that if *John has stopped smoking* is evaluated in a world w in which its presupposition is not met, i.e. John never smoked, we just cannot tell whether the entire clause is true or false in w – although we assume it has a classical value (true or false). The semantic module outputs the value # just in case this uncertainty cannot be resolved – which systematically happens with unembedded sentences whose presupposition is not met, since we cannot tell whether they are true or false. But the problematic clause may be embedded in a complex sentence whose semantics guarantees that *no matter* how the uncertainty is resolved, one will still be in a position to determine unambiguously the value of the entire sentence. This may for instance happen if we evaluate *John used to smoke and he has stopped smoking* in a world w in which John never smoked. The value of the second conjunct is uncertain (indeterminate) in w; but the first conjunct is false, and therefore *no matter how the uncertainty is resolved*, the entire sentence will be false as well. Now we can make this same reasoning with respect to every world in the context set: for any world w, the sentence will have a determinate truth value because either John used to smoke, which guarantees that the consequent has a classical value (since its presupposition is satisfied); or John didn't use to smoke, which makes the first conjunct false and the entire sentence equally false.

In the general case, this approach posits that a sentence F is presuppositionally acceptable in a context set C just in case for every world w of C, F evaluated according to the supervaluationist scheme has a classical truth value in w:

(8)   Presuppositional Acceptability

A sentence F uttered in a context C is *presuppositionally acceptable* if and only if for every world w of C, F evaluated according to the supervaluationist scheme has a classical value in w.

The rule in (8) requires that for any world w of C, either (i) p is false in w (which makes the entire sentence false no matter how the second conjunct is evaluated), or (ii) p is true, and the presupposition q of the second conjunct must also be true in w (for otherwise the value of $\underline{qq'}$ would be indeterminate, which would make the value of the entire sentence indeterminate too). In

other words, we derive the same conditional presupposition that was predicted by Heim's dynamic semantics: if p is true, it should be the case that q is true as well.

At this point, nothing in the theory accounts for the left-right asymmetry we observed in (1): we make exactly the same predictions for *p and qq'* vs. *qq' and p*, since the supervaluationist account treats the two conjuncts symmetrically. The asymmetry is introduced by an independent incremental component of the theory, which requires that when the presupposition trigger *qq'* is processed, any semantic failure it may produce is guaranteed not to be transmitted to the entire sentence *no matter how that sentence ends*. To implement this idea rigorously, we would need to discuss the details of the syntax; since this has been done elsewhere, we will be content to leave the discussion at an intuitive level (for different implementations, see George 2008a,b, Fox 2008, Schlenker 2009b). Consider again *p and qq'*. The presupposition trigger occurs at the end of the sentence, and we take this to mean that there is no uncertainty about how the sentence will end; as a result, the sentence is acceptable just in case it satisfies the condition in (8), and hence the conditional presupposition *if p, q*. Now consider the reversed order *qq' and p*. The incremental component requires that we be in a position to determine as soon as *qq'* is uttered that no matter how the sentence ends, in every world of C the sentence will have a classical truth value. The sentence could, among others, end with a tautology $\top$.[4] But when we apply (8) to *qq' and* $\top$, we obtain a presupposition that *if* $\top$, *q*, or more simply: *q*. In this way, we can explain why the reversed order *qq' and p* carries a much stronger presupposition than the canonical order *p and qq'*.

To state the principle in greater generality, we define a 'good final' for a string *x* to be any string *y* which guarantees that *xy* is a well-formed sentence. One possible statement of the incremental component is as follows (see Fox 2008 for an alternative):

(9)   Incremental Presuppositional Acceptability

F uttered in C is *incrementally acceptable* just in case for all strings a, b, and for any expression $\underline{d}d'$, if $F = a \, \underline{d}d' \, b$, then for every good final b' which contains no underlined material,[5] $a \, \underline{d}d' \, b'$ is presuppositionally acceptable, i.e. for every world w of C, $a \, \underline{d}d' \, b'$ evaluated in accordance with the supervaluationist scheme has a classical value in w.

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[4]See Chemla (2006) for discussion of the mostly harmless role of tautologies in this kind of theory.

[5]The restriction to good finals that do not contain underlined material is made necessary by the trivalent nature of this particular account (it is not shared by other recent accounts, such as Chemla 2008b, 2009c or Schlenker 2008a,b, 2009a). Without such a requirement, we would in essence predict that *qq' and p* is never acceptable, because we would need to consider good finals that include all conceivable presupposition triggers.

1.4   The Nature of the Asymmetry

Modular accounts that have an incremental component raise an obvious question: what is the status of the left-right bias? Within the trivalent framework, the three positions we outlined in (4) are as follows (they could be adapted to all recent theories):

(10)   P1. Incremental account: presupposition projection is entirely ruled by the condition in (9).

P2. Strict symmetric account: presupposition projection is entirely ruled by the condition in (8).

P3. Mixed account: presupposition projection is preferably ruled by the condition (9) (= incremental bias), but a sentence whose presupposition only satisfies the condition in (8) should have an intermediate status (= the bias can be overcome, but at some cost).

When the presupposition trigger appears at the end of the sentence, all accounts make the same predictions (since in these cases the incremental component adds nothing). Things are different in other cases. We will report the results for various constructions: conjunctions, disjunctions, conditionals (which we analyze for simplicity as material implications), the quantifiers *each* and *no*. We already derived the results for conjunctions in §1.3:

(11)   Predictions for conjunctive sentences

a. *p and qq'*

All accounts predict the presupposition: *if p, q*

b. *qq' and p*

– Incremental accounts: *q*

– Symmetric accounts: *if p, q*

Turning to disjunctions, all accounts predict that *p or qq'* should presuppose that *if not p, q*. For let us consider any world w of the context set. If *p* is true in w, the disjunction is true anyway, and thus the presupposition of the second disjunct need not be satisfied. If *p* is false, everything hinges on the value of the second disjunct - and if its value in w is indeterminate, so is that of the entire sentence. So in such cases the presupposition of the second disjunct must be satisfied - hence the presupposition that *if not p, q*. For the reversed order *qq' or p*, the symmetric account makes exactly the same prediction as for the canonical order *p or qq'*: it should be presupposed that *if not p, q*. But the incremental account makes different predictions; for the string *qq'* can be turned into a well-formed sentence by adding *and* ⊤ to it, where ⊤ is a tautology. But this is precisely the case we considered above in our discussion of conjunction, and thus the conclusion is the same: every

world of the context set should satisfy q (and it is easily checked that if this condition is satisfied, the condition in (9) is satisfied as well).

(12) Predictions for disjunctive sentences

    a. *p or qq'*

      All accounts predict the presupposition: *if not p, q*

    b. *qq' or p*

      – Incremental accounts: *q*

      – Symmetric accounts: *if not p, q*

With the same kind of reasoning, we can derive the following prediction for conditionals:[6]

(13) Predictions for conditional sentences

    a. *if p, qq'*

      All accounts predict the presupposition: *if p, q*

    b. *if not qq', not p*

      – Incremental accounts: *q*

      – Symmetric accounts: *if p, q*

In the propositional case, all new (modular) theories make the same predictions. The situation is different in the quantificational case: depending on the theory under consideration, the predicted presuppositions are more or less strong. But unlike dynamic semantics, all new theories predict that symmetric readings should be available. Since our goal is to adjudicate between dynamic semantics and the new theories (rather than among the latter), we simply lay out conditions that are predicted by all new theories (but not by dynamic semantics) to be *sufficient* for the relevant presuppositions to be satisfied. Technically, we state below the predictions of Schlenker (2008a, 2009a); trivalent accounts predict weaker presuppositions, as is discussed in George (2008a,b), Schlenker (2009b).

(14) Predictions for sentences with a universal quantifier like *each* or *every*

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[6]For simplicity, we will treat conditionals as material implications (essentially the same results would be obtained if they were treated as strict implications). Since *if p, qq'* has the same truth conditions as *not p or qq'*, and since in addition p and q appear in the same order in the two constructions, the predictions are the same as for *(not p) or qq'*: we predict a presupposition that *if p, q* (and since the trigger appears at the end, the same prediction is made by the incremental and by the symmetric account). Let us now consider the reverse order with the contraposition *if not-p, not-qq'*: it has the same semantics as *if p, qq'*, but the arguments appear in the opposite order. It is clear that the symmetric account will also predict a presupposition that *if p, q* (since it is not sensitive to the order in which the arguments appear). As for the incremental account, it will predict a presupposition that q. This is because *if not qq',...* could be turned into a well-formed sentence by adding as a consequent a contradiction $\perp$, yielding: *if not qq', $\perp$*, from which it follows that *if not $\perp$, qq'*, which is equivalent to *qq'*. So it must be presupposed that q.

    a. *[Every not-P] QQ'*

    All accounts predict the presupposition (sufficient condition): *[Every not-P] Q*

    b. *[Every not-QQ'] P*

    – Incremental accounts (sufficient condition): *[Everything] Q*

    – Symmetric accounts (sufficient condition): *[Every not-P] Q*

(15)   Predictions for sentences with the quantifier *no*

    a. *[No P] QQ'*

    All accounts predict the presupposition (sufficient condition): *[Every P] Q*

    b. *[No QQ'] P*

    – Incremental accounts (sufficient condition): *[Everything] Q*

    – Symmetric accounts (sufficient condition): *[Every P] Q*

Let us summarize our results with reference to the positions described in (4). For all the examples above, strict symmetric accounts like P2 predict weak (conditional) presuppositions no matter what the position of the presupposition trigger is. By contrast, incremental accounts like P1 however predict stronger presuppositions when the trigger occurs early in the sentence, since the end of the sentence cannot serve to justify a presupposition that comes before. Mixed accounts like P3 predict that a sentence is most acceptable if its presupposition is satisfied incrementally, but that the presupposition may also be satisfied symmetrically, although at some cost.

2 How to test symmetric readings

2.1 Hard triggers prevent accommodation

The goal of this work is to determine whether linguistic material that follows a presupposition trigger can at least partly neutralize the presupposition at the sentence level (strict symmetric/mixed views), or whether only the preceding linguistic material can do so (incremental view). In short, the symmetric view predicts weaker presuppositions than the incremental view. There are two ways to test these predictions: (i) by studying inferences that naïve speakers draw about the context on the basis of various presuppositional sentences; (ii) by assessing the acceptability of presuppositional sentences in various contexts. In Chemla (2009a,b), strategy (i) was successfully applied to standard presupposition triggers, such as *know*, *stop*, etc., which allow for (global) accommodation, i.e. a process by which subjects adapt their beliefs for the sake of a conversational exchange to ensure that no presupposition failure arises. Thus *John knows* (or: *doesn't know*) *that Mary is having dinner in New York* will typically give rise to an inference that Mary is having dinner in New York. This inferential strategy would be difficult to apply to the case at hand, however: even

for the 'mixed' account in (4)P3 above (which is the only version of the symmetric view that has
been defended in the literature), presuppositions are preferably justified incrementally — with the
result that speakers might systematically *prefer* to draw the inferences predicted by the strict in-
cremental account. For this reason, we adopted instead Strategy (ii), which is applicable when one
uses 'hard' triggers that do not readily allow for accommodation. Such is the case of the particle
'too' in sentences such as (17): the sentence is simply deviant in case the context does not provide
a salient individual other than John who is known to be having dinner in New York.

(16)   John knows that Mary is having dinner in NYC.

(17)   # John is having dinner in NYC too. (Kripke 1990)

Hard triggers make it possible to test the predictions of the incremental and of the mixed account:
for the former, if the presupposition triggered by 'too' is justified by material that comes later in the
sentence or discourse, the result should be unacceptable; by contrast, for the mixed account the re-
sult should have an intermediate acceptability status.[7] We used the word *également* in experiment 1
and the word *aussi* in experiment 2. Both words are close translations of the English *too*.[8]

To make it clear that the preceding discourse did not justify the presupposition predicted by the
incremental account, our target sentences were preceded by contexts such as (18); they have the
effect of making explicit that the presupposition in question was not part of the Common Ground.

(18)   Nous ne savions rien sur la façon dont les dirigeants syndicaux se sont comportés lors des
        négociations secrètes de mai et juin derniers. Mais je viens d'en savoir plus à ce sujet.

        'We didn't know anything about the way the union leaders behaved during the secret nego-
        tiations in last May and June. But I have just learned more:'

        a. Durand s'est également montré flexible en juin.

            'Durand displayed some flexibility in June too.'

        b. Durand s'est montré flexible en juin.

            'Durand displayed some flexibility in June.'

(19)   *Schematically:*

        We didn't know anything about {*the relevant event*} but I just learned more:

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[7]It seems that *local* accommodation is impossible for hard triggers while global accommodation remains remotely
possible. As discussed below, this is not directly problematic for the interpretation of our results because we evaluated
the possibility of accommodation within the same experiment.

[8]For more details about the semantics/pragmatics of such anaphoric particles, see, e.g., van der Sandt and Geurts
(2001) or van der Sandt and Huitink (2003). To make sure that the precise details of the analysis of these presup-
positional items would not affect the validity of our results, we tested the actual behavior of the relevant triggers
independently, see §2.4.

    a. *pp'*.

    b. *p'*.

2.2 The specific contribution of the trigger

Of course, acceptability judgments could be affected by numerous factors independent of presupposition. We expected that a sentence like (17) would be judged deviant because it would require an impossible accommodation (see §2.1). However, the fact that this sentence is judged deviant does not necessarily say anything specific about presupposition. Presumably, sentence (20) would be judged deviant too, but this deviance has nothing to do with presupposition projection; rather, it is due to the absence of a determiner before the noun *book*:

(20)   # John read book too.

To assess the *specific* contribution of the presupposition trigger to the acceptability of the sentence, we will systematically compare a presuppositional sentence with a counterpart from which the trigger has been removed. The specific contribution of the trigger to the well-formedness of the sentence is best represented by the *difference in judgment* between the sentence with the trigger and the corresponding sentence without it. So, to confirm that the deviance of (17) is indeed due to its presupposition, we would have to show that (17) is significantly less acceptable than a minimally different but non-presuppositional version without *too*. Schematically, we want to detect differences between sentences of the following types (see the pairs of examples in (18) for more concrete examples):

(21)   a. ... x did p too ...

         b. ... x did p   ...

2.3 The role of linear order

We are interested in sentences in which the presupposition trigger appears in various embedded positions, namely before or after a clause which may warrant its presence. Applying the previous discussion about the comparison between presuppositional and non-presuppositional counterparts to conjunctions, we are thus mostly interested in the following two pairs of configurations:

(22)   Canonical order

        a. y did p^+ and x did p too.

        b. y did p^+ and x did p.

(23)   Non-canonical order

        a. x did p too and y did p^+.

   b. x did p   and y did p^+.

According to the incremental view, however, the presupposition triggered by *too* can be neutralized sentence-internally only if an earlier clause comes to justify it. Hence, there should be no acceptability difference between the presuppositional and non-presuppositional examples in (22), but there should be one between (23a) (deviant) and (23b) (acceptable). According to the symmetric view, this presupposition may be neutralized either by an earlier or by a later conjunct. Therefore there should be no difference between the sentences in (22) but also no difference between the sentences in (23).

More generally, to extend the comparison between symmetric and incremental approaches to other environments, we constructed pairs of sentences in which the linear order is altered while the truth conditions are (roughly) preserved (see discussion in §1.4). In short, every sentence was paired with an equivalent sentence where the clauses appear in the reversed order. The transformation from one to the other was given by the following (near-)equivalences:

(24) Conjunctions: A and B $\longleftrightarrow$ B and A

(25) *But*-environments: A but B $\longleftrightarrow$ B but A

(26) Conditionals: if A, then B $\longleftrightarrow$ if not(B), then not(A)

2.4 Quantitative evaluation of the role of accommodation

To validate our methodology and auxiliary assumptions, we extended the preceding tests to less controversial cases. In a nutshell, we wanted to check that when a presuppositional sentence is judged felicitous, this is not because its presupposition can be accommodated (see §2.1) but rather because its presupposition has been justified as predicted by the symmetric or by the incremental approach of presupposition projection.

First, we want to make sure that if the presuppositional version of (22) and (23) can be judged felicitous, this must be attributed to the presence of the p^+-clause, which satisfies the presupposition. In other word, when p^+ is replaced with another clause q which does not entail p, the theories under consideration predict no contrast between the resulting sentences:

(27) Canonical order

      a. y did q and x did p too.

      b. y did q and x did p.

(28) Non-canonical order

      a. x did p too and y did q.

      b. x did p   and y did q.

Similarly, the presence of p^+ should not help justify the presupposition when this presupposition is *not(p)* instead of *p*, as in the following pairs:

(29)   Canonical order

    a. y did p^+ and x did not-p too.

    b. y did p^+ and x did not-p.

(30)   Non-canonical order

    a. x did not-p too and y did p^+.

    b. x did not-p   and y did p^+.

Finally, we want to confirm independently from these complex environments that accommodation of *too* is indeed difficult. This can be achieved by testing the presuppositional clauses used in the experiment in unembedded environments:

(31)   a. x did p too.

    b. x did p.
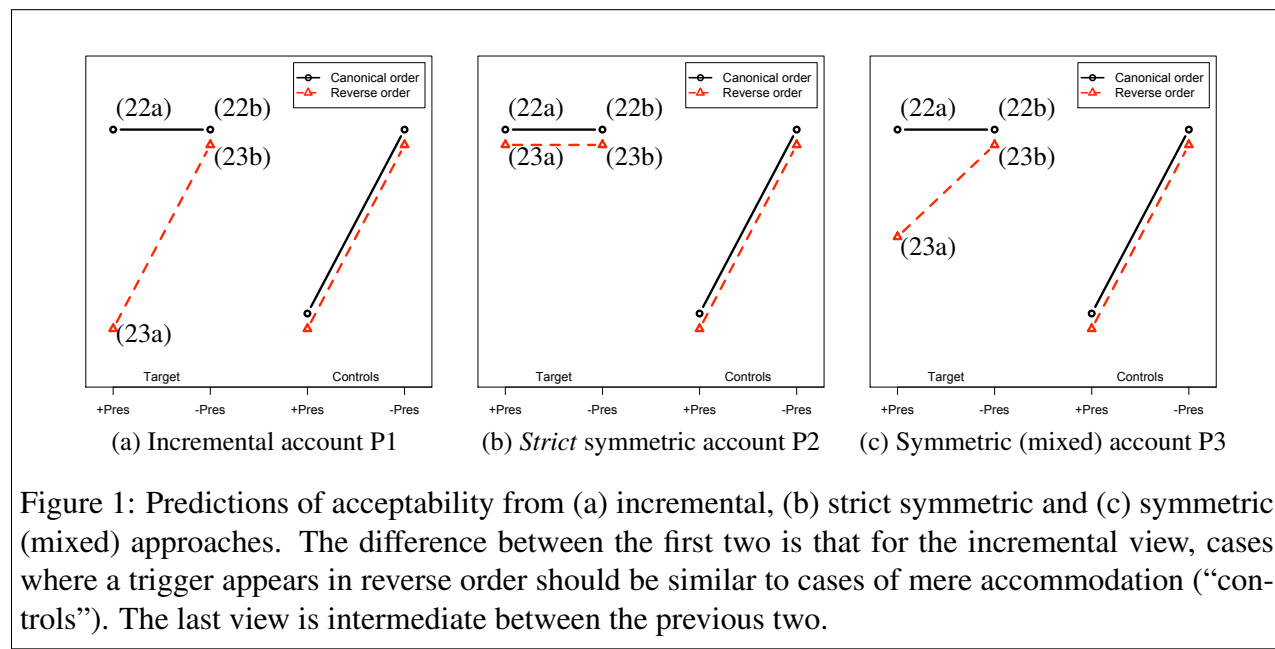
(32)   a. x did not-p too.

    b. x did not-p.

In short, accommodation could artificially enhance the acceptability of the target sentences and blur differences that are due to linear order. Hence, we tested *too*-phrases in various positions to estimate the effect of accommodation independently of the linear order effects we are interested in.

2.5   Summary of the predictions

In most cases discussed above, the presence of *too* (*également* or *(lui) aussi* in French) may be odd because it triggers a presupposition that is difficult to accommodate. According to the incremental view P1, this presupposition triggered by *too* can be neutralized sentence-internally by an earlier conjunct, and the presuppositional example should be as acceptable as the non-presuppositional example in (22); by contrast, (23a) should be considerably worse than (23b). According to the strict symmetric view P2, the presupposition may be justified either by an earlier or by a later conjunct. Therefore there should be no more difference between the sentences in (23) than between the sentences in (22). The mixed account P3 is intermediate between these positions: it predicts that the presuppositional version of (23) is degraded but much less so than when the presupposition is not supported by anything in the sentence (as in examples (27/28), (29/30), (31) and (32)). These predictions are represented graphically in Fig. 1.

(a) Incremental account P1   (b) *Strict* symmetric account P2   (c) Symmetric (mixed) account P3

Figure 1: Predictions of acceptability from (a) incremental, (b) strict symmetric and (c) symmetric (mixed) approaches. The difference between the first two is that for the incremental view, cases where a trigger appears in reverse order should be similar to cases of mere accommodation ("controls"). The last view is intermediate between the previous two.

3 Experiment 1

The goal of this experiment is to test the predictions of the incremental and the symmetric views on presupposition projection.
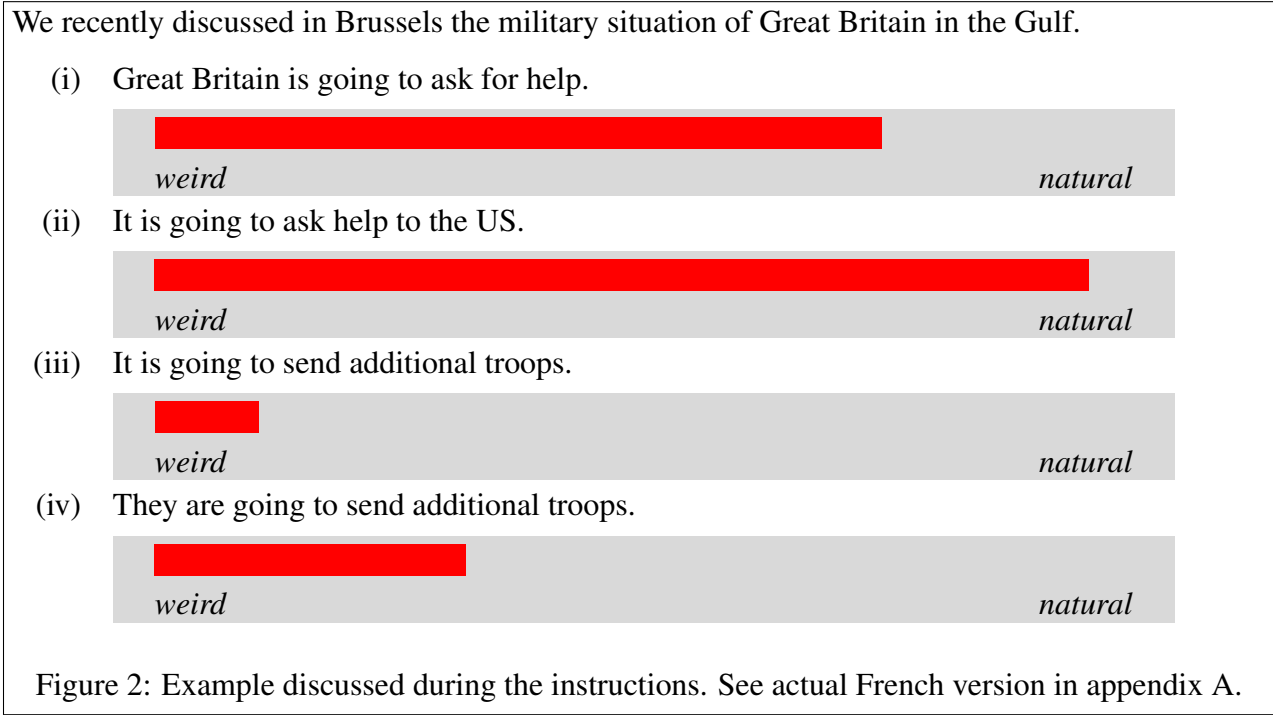
3.1 Method

Participants. 14 native speakers of French ranging in age from 18 to 37[9] years took part in this experiment (8 women and 6 men). All of them were monolingual and none had any prior exposure to formal linguistics.

Instructions. Participants were instructed that they would have to assess how natural a sentence was (when it followed another given utterance). The example in Fig. 2 was presented to the participants. They were explicitly instructed that the judgments reported there represented only one option among many possible outcomes and that they might have a different opinion (see full instructions in appendix A).

Task. Participants had to set the length of a line to assess how 'natural' the sentences were: the longer the line, the more natural the sentence. This task comes directly from the magnitude estimation paradigm used in psychophysics (Stevens 1956) and already applied to collect grammaticality judgments (see e.g., Bard et al. 1996, Cowart 1997).[10] Participants were instructed to take advan-

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[9]There was only one participant over 26 years old.

[10]A similar scale of judgments was also used in Chemla (2009b,d) to investigate pragmatic phenomena but with an explicit inferential task.

We recently discussed in Brussels the military situation of Great Britain in the Gulf.

(i)   Great Britain is going to ask for help.

weird   *natural*

(ii)   It is going to ask help to the US.

weird   *natural*

(iii)   It is going to send additional troops.

weird   *natural*

(iv)   They are going to send additional troops.

weird   *natural*

Figure 2: Example discussed during the instructions. See actual French version in appendix A.

tage of the flexibility of the space of possible answers to report any contrasts they might perceive between sentences which appear together on the screen.

Measure. Subjects' responses were coded as a percentage of the line filled in red. We will call this measure bare acceptability (of the corresponding sentence). These responses were then normalized so that the grand mean and standard deviation for each subject equal the overall grand mean and standard deviation across subjects (48% and 38% respectively). We will refer to the resulting measure as the acceptability of the sentence.[11] In short: the higher the acceptability, the more participants find the sentence natural. We will restrict our attention to (normalized) acceptability unless otherwise stated.[12]

Items and experimental conditions. The items appeared on the screen in groups of 4 or 6. The groups of 4 were designed to test for accommodation of the presupposition associated with *too* in non-embedded contexts. The alleged presupposition was either *p* or its negation *not(p)* (this was

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[11]The relation between acceptability A and normalized acceptability $\hat{A}$ is given by: $\hat{A} = M + (A - M_s)\frac{SD}{SD_s}$ where M and SD represent the mean and standard deviation for the whole group of subjects (without subscript) or for the particular subject under study (with subscript s). M=.48 and SD=.38.

This standard process of normalization of the responses does not affect the following results in any noticeable way (all statistical tests were run with both types of measures). This process simply erases irrelevant variability (mainly for the graphical representations) coming from differences in the way various participants distributed their answers along the line (mean bare acceptability varied from 29% to 59% across subjects).

[12]Even though we report (normalized) acceptability as percentage scores, it is not formally constrained to vary between 0 and 1.

also the case for the other items described below in (34) and (35)):

(33)   We didn't know much about {the relevant event} but I just learned more.

    a.   x did p too.

    b.   x did p.

    c.   x did not-p too.

    d.   x did not-p.

The groups of 6 were designed to test for accommodation of the presupposition associated with *too* in embedded contexts where the adjacent clause either entailed the presupposition (a/b below), was independent from it (c/d) or contradicted it (e/f). Half of these groups were designed to test the felicity of the presupposition in the canonical order as in (34)—the presuppositional clause appears last— and half of these groups were designed to test for non-canonical order as in (35) — the presuppositional clause appears first. These groups also varied along another dimension which is not schematized again here: the target environment (conjunction as below, *but*-environments or conditionals).

(34)   We didn't know much about {the relevant event} but I just learned more.

    a.   y did p^+ and x did p too.

    b.   y did p^+ and x did p.

    c.   y did p^+ and x did not-p too.

    d.   y did p^+ and x did not-p.

    e.   y did q and x did p too.

    f.   y did q and x did p.

(35)   We didn't know much about {the relevant event} but I just learned more.
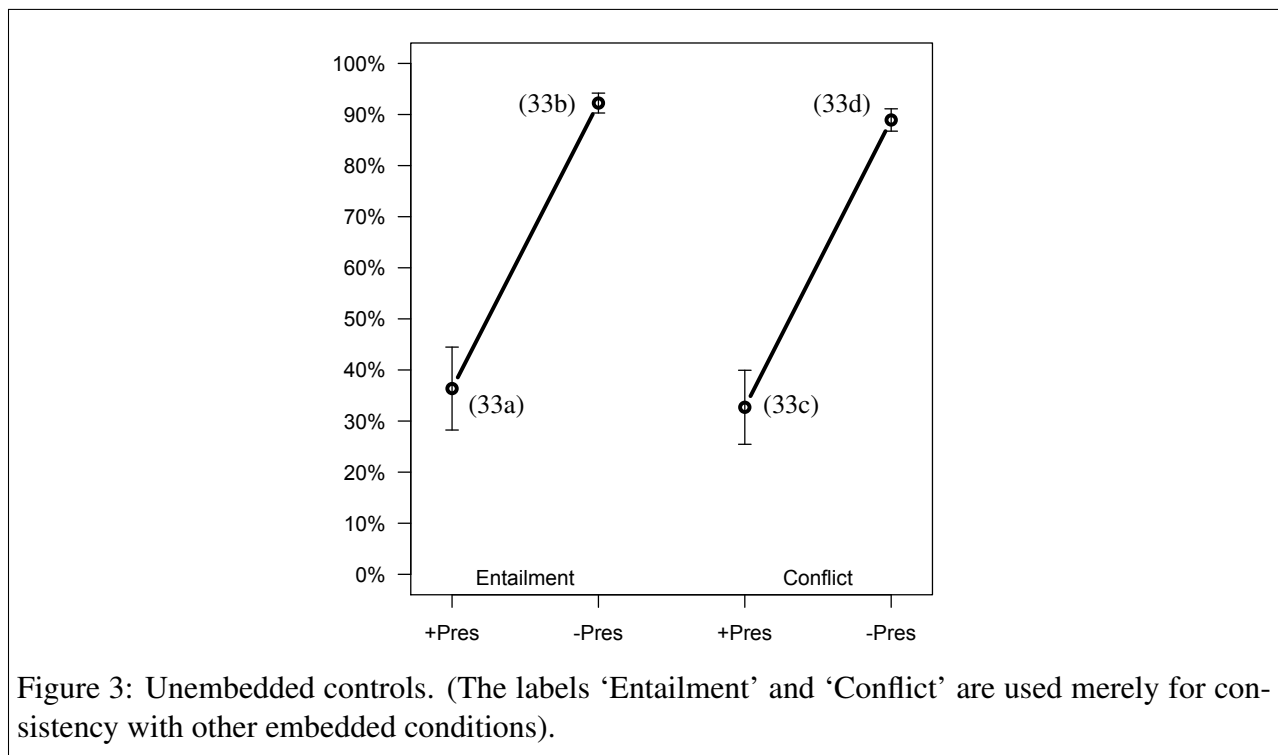
    a.   x did p too and y did p^+.

    b.   x did p   and y did p^+.

    c.   x did not-p too and y did p^+.

    d.   x did not-p   and y did p^+.

    e.   x did p too and y did q.

    f.   x did p   and y did q.

In sum, the items contained in these groups of 6 can be described with the 4 following factors: (a) Environments: *and*, *but*, *if*, (b) Order: ±canonical, (c) Relation between the presupposition and the other clause: entailment, conflict, independence and (d) Presupposition: ±presupposition. (a) and (b) were between screen factors, and (c) and (d) were within screen factors. We thus obtain

3(a)×2(b) = 6 types of screens with 3(c)×2(d) = 6 items, i.e. 36 conditions. There were also
the screens with 2(c)×2(d)[13]= 4 control conditions as in (33). Each of these 40 conditions was
instantiated 5 times with different contents, which correspond to joint instantiations of p, p^+ and q.
We thus obtained 200 items which are described in appendix B.

Presentation of the items. Participants first saw the list of items discussed in the instructions to
allow them to get used to the display and to the task (see Fig. 2). Then, they saw the lists of 4 or
6 items as in (33-35) above. The lists were presented in random order, the items within these lists
also appeared in random order.

3.2   Results

Figure 3: Unembedded controls. (The labels 'Entailment' and 'Conflict' are used merely for con-
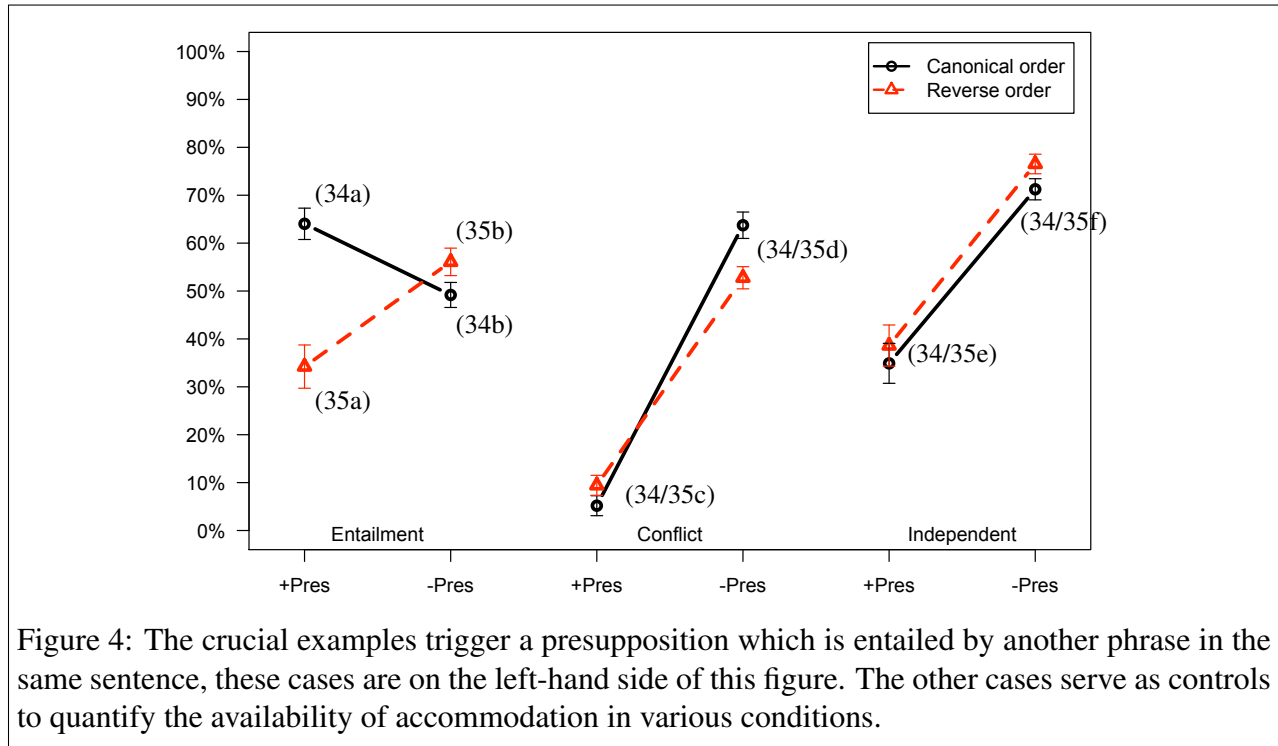sistency with other embedded conditions).

Unembedded accommodation. Fig. 3 reports the mean felicity judgments for non-embedded sen-
tences. This corresponds to the screens containing 4 items. Bare presuppositional phrases are
judged lower than their counterparts without the relevant presupposition trigger. Statistically speak-
ing, a t-test yields a significant difference between the presuppositional and non-presuppositional
sentences both in the positive version ($F(1, 13) = 42$, $p < .001$, $\eta_p^2 = .43$) and in the negative

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[13]Even though there was of course no alternative clause in the non-embedded cases, we can pretend that these
examples vary along the relation factor. In terms of the presupposition to be accommodated, the *not-p* cases correspond
best to the 'conflict' condition and the *p* cases with any of the other two levels of the factor relation.

version ($F(1, 13) = 54$, $p < .001$, $\eta_p^2 = .44$). Notice also that there is no significant interaction between the positive and the negative cases (2×2 ANOVA: $F < 1$, ns) which suggests that the diffi-culty to accommodate the presupposition is independent from the content of the presupposition—the presupposition is *p* when relation='entail' or 'independent' and *not(p)* when relation='conflict'.

Figure 4: The crucial examples trigger a presupposition which is entailed by another phrase in the same sentence, these cases are on the left-hand side of this figure. The other cases serve as controls to quantify the availability of accommodation in various conditions.

We now turn to the results in *but-*, *and-* and *if*-environments. Fig. 4 represents the global results aggregated across environments. We will first analyze results for which the expectations are not controversial: accommodation in the absence of internal justification is predicted to be impossible, while cases in which the trigger is justified by preceding material (canonical order) are predicted to be acceptable on every approach. We then move to the key examples in which the trigger appears in non-canonical position. Recall that incremental theories predict these cases to be unacceptable, just like other examples involving accommodation, while symmetric theories predict them to be (relatively or completely) acceptable.

Accommodation from embedded positions. Similarly, accommodation is not possible in sentences with two clauses when the presence of the trigger in a clause is not justified by the material introduced in the other clause, either because the content of this clause is contradictory with the presupposition (conflict) or because they are independent from each other (independent). This is true in canonical (solid black line) and non-canonical order (red dashed line). Visually, this result corresponds to the right-hand side of Fig. 4. The relevant statistics are given in Table 1.

Canonical order. The next result is again uncontroversial: satisfaction of the presupposition

Canonical order

Conflict:	$F(1, 13) = 268,$	$p < .001,$	$\eta_p{}^2 = .48$
Independent:	$F(1, 13) = 55$,	$p < .001,$	$\eta_p{}^2 = .44$

(a) Canonical order: the conflicting/independent clause is before the presuppositional clause.

Reverse order

Conflict:	$F(1, 13) = 336,$	$p < .001,$	$\eta_p{}^2 = .49$
Independent:	$F(1, 13) = 41$,	$p < .001,$	$\eta_p{}^2 = .43$

(b) Reverse order: the conflicting/independent clause is after the presuppositional clause.

Table 1: Statistical comparisons (t-tests) of presuppositional and non-presuppositional versions of sentences in (a) canonical or (b) reverse order depending on whether the additional clause contradicts ('conflict') or is 'independent' from the presupposition.

sentence-internally by preceding material is felicitous, as predicted both by incremental and symmetric approaches. Visually, this is shown by the fact that the black solid line to the left is not increasing. More precisely, the versions with a presupposition trigger are now preferred to their counterparts without the trigger (t-test between the $\pm$presupposition conditions, restricted to cases where the presupposition is satisfied sentence-internally in the canonical order: $F(1, 13) = 17$, $p < .01, \eta_p{}^2 = .36$). This result suggests that in some cases the strongest possible presuppositions must be expressed (*'Maximize Presupposition!'*), as has been argued in much recent literature (see Heim 1991, Amsili and Beyssade 2006, Percus 2006, Schlenker 2006, Sauerland 2008, Chemla 2008a, Magri 2008, Singh 2009).

We can also compare this situation to cases where the presence of the trigger would require accommodation. Unsurprisingly, accommodation leads to very different results: the trigger is felicitous in the first case, infelicitous in cases of accommodation. Statistically speaking, the difference between various cases which require accommodation and the proper canonical order constructions is attested by the significant effects revealed by the ANOVAs reported in Table 2.

Non-canonical order. We now come to the interesting case: reverse order constructions in which the trigger appears in the first clause of the sentence. At first sight, it seems that these constructions are judged odd even when the second clause could help satisfy the presupposition: the presence of the trigger degrades the overall acceptability of the sentence. Visually, this corresponds to the upward slope of the red dashed line on the left-hand side of Fig. 4: the presuppositional version is not as good as its non-presuppositional counterpart ($F(1, 13) = 15, p < .01, \eta_p{}^2 = .35$). Crucially however, this degradation is weaker than the degradation due to the addition of a trigger which would require plain accommodation (relevant ANOVAs are reported in Table 3). In other words, symmetric constructions are not entirely acceptable, but they are significantly less degraded than corresponding cases involving accommodation. This suggests that presupposition projection may

Incremental readings vs. Accommodation from embedded positions:		
Conflict	$F(1,13) = 79$,	$p < .001$, $\eta_p{}^2 = .46$
Independent	$F(1,13) = 195$,	$p < .001$, $\eta_p{}^2 = .48$
Incremental readings vs. Accommodation from non-embedded positions:		
Accommodation of *p*:	$F(1,13) = 57$,	$p < .001$, $\eta_p{}^2 = .44$
Accommodation of *not(p)*:	$F(1,13) = 70$,	$p < .001$, $\eta_p{}^2 = .45$

Table 2: This table reports the results from 2×2 ANOVAs comparing the felicity of the trigger when appearing after a clause which justifies it (represented as the difference in acceptability between the sentence with and without the trigger) to the felicity of the trigger in various other configurations with no justification. These configurations first include cases where the triggered presupposition is the same, *p*, with an independent earlier clause *q* or no earlier clause at all (∅). These configurations also include cases where the presupposition is different, *not-p*, combined with the clause p^+ which does not justify the presence of the trigger anymore, or again, no earlier clause altogether (∅).

operate symmetrically, even though this option is costly.

Symmetric readings vs. Accommodation from embedded positions:		
Conflict	$F(1,13) = 13$,	$p < .01$, $\eta_p{}^2 = .33$
Independent	$F(1,13) = 9$,	$p < .01$, $\eta_p{}^2 = .29$
Symmetric readings vs. Accommodation from non-embedded positions:		
Accommodation of *p*:	$F(1,13) = 28$,	$p < .001$, $\eta_p{}^2 = .40$
Accommodation of *not(p)*:	$F(1,13) = 33$,	$p < .001$, $\eta_p{}^2 = .41$

Table 3: This table is the counterpart of Table 2 for the reverse order instead of canonical (the presupposition triggers appear in the first clause of the sentence).

Comparison between orders. The preference for the incremental strategy over the symmetric strategy is revealed by the 2×2 ANOVA restricted to the main cases (±presupposition, ±canonical): $F(1,13) = 45, p < .001, \eta_p{}^2 = .43$.

Different results for different environments. Surprisingly, the results above do not generalize to all 3 environments in the same way (*and*, *but*, *if*). This can be seen from Fig. 5. The results for the *but*-environment are the same as what we saw at the global level (see Table 4). However, some of the differences with various sorts of accommodation disappear for simple conjunctions and conditionals (see statistics in tables 5 and 6, respectively).

These finer-grained analyses do not disconfirm the idea that a symmetric version of the projection algorithm has to be available. Quite generally, the absence of some relevant difference could simply be due to a lack of accuracy of the underlying experimental apparatus. In this particular study, there seems to be a 'floor effect' in the case of conditionals: sentences seem to be judged
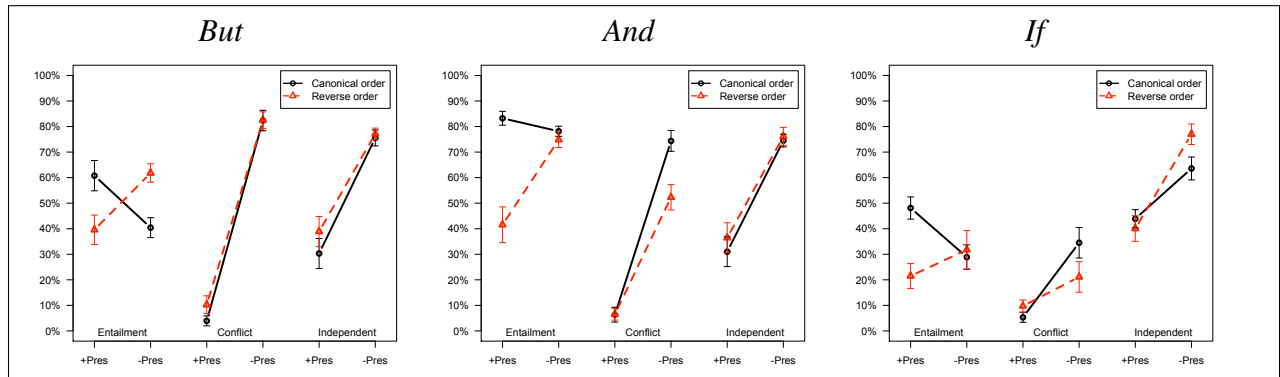
Figure 5: This figure presents the results of Fig. 4 restricted to each environment *but*, *and* and *if*.

	Symmetric readings vs. Accommodation from embedded positions:		
Conflict	$F(1,13) = 61$,	$p < .001$,	$\eta_p{}^2 = .45$
Independent	$F(1,13) = 7.9$,	$p < .05$,	$\eta_p{}^2 = .27$
	Symmetric readings vs. Accommodation from non-embedded positions:		
Accommodation of *p*:	$F(1,13) = 23$,	$p < .001$,	$\eta_p{}^2 = .39$
Accommodation of *not(p)*:	$F(1,13) = 24$,	$p < .001$,	$\eta_p{}^2 = .39$

Table 4: This table is the counterpart of Table 3 restricted to the environment *but*.

	Symmetric readings vs. Accommodation from embedded positions:		
Conflict	$F(1,13) = 1.96$,	$p = .18$,	$\eta_p{}^2 = .11$
Independent	$F(1,13) = .44$,	$p = .52$,	$\eta_p{}^2 = .03$
	Symmetric readings vs. Accommodation from non-embedded positions:		
Accommodation of *p*:	$F(1,13) = 4.4$,	$p = .056$,	$\eta_p{}^2 = .20$
Accommodation of *not(p)*:	$F(1,13) = 4.7$,	$p < .05$,	$\eta_p{}^2 = .21$

Table 5: This table is the counterpart of Table 3 restricted to the environment *and*.

	Symmetric readings vs. Accommodation from embedded positions:		
Conflict	$F(1,13) = .02$,	$p = .89$,	$\eta_p{}^2 = .001$
Independent	$F(1,13) = 8.9$,	$p < .05$,	$\eta_p{}^2 = .28$
	Symmetric readings vs. Accommodation from non-embedded positions:		
Accommodation of *p*:	$F(1,13) = 25$,	$p < .001$,	$\eta_p{}^2 = .40$
Accommodation of *not(p)*:	$F(1,13) = 31$,	$p < .001$,	$\eta_p{}^2 = .41$

Table 6: This table is the counterpart of Table 3 restricted to the environment *if*.

bad even when they do not contain a presupposition trigger. This suggests that these sentences carry additional difficulties independent of presupposition, and this situation might leave no room to detect the fine-grained differences we are after. More specifically, this very low acceptability judgment can be explained by the complexity of these sentences, which contain two negations (see (26)). An illustration is given below, with and without the presupposition trigger; it is apparent that these examples are difficult to parse, independently of the presence of the trigger:

(36)   Comme le reste du ministère de l'Intérieur, nous étions dans l'ombre sur l'identité des protagonistes du braquage de janvier et de celui de mars. Mais je viens de parler au commissaire chargé de l'enquête, et j'en sais maintenant plus.

'Just like everyone else in the Ministry of Internal Affairs, we had no clue about the identity of the protagonists of the January and of the March robberies. But I have just talked to the inspector in charge of the investigations, and now I know more.'

   a. Si Martin n'était pas également absent lors du braquage de mars, alors il n'a pas participé à celui de janvier.

      'If Martin was not absent as well during the March robbery, then he did not take part to the January robbery.'

   b. Si Martin n'était pas absent lors du braquage de mars, alors il n'a pas participé à celui de janvier.

      'If Martin was not absent during the March robbery, then he did not take part to the January robbery.'

Part of these issues will be addressed by the follow-up experiment presented in §4.

3.3 Discussion

First, the present data confirm all non-controversial expectations: accommodation of presuppositions triggered by *too* is not possible. This first set of results confirms our auxiliary assumptions about accommodation and validates the methodology. More importantly, we were able to find a three-way distinction which is in line with the symmetric (mixed) approach of presupposition projection. In short, sentence-internal material M can be used to satisfy a presupposition very clearly if M comes before the trigger, and less straightforwardly if M comes after. But crucially, the presence of late M does improve the acceptability of the sentence. As a side effect of this hierarchy between canonical and non-canonical order, we saw that *Maximize Presupposition!* effects occur only in canonical order. This suggests either that *Maximize Presupposition!* itself is checked incrementally or that the left-to-right processing bias is stronger than this constraint (see Singh 2009 for relevant discussion).

Importantly, our results are more or less conclusive for the different environments we tested. More specifically, although we obtained clear symmetric readings with *but*, we were not able to detect the expected difference between symmetric constructions and some of the control conditions in the case of conjunctions and conditionals. These results could be interpreted in two entirely different ways. From the perspective of dynamic semantics, one could grant that *but* allows for symmetric patterns of presupposition projection, while denying that more standard connectives (*and*, *if*) do. Although it is stipulative, this analysis is made possible by the lexicalist character of dynamic semantics, which can posit at will different patterns of presupposition projection for different connectives.[14] Alternatively, the absence of an effect for *and* and *if* could be due to experimental limitations that could be overcome by refining the experimental design. For instance, in the case of conditionals, we might be dealing with a 'floor effect': the ratings of conditional sentences are very low even in non-presuppositional conditions. This suggests that these sentences carry additional difficulties independent of presupposition, and this situation might leave no room to detect the fine-grained differences we are after. We will argue that the second hypothesis is correct.

In short, the results of this experiment show that symmetric readings exist but they do not prove that they are generally available. In experiment 2, we gathered data to explore the generalization of these results to more environments and to another presupposition trigger.

4   Experiment 2

In this experiment we will prove that (i) the previous results can be extended to other presupposition triggers and (ii) the partial absence of results we observed for some environments may simply come from the relative complexity of the environments in the preceding experimental setting.

4.1   Method

Participants. 11 native speakers of French ranging in age from 18 to 25 years took part in this experiment (8 women and 3 men). All of them were monolingual and none had any prior exposure to formal linguistics.

Instructions, task and measure. These were the same as for experiment 1.

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[14]Note however that it would not be sufficient to postulate a symmetric lexical entry for *but*. The present results do not show that the symmetric reading is the only one (strict symmetric view), but rather that it is a possible and disfavored reading. Hence, even in theories *à la* dynamic semantics, there seems to be a need for a component explaining a left-to-right bias which can be overcome at some cost. In a lexicalist view, this component would play a role only for operators with a symmetric lexical entry, such as *but* maybe. However, once this component is in place, there is little reason to encode the incremental component anywhere else and not to embrace the mixed symmetric view P3.

Items and experimental conditions. The conditions for this experiment were a subset of the conditions for experiment 1. The items appeared on the screen in groups of 4. These groups of 4 were designed to test for accommodation of the presupposition associated with *also* in embedded contexts where the adjacent clause either entailed the presupposition or contradicted it:

(37)   We didn't know much about {the relevant event} but I just learned more.

    a. y did p^+ but x did p too.

    b. y did p^+ but x did p.

    c. y did p^+ but x did not-p too.

    d. y did p^+ but x did not-p.

Here is an actual example:

(38)   Les deux derniers présidents américains ont été impliqués dans le processus de paix au Moyen-Orient.

    'The last two American Presidents were involved in the Middle East Peace Process.'

    a. Bush a fait des catastrophes, mais Clinton avait lui aussi fait des erreurs.

    'Bust did disastrous things, but Clinton made mistakes (him-)too.'

    b. Bush a fait des catastrophes, mais Clinton avait fait des erreurs.

    'Bust did disastrous things, but Clinton made mistakes.'

    c. Bush a fait des catastrophes, mais Clinton avait lui aussi fait des avancées.

    'Bust did disastrous things, but Clinton made progresses (him-)too.'

    d. Bush a fait des catastrophes, mais Clinton avait fait des avancées.

    'Bust did disastrous things, but Clinton made progresses.'

As before, there were several such groups of 4 depending (i) on whether the item was in canonical order (as above) or in reversed order and (ii) on the environment (e.g., *but* above). Overall, these groups of 4 can be described with the 4 following factors: (a) Environments: *but*, *or*, *if*, *each*, *none*, (b) Order: ±canonical, (c) Relation between the clauses: entailment/conflict, and (d) Presupposition: ±presupposition. The factors (a) and (b) were between screen factors, and (c) and (d) were within screen factors. We thus obtain 5(a)×2(b)=10 screens of 2(c)×2(d)=4, i.e. 40 conditions. Each of these 40 conditions was instantiated 5 times with different contents (joint instantiations of p and p^+) which lead to 200 target items. The extensive list of items can be found in appendix B.

Presentation of the items. Participants first saw the list of items discussed in the instructions to allow them to get used to the display and to the task. Then, they saw in random order the lists of 4 items as in (37/38) above. These lists were presented in random order, the items within these lists also appeared in random order.

Differences with experiment 1. There were three main differences with experiment 1. (i) The trigger used here was the French word *aussi* (*too*) used in combination with a strong pronoun to disambiguate its scope as in *lui aussi* (*him-strong too*). (ii) There was only one control for accommodation, namely the control where the content of one clause conflicts with the presupposition of the other. (iii) More environments were tested. The relevant list of transformations used to transform sentences from canonical to non-canonical order keeping the meaning constant is given in (39):[15],[16]

(39) a. But: *A but B* $\longleftrightarrow$ *B but A*

      b. If: *If A, then B* $\longleftrightarrow$ *If not(B), then not(A)*

      c. Or: *not(A) or then B* $\longleftrightarrow$ *B or then not(A)*

      d. Each: *Each not(A) is B* $\longleftrightarrow$ *Each not(B) is A*

      e. None: *No not(A) is B* $\longleftrightarrow$ *No B is not-A*

4.2   Results

The results are reported in Fig. 6. For each environment we want to answer 3 main questions. (Q1) *Does the canonical order allow satisfaction of the presupposition better than accommodation?* This corresponds to the following visual check: on the black solid line, is the slope between the two points on the left-hand side (the acceptability of the trigger in the 'entail' condition) steeper than between the two points on the right-hand side (the acceptability of the trigger in the 'conflict' condition)? Statistically speaking, this corresponds to an interaction computed with a 2×2 ANOVA with main factor ±presupposition and relation=entail/conflict, restricted to the canonical order. (Q2) *Same question with sentences in non-canonical order: does the canonical order allow satisfaction of the presupposition better than accommodation?* where the predictions of the symmetric and incremental approaches differ: only the symmetric approach predicts that the late clause can help improve the acceptability of the trigger. (Q3) *Is the canonical order better than the non-canonical order?* To answer this last question, we need to compare the two slopes on the left-hand side of the graphics, i.e. we need to compute a 2×2 ANOVA with main factor ±presupposition and order=±canonical, restricted to relation='entail'.

Table 7 reports the relevant answers to these questions for each environment. For completeness, the last line reports the results for the full $2\times2\times2$ ANOVA. The results for *but* reproduces the results from experiment 1: both the canonical and non-canonical orders are acceptable (questions Q1 and Q2) even though there is a preference for the canonical order (question Q3). Interestingly, these

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[15]It is worth mentioning that the sentences constructed with *if* and *or* were nearly equivalent.

[16]Notation: *not(A)* indicates that *A* appeared under negation while *not-A* corresponds to the use of an antonym of *A*.

Figure 6: Acceptability judgments for target and control examples in various environments.
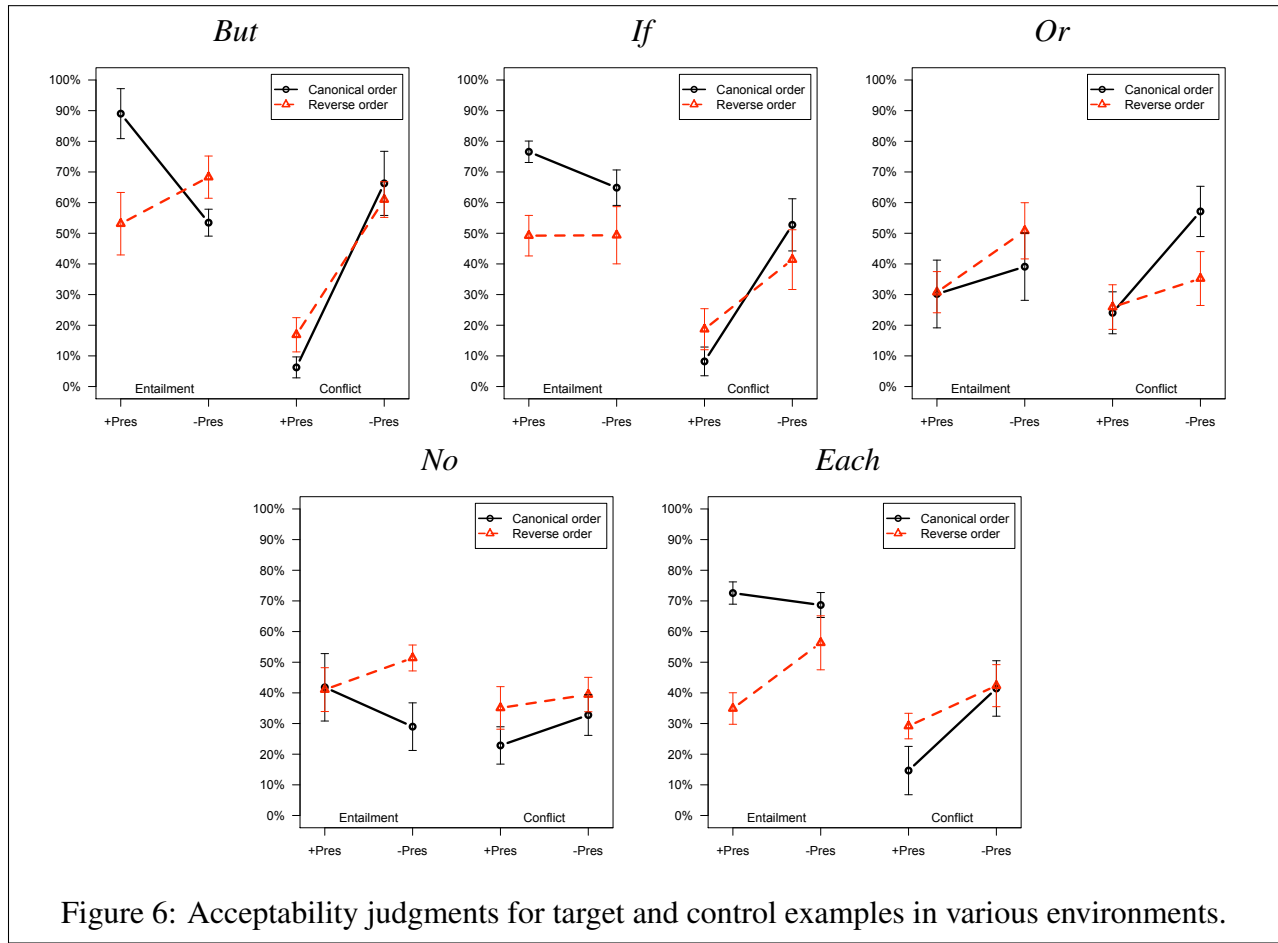
results are now extended to *if*, except that no preference is detected for the canonical order. There is no clear result for *or* and for the quantifiers, except that there is a tendency for the canonical order to be preferred over the non-canonical order.

4.3   Discussion

The present experiment is a replication of the previous experiment with additional environments and a new presupposition trigger and the main result is confirmed: both the canonical and non-canonical orders are possible even though the canonical order is preferred. As for experiment 1, this result is more or less clear depending on the environment. Interestingly, conditionals now behave according to the predictions of the mixed account. This improvement suggests that the absence of result for conditionals in experiment 1 was due to a floor effect. In experiment 1, conditionals were certainly the most complicated sentences, independently from considerations about presupposition. In experiment 2, the quantified cases were more complicated and it is likely that conditionals appeared as relatively better, thus leaving some room for subtle contrasts to appear.

Overall, experiment 2 shows that symmetric presupposition neutralization is real and repro-

but	Q1	yes	$F(1, 10) = 56$,	$p < .001$,	$\eta_p{}^2 = .45$
	Q2	yes	$F(1, 10) = 20$,	$p < .01$,	$\eta_p{}^2 = .40$
	Q3	yes	$F(1, 10) = 21$,	$p < .001$,	$\eta_p{}^2 = .40$
	Full anova:		$F(1, 10) = 20$,	$p < .01$,	$\eta_p{}^2 = .40$
if	Q1	yes	$F(1, 10) = 43$,	$p < .001$,	$\eta_p{}^2 = .44$
	Q2	yes	$F(1, 10) = 10$,	$p < .01$,	$\eta_p{}^2 = .34$
	Q3	?	$F(1, 10) = .26$,	$p = .62$,	$\eta_p{}^2 = .02$
	Full anova:		$F(1, 10) = 20$,	$p < .01$,	$\eta_p{}^2 = .40$
or	Q1	?	$F(1, 10) = .51$,	$p = .49$,	$\eta_p{}^2 = .04$
	Q2	?	$F(1, 10) = .16$,	$p = .69$,	$\eta_p{}^2 = .01$
	Q3	?	$F(1, 10) = .18$,	$p = .68$,	$\eta_p{}^2 = .01$
	Full anova:		$F(1, 10) = .3$,	$p = .59$,	$\eta_p{}^2 = .02$
no	Q1	yes	$F(1, 10) = 5.7$,	$p < .05$,	$\eta_p{}^2 = .26$
	Q2	?	$F(1, 10) = .14$,	$p = .71$,	$\eta_p{}^2 = .01$
	Q3	yes	$F(1, 10) = 5.4$,	$p < .05$,	$\eta_p{}^2 = .26$
	Full anova:		$F(1, 10) = 5.8$,	$p < .05$,	$\eta_p{}^2 = .27$
each	Q1	tendency	$F(1, 10) = 4.8$,	$p = .052$,	$\eta_p{}^2 = .24$
	Q2	?	$F(1, 10) = .1$,	$p = .75$,	$\eta_p{}^2 = .01$
	Q3	tendency	$F(1, 10) = 4.6$,	$p = .057$,	$\eta_p{}^2 = .24$
	Full anova:		$F(1, 10) = 3.1$,	$p = .10$,	$\eta_p{}^2 = .19$

Table 7: Answers to the three main questions described in §4.2 and corresponding statistical results for each of the environments which were tested: (Q1) *Does the canonical order allow satisfaction of the presupposition better than accommodation?* 2×2 ANOVA: ±presupposition × relation=entail/conflict, restricted to the canonical order. (Q2) *Same question with sentences in non-canonical order: does the canonical order allow satisfaction of the presupposition better than accommodation?* (Q3) *Is the canonical order better than the non-canonical order?* 2×2 ANOVA: ±presupposition × order=±canonical, restricted to relation='entail'.

ducible with various presupposition triggers.

5   Conclusions

By collecting judgments from naïve informants, we have attempted to settle on empirical grounds the debate between incremental and symmetric accounts of presupposition projection.

Our main conclusion is that presuppositions can, at some cost, be justified symmetrically: information that comes after a trigger can be used to satisfy the corresponding presupposition, but when this happens the sentence has an intermediate acceptability status.

On a theoretical level, this observation is hard to reconcile with the analysis of presupposition offered in dynamic semantics. A dynamic lexical entry encodes in an undifferentiated whole the

semantic behavior of an operator together with the left-right bias we typically observe in presupposition projection. Because the left-right bias is inseparable from the very meaning of the operator, it is unexpected that one can overcome the bias while preserving the semantic content of the operator.

By contrast, our observations support modular accounts in which the left-right bias is a separate component of presupposition computation. Several theoretical directions are compatible with this finding. First, our results are in the spirit of Stalnaker's pragmatic account of presupposition projection (1974), which took left-right asymmetries to arise because sentences are pronounced in time — with the result that belief update proceeds in an incremental fashion. Although Stalnaker did not discuss symmetric data, it is not unnatural to posit in his framework that speakers can, at some cost, wait for an entire sentence or discourse before they update their beliefs—which would yield symmetric patterns of presupposition projection. Second, our findings are compatible with a number of new theories of presupposition projection, which take the left-right asymmetry to stem from a separate module of presupposition projection, possibly one that is due to processing constraints (Schlenker 2007, 2008a, 2009a, Chemla 2009c, George 2008a,b, Fox 2008).

Finally, our analysis shows that an experimental paradigm based on magnitude estimation can elicit from naïve subjects some very subtle semantic judgments which are otherwise controverted among theoreticians.

A   Instructions

Bonjour et merci pour votre participation. Imaginez la situation suivante:

Lors d'une réunion inter-ministérielle, des conseillers techniques échangent leurs expériences, leurs prévisions et leurs avis. Nous allons vous présenter des séries de phrases prononcées par des conseillers différents. Dans chaque cas, nous vous présenterons la phrase qu'énonce le conseiller au moment où il prend la parole, suivie de quatre continuations possibles.

Nous vous demandons d'indiquer dans quelle mesure la continuation vous semble naturelle ou au contraire bizarre dans ce contexte. Voici un exemple:

> Nous avons récemment évoqué à Bruxelles la situation militaire de la Grande Bretagne dans le Golfe.
>
> (i)   La Grande-Bretagne va demander de l'aide.
>
> bizarre   naturel
>
> (ii)   Elle va demander l'aide des Etats-Unis.
>
> bizarre   naturel
>
> (iii)   Il va envoyer des troupes supplémentaires.
>
> bizarre   naturel
>
> (iv)   Ils vont envoyer des troupes supplémentaires.
>
> bizarre   naturel

Pour indiquer à quel point chaque continuation est naturelle ou bizarre lorsqu'elle suit la phrase qui apparaît en haut de l'encadré, vous utiliserez la souris pour faire varier la longueur de la ligne rouge qui s'affiche sous chaque exemple. Dans le cas ci-dessus, vous pourrez par exemple arriver au résultat suivant (mais ce n'est qu'une réponse possible parmi beaucoup d'autres):

Nous avons récemment évoqué à Bruxelles la situation militaire de la Grande Bretagne dans le Golfe.

(i) La Grande-Bretagne va demander de l'aide.

bizarre   *naturel*

(ii) Elle va demander l'aide des Etats-Unis.

bizarre   *naturel*

(iii) Il va envoyer des troupes supplémentaires.

bizarre   *naturel*

(iv) Ils vont envoyer des troupes supplémentaires.

bizarre   *naturel*

Il n'y a pas de réponse correcte ou de réponse incorrecte; nous vous demandons de suivre votre intuition. Par exemple, certains peuvent préférer la phrase (i) à la phrase (ii), d'autres préférer la phrase (ii) à la phrase (i) (comme c'est indiqué ci-dessus); de même, les écarts éventuels entre les phrases peuvent varier d'un individu à l'autre. Nous vous demandons de nous donner votre intuition sur le caractère naturel ou bizarre de la forme de la phrase, et non de juger le contenu des opinions énoncées.

Dernières remarques avant de commencer:

• Les exemples sont absolument indépendants. Oubliez-les au fur et à mesure. Ne portez votre attention que sur la phrase prononcées, surtout pas sur les informations lues auparavant. N'utilisez vos réponses précédentes que de façon implicite pour jauger la barre rouge.

• Vous aurez peut-être l'impression d'avoir déjà vu certains exemples (beaucoup se ressemblent). Ceci n'a aucune importance, répondez toujours en suivant votre jugement intuitif à chaque exemple.

• Certaines formulations semblent compliquées; c'est uniquement pour éviter certaines ambiguïtés. Autant que possible, lisez chaque phrase d'un trait comme si un des conseillers techniques la prononçait.

• Gardez votre main sur la souris et répondez aussitôt que vous vous serez fait un avis.

• Plusieurs phrases s'affichent à l'écran simultanément. Nous vous demandons de juger ces phrases les unes après les autres dans l'ordre où elles apparaissent. Vous pourrez revenir sur vos jugements si c'est réellement nécessaire, mais tenez-vous en autant que possible à votre PREMIERE intuition.

English translation

Hello and thank you for your participation. Imagine the following situation:

During an inter-ministry meeting, technical advisors talk about their experiences, their expectations, their opinions. You will see lists of sentences uttered by these different advisors. In each case, we will present the sentence uttered by the advisor at the moment when he starts talking, followed by 4 different possible continuations.

We ask you to indicate to what extent the continuation seems natural or weird to you in this context. Here is an example:

See Fig. 2

680   To indicate to what extent each continuation is natural or weird when it follows the sentence on top of the frame, you may use the mouse to set the length of the red line displayed under each example. In the example given above, you could for instance arrive at the following result (but this is only one possible answer among many others):

See Fig. 2

685   There is no correct or incorrect answer; we ask you to follow your own intuition. For instance, some may prefer sentence (i) to sentence (ii), other may prefer sentence (ii) to sentence (i) (as indicated above); similarly, potential differences between sentences may vary from one person to another. We ask you to provide you intuition about the naturalness or weirdness of the form of the sentence, and not to evaluate the given opinions.

690   Last remark before starting:
• The examples are absolutely independent. Forget them as you go along. Focus only on the sentences uttered, certainly not on the information you read earlier. Only use your previous answers implicitly to calibrate the way you use the red line.
• You may feel that you see the same examples several times (many look like each other). This is
695   not important, always answer following your own intuitive judgment for each example.
• Some formulations may seem complicated; this is only to avoid some ambiguities. As far as possible, read each sentence at once as if one of the technical advisor pronounced it.
• Keep your hand on the mouse and answer as soon as you made up your mind.
• Several sentences will show simultaneously on the screen. We ask you to judge these sentences
700   one after the other in the order they appear. You may come back to your judgments if it is really necessary, but stick to your FIRST intuition as much as possible.

B   Experimental items

B.1   Experiment 1

B.1.1   One 'content' in detail

705   We first give a full set of items based on a single "content". Let us start with the non-embedded examples:

(40)   Comme le reste du ministère de l'Intérieur, nous étions dans l'ombre sur l'identité des protagonistes du braquage de janvier et de celui de mars. Mais je viens de parler au commissaire chargé de l'enquête, et j'en sais maintenant plus.

710   'Like the rest of the Ministry of Internal Affairs, we were in the dark as to the identity of the protagonists of the January and of the March robberies. But I have just talked to the inspector in charge of the case, and now I know a bit more.'

   a.   Martin était également présent lors du braquage de mars.

     'Martin was present during the robbery of March too.'

715   b.   Martin était présent lors du braquage de mars.

     'Martin was present during the robbery of March.'

     c. Martin était également absent lors du braquage de mars.

        'Martin was absent during the robbery of March too.'

     d. Martin était absent lors du braquage de mars.

720   'Martin was absent during the robbery of March.'

Keeping the content constant, these examples were then embedded in *but*-sentences, conjunctions and conditionals both in the canonical and non-canonical order for each of these environments. For the *but*-environments in canonical order, we obtain the following (the first introductory sentence is always the same and it is not repeated here):

725 (41) a. Martin était le meneur du braquage de janvier, mais il était également présent lors de celui de mars.

         'Martin was the leader of the January robbery, but he was present during the March robbery too.'

      b. Martin était le meneur du braquage de janvier, mais il était présent lors de celui de mars.

         'Martin was the leader of the January robbery, but he was present during the March robbery.'

      c. Martin était le meneur du braquage de janvier, mais il était également absent lors de celui de mars.

730   'Martin was the leader of the January robbery, but he was absent during the March robbery too.'

      d. Martin était le meneur du braquage de janvier, mais il était absent lors de celui de mars.

         'Martin was the leader of the January robbery, but he was absent during the March robbery.'

      e. Martin dit qu'il est innocent, mais il était également présent lors du braquage de mars.

         'Martin says he is innocent, but he was present during the March robbery too.'

735   f. Martin dit qu'il est innocent, mais il était présent lors du braquage de mars.

         'Martin says he is innocent, but he was present during the March robbery.'

The non-canonical order can be derived automatically from this by exchanging the two clauses, here is a condensed version of it:

  (42) a-d. Martin était (également/∅) (présent/absent) lors du braquage de mars, mais il était le meneur de celui de
740   janvier.

          'Martin was the leader of the January robbery, but he was (present/absent) during the March robbery (too/∅).'

      e/f. Martin était (également/∅) présent lors du braquage de mars, mais il dit qu'il est innocent.

          'Martin says he is innocent, but he was present during the March robbery (too/∅).'

745   The examples involving conjunctions can be obtained by replacing *mais/but* with *et/and* above. To construct felicitous conditional sentences, the content was slightly changed, in this cas we obtained the following examples:

  (43) a-d. Si Martin a participé au braquage de janvier, alors il était (également/∅) (présent/absent) lors de celui de
          mars.

750   'If Martin was involved in the January robbery, then he was (present/absent) during the March robbery
          (too/∅).'

      e/f. Si ce revolver est à Martin, alors il était (également/∅) présent lors du braquage de mars.

          'If this gun is Martin's, then he was present during the March robbery (too/∅).'

  (44) a-d. Si Martin n'était pas (également/∅) (présent/absent) présent lors du braquage de mars, alors il n'a pas
755   participé à celui de janvier.

          'If Martin was not (present/absent) during the March robbery (too/∅), then he was not involved in the
          January robbery.'

      e/f. Si Martin n'était pas (également/∅) présent lors du braquage de mars, alors ce revolver n'est pas à lui.

          'If Martin was not present during the March robbery (too/∅), then this gun is not his'.'

B.1.2 The other "contents"

For the rest of the "contents", we only provide the main building blocks with the *but*-sentences and the conditionals in canonical order.

(45) Nous ne savions rien sur la façon dont les dirigeants syndicaux se sont comportés lors des négociations secrètes de mai et juin derniers. Mais je viens d'en savoir plus à ce sujet.

'We did not know anything about how the union leaders behaved during the secret negotiations of May and June. But I have just learned more about it.'

a-d. Durand a fait d'immenses concessions en mai, mais il s'est (également/∅) montré (flexible/inflexible) en juin.

'Durand offered huge concessions in May, but he showed some (flexibility/inflexibility) in June (too/∅).'

e/f. Les motivations de Durand sont difficiles à cerner, mais il s'est (également/∅) montré flexible en juin.

'Durand's objectives are difficult to understand, but he displayed some flexibility in June (too/∅).'

(46) a-d. Si Durand a fait des concessions en mai, alors il s'est (également/∅) montré flexible/inflexible en juin.

'If Durand offered huge concessions in May, then he displayed some (flexibility/inflexibility) in June (too/∅).'

e/f. Si Durand est raisonnable, alors il s'est (également/∅) montré flexible en juin.

'If Durand is reasonable, then he displayed some flexibility in June (too/∅).'

(47) Nous ne connaissions pas l'identité des grands patrons qui ont soutenu notre parti en 2002 et en 2008. Mais après avoir analysé les mouvements de fonds vers le compte du parti, j'en sais un peu plus.

'We did not know the identity of business leaders who helped our party in 2002 and 2008. But after analyzing money transfers to the party's account, I know more.'

a-d. Dupont nous a versé une fortune en 2002, mais il nous a (également/∅) (aidés/laissés tomber) en 2008.

'Dupont gave us a fortune in 2002, but he (helped us/let us down) in 2008 (too/∅).'

e/f. Dupont a un compte très mal approvisionné, mais il nous a (également/∅) aidés en 2008.

'Dupont's account is rather depleted, but he helped us in 2008 (too/∅).'

(48) a-d. Si Dupont nous a versé de l'argent en 2002, alors il nous a (également/∅) (aidés/laissés tomber) en 2008.

'If Dupont gave us money in 2002, then he (helped us/let us down) in 2008 (too/∅).'

e/f. Si Dupont est notre contributeur le plus généreux, alors il nous a (également/∅) aidés en 2008.

'If Dupont is our most generous contributor, then he helped us in 2008 (too/∅).'

(49) Le ministre de la Défense m'a demandé quels informateurs afghans nous ont, au péril de leur vie, aidés dans notre lutte contre les Talibans en 2006 et 2007. La DGSE vient de me donner quelques informations partielles.

'The Ministry of Defense asked me which afghan informants have, at the peril of their lives, helped us in our fight against the Talibans in 2006 and 2007. The DGSE[17] just gave me some partial information.'

a-d. Ahmed nous a donné une information vitale en 2006, mais il nous a (également/∅) (contactés/oubliés) en 2007.

'Ahmed gave us a vital information in 2006, but he (contacted/forgot) us in 2007 (too/∅).'

e/f. Ahmed connaît très bien le nord du pays, mais il nous a (également/∅) oubliés en 2007.

'Ahmed knows the North of the country very well, but he contacted us in 2007 (too/∅).'

(50) a-d. Si Ahmed nous a renseignés en 2006, alors il nous a (également/∅) (contactés/oubliés) en 2007.

'If Ahmed provided information in 2006, then he (contacted/forgot) us in 2007 (too/∅).'

e/f. Si Ahmed est notre informateur le plus fiable, alors il nous a (également/∅) contactés en 2007.

'If Ahmed is our most reliable informant, then he contacted us in 2007 (too/∅).'

---

[17]DGSE: France's foreign intelligence agency.

(51)   Vous m'avez demandé ce que l'on sait du cours des start-ups pour les années 2006 et 2007.

'You asked me what we know about the value of stocks of start-up companies for 2006 and 2007.'

a-d.   Leur cours avait fait un bond énorme en 2006, mais il a (également/∅) (progressé/stagné) en 2007.

'Their price made a huge leap in 2006, but it (increased/stagnated) in 2007 (too/∅).'

e/f.   Leur cours est un indice économique essentiel, mais il a (également/∅) progressé en 2007.

'Their price is an essential economical index, but it improved in 2007 (too/∅).'

(52)   a-d.   Si leur cours a fait un bond énorme en 2006, alors il a (également/∅) (progressé/stagné) en 2007.

'If their price made huge progresses in 2006, then it (improved/remained flat) in 2007 (too/∅).'

e/f.   Si leur cours reflète la santé économique du pays, alors il a (également/∅) progressé en 2007.

'If their price reflects the economical health of the country, then it improved in 2007 (too/∅).'

B.2   Experiment 2

But-sentences

(53)   Dans la prochaine négociation budgétaire, le Président va demander à seulement deux ministères de faire des efforts.

'In the next budget negotiation, the President will ask only two ministries to make some efforts.'

a-d.   Le ministre de l'économie va faire les concessions les plus importantes, mais le ministre du travail va (lui aussi/∅) se montrer (flexible/inflexible).

'The Ministry of Economy will make the most important concessions, but the Minster of Labour will display some (flexibility/inflexibility) (too/∅).'

(54)   Lors de la dernière réunion de la Commission Européenne, la situation de seulement deux pays a été discutée.

'During the last meeting of the European Comission, the situation of only two countries was discussed.'

a-d.   L'Italie a été sermonnée, mais la France a (elle aussi/∅) été (critiquée/félicitée).

'Italy was reprimanded, but France was (criticized/congratulated) (too/∅).'

(55)   On m'a demandé mes prévisions concernant les prochaines négociations salariales entre le gouvernement, le patronat et les syndicats.

'I was asked about my predictions concerning the next salary negotiations between the government, the employers and the unions.'

a-d.   Le patronat va faire les concessions les plus grandes, mais les syndicats vont (eux aussi/∅) se montrer flexibles/inflexibles.

'The employers will make the greatest concessions, but the unions will display some (flexibility/inflexibility) (too/∅).'

(56)   Je vais vous dire ce que je pense des deux personnes les plus puissantes de notre pays.

'Let me tell you what I think about the two most powerful people in our country.'

a-d.   Le Président est caractériel, mais le Premier Ministre est (lui aussi/∅) d'un tempérament (difficile/facile).

'The President has a tough personality, but the Prime Minister has a (difficult/easy) temper (too/∅).'

(57)   Les deux derniers présidents américains ont été impliqués dans le processus de paix au Moyen-Orient.

'The last two American Presidents were involved in the Middle East Peace Process.'

a-d.   Bush a fait des catastrophes, mais Clinton avait (lui aussi/∅) fait des (erreurs/avancées).

'Bust did disastrous things, but Clinton made (mistakes/progresses) (too/∅).'

Or and *If*-sentences

(58) A l'exception de deux ministères, aucun budget ne va connaître de hausse.

'Except for two Ministries, no budget will be increased.'

a-d. Le ministère de la Recherche n'obtiendra pas d'augmentation budgétaire, ou alors le ministère de l'Education verra (lui aussi/∅) son budget (augmenter/diminuer).

'The Ministry of Research will not get any budget increase, or else the Ministry of Education will see his budget (increase/decrease) (too/∅).'

a-d. Si le ministère de la Recherche obtient une augmentation budgétaire, le ministère de l'Education verra (lui aussi/∅) son budget (augmenter/diminuer).

'If the Ministry of Research sees its budget increase, the Ministry of Education will see his budget (increase/decrease) (too/∅).'

(59) Seule une partie des armées va pouvoir renouveler son matériel.

'Only part of the Armies will be able to obtain new materials.'

a-d. La marine ne recevra pas de navires, ou alors l'armée de terre va (elle aussi/∅) (réussir/échouer) à obtenir des équipements.

'The Navy will not receive boats, or else the army will (succeed/fail) to obtain equipments (too/∅).'

a-d. Si la marine reçoit des navires, l'armée de terre va (elle aussi/∅) (réussir/échouer) à obtenir des équipements.

'If the Navy receives boats, the army will (succeed/fail) to obtain equipments (too/∅).'

(60) Le prochain sommet européen va remettre à plat tous les avantages acquis.

'The next European summit will will reconsider all past privileges.'

a-d. La Pologne n'obtiendra pas de subventions, ou alors la France va (elle aussi/∅) se voir (accorder/refuser) des privilèges.

'Poland will not obtain subventions, or else France will be (given/refused) privileges (too/∅).'

a-d. Si la Pologne obtient des subventions, la France va (elle aussi/∅) se voir (accorder/refuser) des privilèges.

'If Poland obtains subventions, France will be (given/refused) privileges (too/∅).'

(61) L'évolution du salaire des fonctionnaires va être remise à plat.

'The evolution of the salaries of government employees will be reconsidered.'

a-d. Les infirmières ne seront pas augmentées, ou alors les salaires des enseignants seront (eux aussi/∅) (revalorisés/bloqués).

'The nurses will not be given a raise, or else the salary of the teachers will be (increased/blocked) (too/∅).'

a-d. Si les infirmières sont augmentées, les salaires des enseignants seront (eux aussi/∅) (revalorisés/bloqués).

'If the nurses are given a raise, the salary of the teachers will be (increased/blocked) (too/∅).'

(62) On ne sait pas encore avec certitude quels ministres vont assister à la prochaine réunion de l'UMP.

'We don't know yet for sure which ministers will attend the next meeting of the UMP.[18]'

a-d. Le ministre des Affaires Etrangères n'y sera pas convié, ou alors le ministre du Travail y sera (lui aussi/∅) (présent/exlus).

'The Minister of Foreign Affairs won't be invited, or else the Minister of Labor will be (present/excluded) (too/∅).'

a-d. Si le ministre des Affaires Etrangères y est convié, le ministre du Travail y sera (lui aussi/∅) (présent/exclus).

'If the Minister of Foreign Affairs is invited, the Minister of Labor will be (present/excluded) (too/∅).'

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[18]UMP: the ruling party.

***No-* and *Each*-sentences**

We report the canonical and non-canonical orders for *No*-sentences to make explicit the choice of the antonym. We only report the canonical order for *Each*-sentences because the non-canonical order can be obtained automatically from it (see (39)).

885 (63) Nous venons d'établir une nouvelle règle d'organisation.

'We just established a new organization rule.'

a-d. Aucun ministre qui ne gardera pas son directeur de cabinet ne fera en sorte que son attaché parlementaire soit (lui aussi/∅) (remplacé/maintenu en fonctions).

'No Minister who will keep its chief will ensure that its parliamentary assistant is (replaced/kept) (too/∅).'

890 a-d. Aucun ministre qui ne fera pas en sorte que son attaché parlementaire soit (lui aussi/∅) remplacé ne (changera/gardera) de directeur de cabinet.

a-d. Chaque ministre qui ne gardera pas son directeur de cabinet fera en sorte que son attaché parlementaire soit (lui aussi/∅) (remplacé/maintenu en fonctions).

(64) Après discussion, nous avons choisi une nouvelle ligne de conduite pour les conférences de presse.

895 'After some discussion, we adopted a new policy for press conferences.'

a-d. Aucun attaché de presse qui n'interdira pas l'usage des appareils photos ne fera en sorte que les caméras soient (elles aussi/∅) (tolérées/exclues).

'No press attaché who doesn't forbid the use of cameras will ensure that video cameras are (tolerated/excluded) (too/∅).'

900 a-d. Aucun attaché de presse qui ne fera pas en sorte que les caméras soient (elles aussi/∅) tolérées (ne permettra/n'interdira) l'usage des appareils photos.

a-d. Chaque attaché de presse qui n'interdira pas l'usage des appareils photos fera en sorte que les caméras soient (elles aussi/∅) (autorisées/exlues).

(65) Nous avons envoyé de nouvelles instructions dans les préfectures.

905 'We sent new instructions to the *prefectures*.'

a-d. Aucun préfet qui ne laissera pas les sans-papiers tranquilles ne fera en sorte que les petits délinquants soient (eux aussi/∅) (inquiétés/laissés en paix).

'No *prefet* who will not leave the illegal immigrants in peace will ensure that the delinquents are (harassed/left in peace) (too/∅).'

910 a-d. Aucun préfet qui ne fera pas en sorte que les petits délinquants soient (eux aussi/∅) inquiétés ne (s'en prendra aux sans-papiers/laissera les sans-papiers tranquilles).

a-d. Chaque préfet qui ne laissera pas les sans-papiers tranquilles fera en sorte que les petits délinquants soient (eux aussi/∅) (inquiétés/laissés en paix).

(66) Je vais vous indiquer quelle a été l'attitude du gouvernement vis-à-vis de la presse.

915 'I will tell you what was the government's attitude towards the Press.'

a-d. Aucun ministre qui n'a pas caché son propre montant d'imposition n'a fait en sorte que les revenus de ses proches soient (eux aussi/∅) (connus/dissimulés).

'No Minister who didn't hide his own tax level ensured that his relatives' income are (known/hidden) (too/∅).'

920 a-d. Aucun ministre qui n'a pas fait en sorte que les revenus de ses proches soient (eux aussi/∅) connus n'a (publié/caché) son propre montant d'imposition.

a-d. Chaque ministre qui n'a pas caché son propre montant d'imposition a fait en sorte que les revenus de ses proches soient (eux aussi/∅) (connus/dissimulés).

(67) D'après ce que j'ai appris du MEDEF, les PME vont adopter la ligne de conduite suivante.

925   'According to what I learned from the MEDEF[19], the PMEs[20] will adopt the following attitude.'

a-d. Aucune entreprise qui ne laissera pas stagner le salaire du PDG ne fera en sorte que la rémunération du DRH soit (elle aussi/∅) (augmentée/bloquée).

'No company which will not leave the income of the boss constant will ensure that the salary of the HR director is (increased/blocked) (too/∅).'

930   a-d. Aucune entreprise qui ne fera pas en sorte que la rémunération du DRH soit (elle aussi/∅) augmentée ne (revalorisera/laissera stagner) le salaire du PDG.

a-d. Chaque entreprise qui ne laissera pas stagner le salaire du PDG fera en sorte que la rémunération du DRH soit (elle aussi/∅) (augmentée/bloquée).

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[19]MEDEF: French union of employers.
[20]PME: acronym for small companies.

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