

# Pragmatic accommodation

Mikhail Kissine

Center for Research in Linguistics LaDisco, Université libre de  
Bruxelles  
mkissine@ulb.ac.be

Myrto Pantazi

Department of Psychology, University of Cambridge  
m.yr.tous@hotmail.com

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## **Abstract**

Under the standard Lewis-Stalnaker view, accommodation is a pragmatic solution to a coordination problem. Accommodation processes are triggered when a speaker uses an expression that requires that the conversational background contain some hitherto unmentioned information. Accommodation, then, is not automatic; it is a process addressees engage in to adjust to the course of conversation. However, it is not entirely straightforward to predict when or which presuppositions will be accommodated. This issue is complicated by the existence of the so-called *informative presuppositions*, which carry new and at-issue information. On the one hand, recent cross-linguistic and experimental research programs suggest that acceptability of presupposition accommodation varies relative to the kind of presupposition trigger involved. On the other hand, there exists a whole tradition in experimental social psychology, which suggests that presuppositions are automatically accommodated, even though they are false.

keywords: presupposition, accommodation, assertion, coordination problem, hard- vs. soft triggers, context, belief, definite description, factive verbs

## 1 Introduction

The term *presupposition* aptly carries on its sleeve the main characteristic of the communicational mechanism it denotes. Virtually all conceptions of presupposition since Frege (1892) and Strawson (1950) share the following assumption: to say that an utterance  $\phi$  presupposes  $\psi$  entails that  $\phi$  cannot be assigned the truth-value *true* or *false* without it being established, in some sense or another, that  $\psi$  is true. In classic truth-conditional semantic frameworks, this means that whenever  $\psi$  isn't presupposed, any token of  $\phi$  results in an interpretational failure.

A striking property of the actual communication practice, underscored by Lewis (1979), is that such failures do in fact rarely occur in real life. Imagine that a colleague with whom you are not exceedingly familiar arrives late at a meeting and utters (1) to excuse herself.

- (1) I'm awfully sorry, my car wouldn't start this morning.

As it happens, you work at a big European city university, where it is very common for faculty not to own a car and to rely on public transportation. So nothing in the context of utterance of (1) makes it shared assumption that the speaker owns a car. Now, on any theory of presupposition the phrase *my car* triggers the existential presupposition that there exists a car owned by the speaker. One should expect, therefore, that this presuppositional failure would make (1) uninterpretable: it is difficult to make sense of (1) (at least, when it is taken literally) if the speaker doesn't have a car. And yet, points out Lewis, we routinely comprehend such utterances; in doing so, we accept the presupposition as if it were already taken for granted. You may believe or not your colleague's excuse, but you would probably not question the assumption that she owns a car. To characterise this process, Lewis coined the term *presupposition accommodation*.

Lewis's discussion of presupposition accommodation takes place within Stalnaker's (1978; 2002) theory of assertion, which constitutes the bedrock of most contemporary conceptions of presupposition. In the next section, we will discuss in more detail how the idea of presupposition accommodation fits

in within this framework. Under the Lewis-Stalnaker view, accommodation is a pragmatic solution to grammatical constraints on admissible contexts of use. Accommodation, then, is not an automatic adjustment; it is something addressees do in order to adjust to the course of conversation. Two major consequences follow:

- C1 There must be boundary conditions on presupposition accommodation; that is, under some conditions, presupposition accommodation shouldn't happen.
- C2 Presupposition accommodation amounts to a change in conversationalists' mental states, and more particularly, in the addressee's representation of the conversational background. Presuppositions are usually defined as mutually accepted propositions, that is, in terms weaker than mutual beliefs; hence, presupposition accommodation should not necessarily result in changes of the addressees beliefs.

Sections 3 and 4 centre on the first point. Of course, presupposition accommodation is not entirely mechanistic. For instance, in order to render the conversational move of the speaker of (2) acceptable, the addressee needs to accommodate a very implausible presupposition.

- (2) I'm awfully sorry, my camel wouldn't wake up this morning.

Yet it is not entirely straightforward to predict when presuppositions should or should not be accommodated. Accommodation is both a very common and powerful phenomenon. As we will see in Section 3, presupposition may even be *informative*, and exploit accommodation mechanisms to carry new and at-issue information (see Chapter *Dimensions of Meaning*). Another crucial set of evidence, discussed in Section 4, is that while some presuppositions may always be accommodated — and indirectly convey central, at-issue, information — accommodation of others appears to be much less acceptable. Based on such data, Tonhauser et al. (2013) propose that the former shouldn't be considered as presuppositions at all. Since the remaining presuppositions, such as those triggered by definite descriptions, are hard to accommodate, the very notion of presupposition accommodation threatens to become vacuous. Somehow different conclusions may be drawn from a tradition in experimental social psychology, initiated by Elizabeth Loftus and surprisingly seldom discussed in this connection. These studies, presented in Section 5, show that presuppositions triggered by definite descriptions are

tacitly accommodated, even when they are false. In addition to indicating that presupposition accommodation is close to automatic, this literature also suggests that accommodation results in a long-term modification of people's beliefs about the world, thus being much stronger than what is suggested by Stalnaker's theory (cf. C2).

## 2 Lewis and Stalnaker on presupposition

Stalnaker's (1978) hugely influential picture of communication may be summarised in three main points:

1. A state of information participants in the conversation share about the world at a moment  $t$  may be represented as the sum of possibilities left open at  $t$ . This set, which may be modelled as a set of possible worlds, is called the *the conversational background*.<sup>1</sup>
2. The conversational background is determined by the set of propositions that participants to the conversation accept as true. The propositions mutually accepted as true are *presuppositions*. In other words, at each time point of the conversation  $t$ , the conversational background is determined by the presuppositions in force at  $t$ .<sup>2</sup>
3. The goal shared by all participants in a conversation is to reduce uncertainty about the world. Now, the larger the presupposition set, the smaller is the number of the possibilities left open given the presupposition set — the smaller the conversational background. The aim of assertions is then to add content to the presupposition set; once the content of an assertion has been added to the presupposition set at a time point  $t_{+1}$ , the conversational background shrinks accordingly relative to its state at an earlier time  $t$ .

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<sup>1</sup>The same notion is variously referred to in the literature as *context set*, *common ground* or *conversational score*.

<sup>2</sup>Note that the notion of mutual acceptance is weaker than that of belief (see, for instance, Kaplan 1981). Stalnaker's idea is that some bits of information may be held as true for the needs of the conversation without one or even all parties actually believing it. See Section 5 for further discussion.

In Stalnaker's theory, then, presuppositions are assumptions shared during conversation and asserted content is a candidate presupposition.<sup>3</sup> In addition to determining the conversational background, presuppositions also constrain the range of permissible expressions. There exists a number of 'presupposition triggers', viz. of expressions that are felicitously used only if a certain content is presupposed. To cite two examples (see Chapter *Presupposition projection* for more), in (3) the phrase *my fiancé* triggers the presupposition that the speaker has a fiancé; the verb *regret* triggers the presupposition that the speaker in (4) performed the action described by its complement. Another way to put this is to say that the felicitous use of (3) requires that it should be mutually accepted that the speaker has a fiancé, and that the felicitous use of (4) requires that the speaker should have performed the action described by the complement of *regret*.

(3) My fiancé enjoys surfing.

(4) I regret having criticised the department chair.

In Stalnakerian terms this means that an attempt, at  $t$ , to restrict the conversational background by, say, asserting (3) requires that the presupposition set at  $t$  contains the proposition that the speaker has a fiancé. If this condition fails to be met, the utterance of (3) results in conversational infelicity (Stalnaker 2002).

Note that such a failure is very different from the speaker's assertion being rejected. The addressee may explicitly signal that he rejects the asserted content, which, as a consequence, will not be taken as mutually accepted; but rejection entails that the speaker's assertion has been a successful and valid conversational move. By contrast, if the conversational background fails to satisfy the presuppositional conditions triggered by the possessive phrase *my fiancé*, it wouldn't even be possible to determine what kind of content the speaker was trying to add to the presupposition set. Yet, as we have seen in the Introduction, speakers routinely utter sentences such as (3) in contexts that do not meet the relevant presuppositional conditions. (For instance, (3) is quite plausible as an explanation given by someone you just met on a plane about her frequently going to Portugal for holidays.)

One may think of presuppositions in terms of constraints on the assertability of sentences in which they occur: a sentence may be used to perform

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<sup>3</sup>We will see in the next section that the the boundary between assertion and presupposition has been the target those sceptical of the notion of presupposition accommodation.

an assertion only if certain propositions belong to the presupposition set. If the presuppositional constraints imposed by the linguistic structure of an assertion are not satisfied, this assertion would then compromise further development of the verbal exchange. The fundamental insight of Gricean pragmatics is that conversational exchanges are best thought of as steps within a cooperative activity, aimed at achieving a shared goal, such as building up a conversational background (Grice 1975). Presuppositional failure then constitutes an obstacle to unfolding of a joint activity — a coordination problem, akin to a dancing partner falling out of step or making an unexpected move. Lewis (1979) defines accommodation as a general feature of conversational dynamics, which allows interlocutors to avoid conversational crashes and prevent the conversation from getting stuck. Under this view, presupposition accommodation is then a pragmatic solution to a coordination problem (von Stechow 2008). Instead of assuming that your plane neighbour’s utterance of (3) is a completely non-sensical piece of communicative behaviour, you, as the addressee, have the option to accommodate the presupposition that she has a fiancé (just like you can quickly adopt your moves to that of your dancing partner). Such accommodation is a typical instance of Gricean interpretative mechanism, which restores apparent conversation mishaps so that the speaker’s behaviour may be reconstructed as resulting from a rational communicative intention (Grice 1975). In Thomason’s (1990, p. 332) words, ‘accommodation consists in acting to remove obstacles to the achievement of desires and goals that we attribute to others’.<sup>4</sup>

Thus conceived, presupposition accommodation introduces an intermediary stage within the kinematics of assertion. At the utterance time  $t$  the presupposition set is such that speaker’s utterance of (3) cannot be taken as a reasonable attempt to restrict the conversational background. However, a minor modification of the presupposition set at  $t_{+1}$  would restore the conversational felicity of this utterance. As a result, the content of (3) can be added to the presupposition set (or explicitly rejected from it) at  $t_{+2}$ .

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<sup>4</sup>As another, famous illustration of accommodation, Lewis gives the example of a master who tells his slave that some course of action, which previously was set as forbidden, is now permissible. The slave has to accommodate the shift in frontiers between what is permissible and what is not; otherwise, he couldn’t make sense of the master’s intentions.

### 3 ‘Informative’ presuppositions

The essential feature of pragmatic accommodation, understood as a repair strategy, is that hearers should be able to refuse it (and hence to reject the utterance as meaningless). One of the major challenges, then, is to specify what could block accommodation. As we saw, the starting point of Lewis’s articulation of the concept of accommodation is precisely the observation that in the vast majority of cases, addressees seem to smoothly proceed to the necessary accommodations. (We will see in Section 5 that hearers are in fact often unable to refrain from accommodating presuppositions.)

An idea suggested by Soames (1982) and von Stechow (2008) is that accommodation occurs when the proposition to be included in the context set is unlikely to be subject to debate or being rejected by the addressee. A corollary hypothesis would be that important, at-issue content can never be accommodated as a presupposition. Stalnaker (2002, p. 710) hints at such conditions on assertion:

There might be other constraints on appropriate assertion — other considerations that count in favor of stating that  $\phi$  rather than informing the addressee that  $\phi$  by manifestly presupposing it. A successful assertion may change the context in other ways than by simply adding its content to the context, for example by influencing the direction of the subsequent conversation. Suppose  $\phi$  is a noteworthy piece of information that the addressee might be expected to want to comment on. Then it might be inappropriate to convey the information in a way that keeps it in the background.

This position, however, is undermined by the phenomenon of *informative presupposition*. The following two examples, the first by Karttunen (1974) and the second by von Stechow (2008), are particularly illustrative here.

- (5) We regret that children cannot accompany their parents to the commencement exercises.
- (6) Oh Dad, I forgot to tell you that my fiancé and I are moving to Seattle next week.

As we saw above, the verb *regret* (used in matrix position) triggers the presupposition that its complement is true. Imagine that (5) is a note handed to parents by school authorities. Not only does the presupposition need to

be accommodated, it also carries the main content to be gathered from the note. And this content may be open to debate; for instance, as pointed out by Gauker (1998), ‘one can well imagine a parental revolt, in which the parents insist that the children must be admitted’. Likewise, imagine that the addressee of (6), the speaker’s father, didn’t know, prior to the utterance, that his daughter was engaged. Again, not only does the presupposition triggered by the possessive phrase *my fiancé* stand in need of accommodation, the accommodation process is how the father comes to acquire a crucial, and again, not uncontroversial piece of information. Both (5) and (6) are unlikely to be rejected as unintelligible because the presupposition to be accommodated touches on an issue of great importance. But this way to communicate at-issue, new information is somehow conversational deviant, because it exploits the relative automaticity with which hearers accommodate background, not at-issue, presuppositions. This is why informative presuppositions — but not assertions — can be challenged by pointing to their non-background status, exploiting, for instance, von Stechow’s (2004) famous *Hey! Wait a minute* test:

- (7) O Dad, I forgot to tell you that my fiancé and I are moving to Seattle next week.
  - a. Hey! Wait a minute. I didn’t know that you had a fiancé.
  - b. #Hey! Wait a minute. I didn’t know that you were moving to Seattle.

Gauker (1998) argues that informative presuppositions reveal that Stalnaker’s theory cannot distinguish between assertion and presupposition.<sup>5</sup> Recall that assertions are defined by Stalnaker as attempts to increase the presupposition set (this set being composed by all the propositions mutually accepted during the conversation). What presupposition accommodation consists in is exactly the same process — updating the presupposition set. In most cases, the differences between accommodation and assertion may still be characterised in terms of the update goal. In presupposition accommodation the conversational background is updated as a repair strategy, with background or uncontroversial information, in order to make the assertion

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<sup>5</sup>Gauker also claims that the existence of informative presuppositions reveals that presuppositions cannot be mutually accepted propositions. However, this objection doesn’t pass muster under a characterisation of presupposition accommodation as a repair strategy, occurring between the utterance and the update of the conversational background with the asserted content (see von Stechow 2008).



of more important, at-issue content possible. Yet, as we just saw, this characterisation doesn't hold for informative presuppositions, which are aimed at adding debatable and at-issue content to the presupposition set. Should one then conclude, with Gauker (2008), that the very concept of pragmatic accommodation qua a process different from assertion is unintelligible?

It is important, at this point, to distinguish between direct and indirect ways to convey information (Kissine 2013, pp. 80-101). The content of a direct assertion is fleshed out from the sentence linguistic structure. How loose the relationship is between the sentence-structure and the asserted content depends on one's favoured view on the semantics/pragmatics interface. On theories such as Searle's (1969) or Alston's (2000), the linguistic structure of the sentence entirely determines the asserted content; every constituent of the asserted proposition maps directly onto a syntactic constituent of the sentence that has been uttered (see Kissine 2011, for a critical discussion). On more contextualist theories, asserted content results from pragmatic modulation and/or enrichment of the sentence structure (e.g. Sperber and Wilson 1995; Bach 1994; Recanati 2004; Carston 2002). Independently of one's take on this debate, linking direct assertions with the sentence structure leaves much room for conveying information by other means.

To begin with, one may perform an assertion by means of performing another one. Imagine, for instance, that it is mutually manifest that Mary never attends parties where she's likely to meet her ex-boyfriend Peter. Imagine you ask me whether Mary will come to Sophia's birthday party, and I reply with (8). In this case, I perform two assertions. The content of the first, (8a), is determined by the linguistic structure of the sentence in (8) — by more or less contextually influenced semantic interpretation of the syntactic structure — and, for this reason, the assertion is direct. The content of the second assertion is (8b); as this content is not determined, in any intuitive way, by (8), this second assertion, is indirect. Furthermore, the derivation (and uptake) of the content in (8b) requires that the conversational background content be first updated with the content (8a). For this reason, the assertion of (8b) is both indirect and secondary.

- (8) She invited Peter.
  - a. Sophia invited Peter.
  - b. Mary is unlikely to attend Sophia's birthday party.

Crucially, conveying information indirectly does not necessarily depend on the performance of a direct speech acts. For instance, (9) may be interpreted

as a request to sit without first comprehending it as a question. In this case, the request would be indirect but primary. In the same vein, with a sarcastic utterance of (10), the speaker brings about an indirect, but primary update of the conversational background (as the prerequisite for the ironic interpretation of (10) is that no update with the literal content takes place).

(9) Would you sit down?

(10) This is the best movie I saw in my entire life

Content conveyed via informative presuppositions is at-issue but indirect, as it is inherently different from that corresponding to the sentence linguistic content. Informative presuppositions are also primary, as they don't require that a direct assertion be performed. Imagine that I ironically say (11); clearly, I shouldn't be taken to assert the bankers feel any regret whatsoever, but my utterance makes it mutually accepted that they collected huge bonuses in 2009.

(11) Of course, all the bankers regret having collected huge bonuses in 2009.

In this respect, presuppositions feature together with Potts's (Potts 2005) 'conventional implicatures'. For instance, the non-restrictive relative clause in (12) is independent of the main assertion; it is true that Rousseau is a French philosopher, even though the speaker is mistaking Rousseau for Russell.

(12) Rousseau, who is a French philosopher, is the co-author of the *Principia Mathematica*.

Both presuppositions and conventional implicatures project out of the scope of logical operators (see Chapter *Dimensions of meaning*), a diagnostic feature clearly related to the fact that they are independent of the directly asserted content. Both the conventional implicature that Rousseau is a French philosopher in (13) and the (informative) presupposition that the speaker has a fiancé in (14) are still conveyed in spite of the main content being negated.

(13) Rousseau, who is a French philosopher, is not the co-author of the *Principia Mathematica*.

(14) O Dad, I forgot to tell you that my fiancé and I are not moving to Seattle next week.

Gauker (2008) is thus right in claiming that accommodated presuppositions have exactly the same effect on the conversational background as accepted assertions. Assertions, informative presuppositions and conventional implicature alike are primarily communicated meanings. However, only assertions are communicated directly; conventional implicatures and informative presuppositions are indirect but primary updates of the conversational background.<sup>6</sup>

## 4 Can all presuppositions be accommodated?

The line of argument just sketched consists in contrasting assertion and presupposition in terms of indirectness of the conversational update. What is still left unclear, however, is under which circumstances a presupposition will not to be accommodated. As revealed by the existence of informative presuppositions, speakers seem to readily accommodate even at-issue, debatable and new information. However there may be other reasons, independent of the at-issueness of the presupposed content, that may block accommodation. It has long been observed that presuppositions associated with some triggers are harder to accommodate than others. For instance, Kripke (2009) observes that (15) is difficult to interpret in a context where previous discourse hasn't introduced any salient person who is having dinner in New York (and this in spite of the fact that it is clearly mutually accepted that someone is having dinner in New York every night).

(15) Tonight, John is having dinner in New York, too.

The presupposition triggered by *too* in such cases thus relates to an entity made salient by previous discourse. Von Stechow (2008, 154) argues that such

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<sup>6</sup>According to Potts (2005) presuppositions and conventional implicature stand apart relative to their (non)-background status. While conventional implicature must convey new information, presuppositions can trivially be background. The continuation in (i) is conversationally odd because of a conventional implicature that conveys the already background information that Lance Armstrong survived cancer. The same proposition can, however, be presupposed, as in (ii):

- (i) Lance Armstrong survived cancer. #When reporters interview Lance, a cancer survivor, he often talks about the disease.
- (ii) Lance Armstrong survived cancer. And most riders know that Lance Amrstrong is a cancer survivor. (from Potts 2005, p. 34)

presuppositions cannot be accommodated because ‘what has already been made salient is a fact in the world that no manner of mental adjustment can bring into being’. That is, accommodation wouldn’t be possible when it targets facts about the conversational record itself.

Yet, one may complain that such an explanation somehow begs the question. Within Stalnaker’s picture, every presupposition corresponds, by definition, to a piece of information that, at some point within the history of conversation, has been made salient (either because it has been asserted or because it corresponds to an event that has been obvious enough to be taken as mutually accepted). Accommodation, under this view, is a repair strategy that enters into play precisely when the presupposed information has not been previously made salient. There should be no a priori reasons, then, why a presupposition triggered by the factive verb *regret* in (5) or the possessive *my fiancé* in (6) is easy to accommodate, while that triggered by *too* in (15) is not.

There is an extensive literature on the difference between triggers associated with accommodatable presuppositions (‘soft’ presupposition triggers) and those associated with non-accommodatable presupposition (‘hard’ presupposition triggers) (e.g. Abusch 2010; Abbott 2006). There is also growing cross-linguistic, corpus and experimental evidence that triggers such as *too* or definite descriptions are less acceptable in contexts that mandate accommodation than factive verbs or possessive constructions (see Tonhauser 2015 for a review). For instance, Tonhauser et al. (2013) report that Guarani native speakers judge the Guarani equivalents of (16) unacceptable in the context in (16a) but not in (16b), and (17) unacceptable in (17a) but not in (17b). By contrast, Guarani equivalents of (18) and (19) are judged acceptable, in spite of the necessity to accommodate the presuppositions triggered by the possessive phrase and the factive verb *stop*.

- (16) Our bus driver is eating empanadas too.
  - a. [Malena is eating her lunch, a hamburger, on the bus going into town. A woman she doesn’t know sits down next to her and utters (16).]
  - b. [Same as in (16a), except that Malena is eating empanadas.]
- (17) That little boy is my younger brother.
  - a. [The children in a sociology class have to give presentations about their families. Marko is up first and he starts with (17).]

- b. [As in (17a), but now Marko also brings to the presentation a picture of a person that he shows to the class.]
- (18) [Context: A woman who is being interviewed by a school director for a job as a teacher suddenly interrupts and says:] I have to go now to feed my dog.
- (19) [Context: Laura, who doesn't live with her parents, visits them and asks them to sit down with her because she has to tell them something:] I've stopped doing drugs.

On the basis of such data, Tonhauser et al. (2013) argue for an alternative typology of projective content (see Chapter *Presupposition projection*), in which presuppositions that are easily accommodated should not be grouped together with those that are not.<sup>7</sup> If correct, this line of thought would eliminate the need for a mechanism of presupposition accommodation altogether. Under this view, on the one hand, 'genuine' presuppositions cannot be accommodated; when triggered, they should always be entailed by the presupposition set as it is prior the utterance time; on the other hand, there exist a variety of ways to indirectly communicate content, in addition to and independently of the main assertion, to which informative presuppositions — which would not deserve to be called 'presuppositions' anymore — belong.

Now, one may object that when the proposition to be accommodated is very controversial, it will not be accommodated, no matter the nature of its trigger (see Singh et al. 2016, for experimental evidence). Recall, for instance, the example (2), repeated here. Because it is very unlikely that the speaker owns a camel, the utterance of (2) is likely to result in an interpretational failure (at least at the literal level) because the presupposition triggered by *my camel* will not be accommodated.

- (20) I'm awfully sorry, my camel wouldn't wake up this morning. [= (2)]

However, that conversationalists sometimes reject information — be it communicated directly or not — is just a fact about the mechanics of conversational background update. The difference, advocated by Tonhauser et al. (2013), if correct, centres around the fact that some presuppositions seem to always resist accommodation.

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<sup>7</sup>Tonhauser et al. (2013) also use the possibility for a content to project within the boundaries of a local context as a further classificatory principle of their typology.

Importantly, Tonhauser et al.’s (2013) method consists in eliciting judgments of acceptability by Guarani native speakers (and comparing them with the authors’ intuitions in English) about occurrences of presupposition triggers in contexts where accommodation is required. While the differences in acceptability (and processing speed, see Tiemann et al. 2011) of different types of presuppositions are undoubtedly fascinating and important, this kind of measure is quite indirect. Results concern participants’ perception of whether a given sentence should have been uttered in a certain context (where some of this sentence presuppositional requirements are or are not satisfied). This is different from determining whether participants would themselves, in a similar context, accommodate the presuppositions at hand.<sup>8</sup> As we will presently see, there is, however, a longstanding experimental tradition which unveils an extremely strong tendency to accommodate presuppositions associated with ‘hard’ — and even to revise one’s beliefs to do so.

## 5 Presupposition accommodation in experimental psychology

Experimental social psychology research shows that, contrary to the above-mentioned considerations, presupposition accommodation may be easier and more frequent than generally thought by linguists. In a series of seminal experiments, Elisabeth Loftus and colleagues have shown that asking people questions containing presupposition triggers makes them prone to accommodate the associated presuppositions, and so even if the presupposed information is incompatible with the conversational background. The primary objective of this experimental tradition was to determine if people’s memory of events they have witnessed can be affected by information they receive after the witnessing experience. The experiments shared a common core design. Participants watched a short film or a series of slides depicting an event (e.g. a car accident) and, afterwards, were asked specific questions that presupposed information which wasn’t part of the witnessed event. For

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<sup>8</sup>Mathewson (2006) attempts to directly determine which kind of presuppositions native speakers’ of St’át’imcets tend to accommodate. However, the diagnostic tool she relies on is spontaneous rejection or challenge of utterances by the linguist; there is a number of reasons, all independent of presupposition, why native speakers may fail to challenge or reject an utterance they feel to be infelicitous (see Tonhauser et al. 2013 for a critical discussion).

instance, Loftus (1975, Experiment 1) asked students to watch a short video displaying a car accident. In the video, one car (Car A) violates a stop sign and turns right, entering a main road. The cars in the main road are forced to stop suddenly to avoid collision with Car A, finally resulting in a five-car bumper to bumper collision. After watching the video, the participants were asked to estimate the speed of Car A that was responsible for the collision, in either of two ways. Half of the subjects (presupposition group) were asked ‘How fast was Car A going when it ran the stop sign?’. The second half (no presupposition group) were asked ‘How fast was Car A going when it turned right?’. Obviously, while the first question presupposes the existence of a stop sign, the second one does not. When, later, participants were asked whether they saw a stop sign for Car A 53% of the ‘presupposition’ group remembered the stop sign, versus 35% in the ‘no-presupposition’ group, suggesting that answering a question presupposing the existence of a stop sign strengthened participants’ memory for it. Closer to the topic of presupposition accommodation, Loftus and Zanni (1975, Experiment 1) tested the effect of questions that presupposed non-existing objects. Participants were again asked to watch a video displaying a car accident. A ‘presupposition’ group were asked questions with definite NP (e.g. ‘Did you see *the* NP?’), while the other received question with no presupposition trigger (e.g. ‘Did you see *a* NP?’). In each group, three critical questions referred to real objects of the original video, while the other three referred to non-existing objects. The presupposition-trigger group was more than twice as likely (15%) to report that non-existing objects appeared in the video compared to the non-presupposition-trigger (7%). Loftus (1975, Experiment 4) also showed that the accommodation of false presuppositions, triggered by a definite description, is sufficiently robust to alter people’s memory of a witnessed event even after a week.

Now, one could object that the studies just mentioned are biased because participants’ original memories were formed on the basis of visual information, while the effects of presuppositions on participants’ memorial representations were assessed verbally. However, Loftus, Miller, and Burns (1978, Experiment 1) showed that information transmitted by presuppositions is actually integrated to people’s original visual representation. The authors depicted an auto-pedestrian accident, involving a red car traveling towards an intersection, in a series of slides displaying the successive scenes. For half of the participants one slide showed the car stopped in front of a yield sign at the intersection, while for the other half the analogous slide dis-

played a stop sign instead. After viewing the slides, participants were asked a critical question presupposing the existence of either a stop sign or a yield sign. The viewing groups (stop vs. yield sign slides) were crossed with the question groups (stop vs. yield sign question), resulting to an incorrect vs. correct presupposition condition. In a later forced-choice recognition test, whereby participants had to choose the original slide from a pair of the the stop sign and the yield sign slides, participants in the correct presupposition condition correctly identified the slide of the critical pair they had actually seen 75% of the times, while in the incorrect presupposition condition were accurate at a rate of 41%. In Loftus, Miller, and Burns (1978, Experiment 1) the materials and procedure were the same as in the previous study, but, this time, participants were split in three groups, each asked a different question: one presupposing that they could have seen a yield sign; one presupposing that they could have seen a stop sign; or one that did not presuppose the existence of any sign ('Did another car pass the red Datsun while it was stopped at the intersection?'). After a filler task and the forced-choice recognition task, all participants were informed that the question they were asked before may have presupposed a different sign from the one they had originally viewed. Participants were then asked to explicitly state whether they saw a yield or stop sign in the slide, and whether their questionnaire assumed a stop sign, a yield sign or none of them. Not only were the participants in the incorrect presupposition question less accurate in the recognition test compared to those who answered the correct presupposition or the no-presupposition question, the incorrect-presupposition group was less accurate in the debriefing question as well: only 12% of the participants in the 'incorrect presupposition' group answered correctly the debriefing questionnaire. Hence, even if participants were offered a possibility to question the validity of the presupposed content, this content seems to persist in their memory once it has been accommodated.

This line of research suggests an automatic — and, to some extent, inevitable — presupposition accommodation. Not only people accommodate presuppositions to supplement representations of events they have witnessed, but they are also inclined to accommodate presuppositions that are clearly false in the context where they process them. These findings are intriguing when contrasted with Tonhauser et al.'s claim, discussed in the previous section, that definite descriptions are unacceptable in a context where the associated existential presupposition doesn't hold. Quite likely, this discrepancy is due to the fact that Loftus and colleague test presupposition accommoda-



tion through its effect on people’s actual beliefs, while Tonhauser et al. rely on more indirect acceptability judgments.

Recall, furthermore, that in classic Stalnakerian theories according to which conversational background — the target of accommodation processes — is constructed in terms of mutual acceptance, weaker than belief (see Kaplan 1981). Under this view, accommodation, as well as assertion, should affect conversationalists’ record of what is jointly accepted, but not necessarily their representations of the world (see Thomason 1990). Yet, the studies by Loftus and colleagues indicate that presupposed content can be endorsed, even though it incompatible, at the utterance time, with the addressee’s doxastic alternatives. Interestingly, such a tendency to accommodate false information is not unique to presuppositions but also holds of plain assertions. Experimental psychological research has provided ample evidence that under certain conditions people come to believe and be influenced by contents of assertions that are explicitly tagged as false (e.g. Kissine and Klein 2013; Gilbert, Tafarodi, and Malone 1993). Thus, it seems that although accommodated presuppositions convey information in an indirect way, participants integrate it quite directly.

## 6 Summing up

Conversation is a collaborative activity, deeply rooted within assumptions about the underlying rationality of every conversational move, of the sort continuously investigated since Grice (1975). Blatant presuppositional failures should then be reconciled with the general assumption that the speaker is both rational and aware of the linguistic conventions that impose presuppositional requirements on the felicity of her utterance. To do so, the addressees may modify their representations of the conversational background, against which is interpreted the main speech act performed with the otherwise problematic utterance. In this way, speakers have the opportunity to update the conversational background in an indirect way, and exploit this mechanism to convey crucial, at-issue information.

The idea that presupposition accommodation is an instance of indirect communication is somehow mitigated by nascent cross-linguistic and experimental research programs, which suggest that judgement of acceptability of accommodation vary with respect to the kind of presupposition trigger involved, triggers like *also* or definite descriptions being more resistant to

accommodation. By contrast, research in experimental social psychology indicates that not only do addressees readily and tacitly accommodate existential presuppositions, they do so even when accommodation requires updating their own beliefs about the world. Further research is required to genuinely assess and compare these two research traditions. One can speculate, at this stage, that these conclusions are not as contradictory as they may seem. Tonhauser et al. (2013) may be right that presupposition triggers distribute in different classes, distinguishable, inter alia, by the ease with which accommodation works. At the same time, the strong tendency to accommodate any kind of presupposition, even the false ones, highlighted by Loftus’s research, probably indicates that our expectation that conversational moves are rational is very strong. So strong, in fact, that we sometimes prefer to revise our beliefs rather than abandon it.

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