

Presuppositional effects and ostensive-inferential communication

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Abstract In this paper, we argue that presuppositions fall within the scope of ostensive-inferential communication, and present the benefits of this proposal. On the one hand, by treating presuppositions as part of what is *ostensively* communicated by the speaker, we can provide a unified account of so-called ‘informative’ presuppositions, and presuppositions that are part of the ‘common ground’. On the other hand, by treating presuppositions as the output of an *inferential* process of pragmatic interpretation, we can explain their context-sensitivity as well as the way in which their propositional content is constructed through a process of ‘mutual parallel adjustment’ with the explicit content of the utterance and its implicatures.

Keywords: presupposition; speaker meaning; ostension; inference; Relevance Theory

1. Introduction

Traditionally, linguists and philosophers of language characterize presuppositions as background information, that is, information that is taken for granted by the interlocutors. An utterance of (1a), for example, is typically described as giving rise to the presupposition (1b):

- (1) a. Rob stopped smoking
b. Rob used to smoke

That is, an utterance of (1a) introduces two pieces of information: *that Rob does no longer smoke* – the asserted content – and *that Rob used to smoke* – the presupposed content. The latter piece of information is presented as part of the set of background assumptions against which the conversation takes place and develops.

The question of the role of presupposition in communication has a long philosophical history. Frege (1892) offers a first discussion of the phenomenon of presupposition by analyzing the case of proper nouns. The observation is that a proper noun appears to presuppose the existence of its referent when used in a sentence. Frege argues that this implication of existence results from the use of the sentence and it is not part of its “sense”. This view is later developed by Strawson (1950), who clearly distinguishes between *expressions* and *uses of expressions*, and extended to other referring expressions such as definites and quantificational noun phrases. Crucially, according to the Frege/Strawson view, presuppositions are conditions for the proper use of certain linguistic expressions (see Simons, 2013 for a discussion). The idea of presupposition as ‘conditions of use’ paved the way for the broader concept of presupposition introduced by speech act theorists like Austin (1962) and Searle (1969). This concept encompasses the necessary conditions for the felicity or appropriateness of a speech act and, as a result, presuppositions cease (at least in some cases) to be associated with specific linguistic forms.

It is thanks to the work of Stalnaker (1973), though, that the phenomenon of presupposition receives a central place in the linguistic and philosophical debate. The influential

Stalnakerian account conceives of presuppositions as conditions for the appropriateness of an utterance: a sentence ‘p’ presupposes the proposition *q* if the use of ‘p’ would be inappropriate when *q* does not belong to the ‘common ground’, i.e., the set of assumptions mutually held by the discourse participants for the purpose of the conversation (Stalnaker, 1973, 1974). If *q* is entailed by the context before the utterance time, then the presupposition *q* is said to be *satisfied*. Conversely, if *q* does not belong to the common ground, then this leads to *presupposition failure* (Stalnaker, 2002). When a failure occurs, the addressee is required to *accommodate* the presupposition in order to make sense of the utterance (Lewis, 1979; Heim, 1982). According to this standard view, accommodation is the process whereby the content of a presupposition that is not satisfied is introduced into the discourse in order to make it possible for the context to be updated with the assertive component of the utterance.

Presupposition satisfaction and presupposition accommodation are conceived of as two distinct phenomena that account for different uses of presuppositions, respectively referred to as ‘proper or non-informative uses’ and ‘informative uses’ (Karttunen, 1974, Stalnaker 1974). While the former concern shared pieces of information, the latter involve assumptions that are not yet part of the common ground. For instance, an utterance of (1a) can be used to presuppose (1b) when the fact *that Rob used to smoke* is common ground between the speaker and the addressee (non-informative use), as well as when this represents a new piece of information for the addressee (informative use).

While the distinction between non-informative and informative uses of presupposition is well established in the linguistics literature, its psychological significance has already been questioned. For instance, as Sbisà (1999) points out, this distinction “does not reflect the reality of social communication processes” as presuppositional uses typically fall on a continuum of cases. This is because the speaker may be mistaken or even uncertain with respect as to whether or not a certain piece of information is shared with the addressee. Furthermore, the addressee may forget a piece of information that has been previously shared. Finally, an audience can be split between those who share a certain piece of information with the speaker and those who do not. All these considerations blur the contours of the distinction between proper and informative uses of presuppositions and call for a “good account of presupposition [that] should be extensible without modification to informative presupposition, as well as to the intermediate cases” (Sbisà, 1999).

The distinction between proper/non-informative and informative uses of presuppositions, though, plays a crucial role even in the context of those accounts of presuppositions that focus on their communicative effects. For instance, Simons (2005) emphasizes that informative uses of presuppositions can be exploited in order to carry the main point of the utterance. For instance, in the example in (2), the main point of B is to inform A of the presupposition that the new guy has a wife.

- (2) A: The new guy is very attractive.
B: Yes, and his wife is lovely too.

Crucially, the ‘exploitative nature’ of this kind of uses is typically seen as tightly intertwined with their informative status. For instance, Garcia-Carpintero (2013) suggests that ‘informative presupposition’ can convey the main point of the utterance because they violate the felicity

conditions of the speech act of presupposing. According to Garcia-Carpintero, presupposing involves a common ground requirement, which is not satisfied in the case of informative uses. These uses would thus correspond to the performance of a different kind of speech act, namely, an indirect assertion. Importantly, it is the recognition of the common-ground violation, and therefore of the informativity of the presupposition, that is said to allow the addressee to infer that the speaker intended to perform an indirect assertion.

To sum up: on the one hand, the distinction between non-informative and informative uses of presuppositions appears to lack any psychological significance; on the other hand, this distinction is called upon to explain how presuppositions can be communicatively exploited. This apparent contradiction calls for an account of presuppositions that is able to explain their distinct communicative functions while being grounded in a psychologically plausible framework. The aim of this paper is to develop such an account.

Our starting point is represented by existing relevance-based account of presuppositions (Simons, 2005; Saussure, 2013). Crucially though, we depart from two of their standard assumptions: first, we challenge the idea that presuppositions are not part of what is intentionally communicated by the speaker (section 3); second, we recognize a role for pragmatic inference in the recovery of the propositional content of the presupposition (Section 4). These moves will set the ground for a unitary treatment of a variety of presuppositional uses. Furthermore, they will allow us to explain their communicative effects as a function of the role presuppositions can play in the inferential process of constructing the speaker intended meaning.

2. Theoretical background

Simons (2005) and, more recently, Saussure (2013) have examined the phenomenon of presupposition within the framework of Relevance Theory (Sperber & Wilson, 1995; Wilson, & Sperber, 2004). Their analysis is tightly linked to the functional distinction between *background* and *foreground*, a distinction that pertains to the role assumptions play in pragmatic interpretation. Relevance Theory conceives of interpretation as an inferential process in which the underdetermined linguistic input acts as a clue for the recovering of the speaker's intended message. This process is driven by expectations of relevance, where relevance is defined as a property of inputs to an information processing system. Relevance is a cost-benefit notion: the less the effort to process the input (cost), the greater its relevance; the greater the cognitive effects it produces, the greater its relevance. The intended interpretation is one that (typically) satisfies the receiver's expectations of relevance (Sperber & Wilson, 1995). Crucially, an assumption can contribute to the relevance of the overall interpretation in two ways: (i) by achieving contextual effects of its own, or (ii) by giving access to a context in which further assumptions will achieve contextual effects. Depending on whether its contribution is captured by (i) or (ii), it can be described as, respectively, *background* or *foreground* information: "Backgrounding and foregrounding arise as automatic effects of the hearer's tendency to maximize relevance, and of the speaker's exploitation of that tendency" (Sperber & Wilson, 1995: 217).

Simons (2005) describes presuppositions as 'relevance establisher' or 'relevance requirements', i.e. background assumptions that contribute only indirectly to the achievement of the relevance of the utterance. More precisely, she defines presuppositions as follows:

“The presuppositions of an utterance are the propositions which the addressee must accept in order for the utterance to be relevant for her in the way intended by the speaker” (Simons, 2005, p. 333)

This definition encompasses cases in which the presupposition is entirely pragmatically motivated, as in (3), or triggered by the presence of a linguistic cue, as in (4).

- (3)
- a. A: Smith doesn't seem to have a girlfriend these days.
 - b. B: He has been paying a lot of visits to NY recently.
 - c. Having a girlfriend in NY is a reason to travel often to NY.
 - d. Smith might have a girlfriend in NY
- (4)
- a. A: How are things between Smith and Olivia?
 - b. B: They went out again.
 - c. Smith and Olivia went out at a previous time *t*.
 - d. Smith and Olivia might develop a romance.

In (3), A is likely to interpret B's utterance as implicating (3d). Crucially though, the relevance of B's utterance depends from the recovery of (3c): it is the assumption in (3c), which connects girlfriends and travels, that gives access to the context in which the utterance can achieve enough contextual effects – by warranting the derivation of (3d). According to Simons, the assumption (3c) *establishes* the relevance of the utterance and, in virtue of the above definition, it is a presupposition of B's utterance.¹

Example (4) can be analyzed along the same lines. In a suitable context, B's utterance is likely to be interpreted as implicating (4d). To achieve this effect, A will rely on what B explicitly communicates, as well as on the assumption in (4c). Following Simons' definition, this assumption is thus presupposed by B's utterance. In both cases, the presupposition serves as an implicated premise which, in conjunction with the utterance explicit content, leads to the derivation of a contextual implication that satisfies the hearer's expectations of relevance.² The difference between the presupposition (3c) and the presupposition (4c) is that while the former is recovered on the basis of pragmatic inference alone, the latter appears to be triggered by the linguistic expression *again*. As Simons (2005) points out, however, not only do these presuppositions share the same function of relevance establishers but also they display similar linguistic properties. For instance, even presuppositions that are exclusively pragmatically motivated appear to project, that is, they appear to be inherited from lower to higher clauses (e.g., in the case of negation (3c) or of interrogatives (3d)):

- (3) a. A: Smith doesn't seem to have a girlfriend these days.

¹ Sperber and Wilson (1995) would call this assumption an 'implicated premise' in the inferential process of deriving the 'implicated conclusion(s)' or implicature(s) of the utterance.

² As Simons notices, an assumption can serve as a relevance establisher in many ways. Examples (3) and (4) are thus not exhaustive of the variety of relevance requirements. For a more detailed discussion, see Simons (2005, pp. 336-337).

- b. B: He has been paying a lot of visits to NY recently.
- b'. B: He hasn't paid lots of visits to NY recently.
- b''. B: Has he paid a lot of visits to NY recently?

This is because, according to Simons, families of sentences (like (3b-b'')) can give rise to the same implicated premise (in this case, an assumption that connects girlfriends and travels) to achieve relevance.³

The distinction between (3c) and (4c) is sometimes spelled out in the literature as a distinction between “pragmatic presuppositions” and “semantic presuppositions” (see, e.g. Potts (2015)). The latter trace to conventional aspects of the meanings of specific words and constructions, the so-called presupposition triggers (Levinson, 1983; Karttunen, 1974). Following, Saussure (2013), we will use the term “discursive presuppositions” to refer to presuppositions that are entirely pragmatically motivated, and “linguistic presuppositions” to refer to presuppositions that are triggered by lexical items, syntactic constructions or phonological devices (e.g. stress assignment).

Simons (2005) suggests an analysis of presupposition triggers as *procedural* meanings (Blakemore, 1987; Wilson, 2011). The distinction between conceptual and procedural meanings is based on the assumption that while certain lexical items encode full-fledged concepts, others encode procedures. Procedures are instructions that guide the interpretative process by imposing constraints on the construction of the intended contexts and cognitive effects. This approach, which was initially proposed by Blakemore (1987, 2002) to account for the meaning of non-truth conditional discourse connectives – e.g., *but, so, after all* –, has been fruitfully applied to a broader range of linguistic categories, such as illocutionary adverbials (Wilson & Sperber, 1993), pronouns, indexicals and demonstratives (Hedley, 2005, 2007), mood indicators (Escandell-Vidal, 1998, 2002; Andersen & Fretheim, 2000; Wilson & Wharton, 2006), grammaticalised indicators of epistemic modality and evidentiality (Aikhenvald, 2004; Fitneva & Matsui, 2009; Matsui, Yamamoto & McCagg, 2006; Matsui, Rakoczy, Miura & Tomasello, 2009; Papafragou, Li, Choi & Han, 2007). Simons (2005) proposes a further extension to presupposition triggers, which can thus be analyzed as encoding procedural constraints on the construction of the context of interpretation, one which establishes the relevance of the utterance.

Simons's (2005) account remains ‘pragmatic’ as it defines presuppositions in terms of the role played in the process of utterance interpretation (and not as properties of sentences). However, it recognizes that presuppositional constraints can be semantically encoded by a variety of triggers, which serve as indicators of which propositions are intended to play the role of relevance establishers. This indication – which can be overridden by further contextual considerations (see, e.g., Simons, Beaver, Roberts, & Tonhauser, 2017) – is part of the semantic competence: the relationship between linguistic triggers and procedures is that of ‘encoding’, not inference.

In this paper, we develop further the current relevance-based accounts of presuppositions proposed by Simons (2005) and Saussure (2013). In doing this, we depart from

³ For a more recent account of presupposition projection within a QUD (*Question under discussion*) framework, see Simons, Beaver, Roberts & Tonhauser (2017) and Beaver, Roberts, Simons & Tonhauser (2017).

two of their assumptions: first, we challenge the idea that presuppositions are not part of what is intentionally communicated by the speaker (section 3); second, we recognize a role for pragmatic inference in the recovery of linguistic presuppositions (section 4). We believe that a pragmatic analysis of the phenomenon of presupposition requires a focus on both ‘intention’ and ‘inference’. We illustrate the benefits of this approach and pave the way for a unitary treatment of a variety of presuppositional effects.

3. Presupposition and intention

3.1 Presupposition and speaker’s meaning

Current relevance-based accounts of presupposition assume that while presuppositions are intended by the speaker to be a relevance establisher for her utterance, “the speaker does not really intend to convey this proposition to the addressee” (Simons, 2005, footnote 1). According to Saussure (2013), presuppositions can be distinguished from conversational implicatures in virtue of the fact that conversational implicatures are part of the speaker’s informative intention whereas presuppositions are not: specifically, a presupposition “comes together with it but without being part of it” (Saussure, 2013, p. 181). In line with this, Simons (2007) claims that presuppositions are “not part of the speaker’s communicative intention” (p. 6) and they are transmitted simply as a “by-product” of the communication the propositions that the speaker “cares about”.⁴ This assumption is widespread in the literature, where we find more examples of the peripheral status of presuppositions with respect to the speaker’s intentions in communication: for instance, coming from a non-Gricean perspective, Ariel (2016) claims that background contents “are meant, but not conveyed” or, analogously, that they “are meant, but not communicated”.

The exclusion of presuppositions from the domain of what is intentionally communicated is not incompatible with the concession that presuppositions might occasionally acquire a different status: “there are cases where the speaker may intend the background proposition *as part of*, or even *as the main point of*, what is communicated.” (Simons 2005, footnote 1, *our emphasis*). This case is exemplified by examples like (2) (repeated here):

- (2) a. A: The new guy is attractive.
b. B: Yes, and his wife is lovely too.

Simons (2005,p. 342)

In this case, the existential presupposition that the new guy has a wife represents the main point of the utterance, that is, its main source of intended contextual effects. Examples like (2), though, represent an exception to the general picture in which presuppositions are not intentionally communicated and, according to Simons, they involve a secondary process of re-evaluation of the intended relevance of the utterance.

The distinction between presuppositions and intentionally communicated contents is made explicit in Simons (2007), where the author revises her definition of presuppositions as follows:

⁴ Saussure (2013) and Simons (2007) refer respectively to the speaker’s *informative* intention and the speaker’s *communicative* intention. Given that the communicative intention is fulfilled when the informative intention is recognized, the two formulations can be considered equivalent in this context.

“ p is a presupposition of an utterance μ iff
(i) the interpreter must take the speaker to accept p in order to make sense of $U \mu$
(ii) the reason for (i) is not merely that the speaker has demonstrated a communicative intention with respect to p .”

(Simons 2007, p. 12)

On the basis of clause (ii) of this definition, Simons argues, it is possible to distinguish presuppositions from assertions and implicatures. While assertions and implicatures are attributed to the speaker in virtue of the recognition of the speaker’s communicative intention, presuppositions are not. This definition encompasses both typical cases in which the presupposition is not part of the speaker’s communicative intention and exceptional cases, like (2), in which the presupposition falls within the speaker’s communicative intention. Even in these latter cases, the acceptance of the presupposition need not rely on the recognition of the speaker’s communicative intention: “identification of the presupposition and recognition of it as bearing the main conversational point of the utterance are two separate steps, with identification coming first” (Simons, 2007, p. 13).

In what follows, we challenge this assumption and suggest that presuppositions and communication cannot be teased apart. This requires us to introduce a notion of communication that can constitute a proper object of theorizing (section 3.2). We believe the notion of ‘ostensive-inferential communication’ proposed by Sperber and Wilson will serve this purpose. Crucially, in section 3.3, we argue that ostension comes with different degrees and it can encompass cases of presuppositional uses that have been traditionally excluded from its scope (even by relevance-theorists).

3.2 From speaker’s meaning to ostensive-inferential communication

The characterization of ostensive-inferential communication proposed in Relevance Theory aims at capturing a variety of (human) communicative acts sharing features that distinguish them from (entirely) coded forms of communication (Sperber & Wilson, 1995; Sperber & Wilson, 2015). On the one hand, they are characterized by the fact that the communicator displays an overt behavior aimed at attracting attention to her communicative intention (‘ostension’). On the other hand, the ostensive stimulus offers a clue to the audience to infer the communicator’s intended meaning (‘inference’⁵).

In all cases of ostensive-inferential communication, the communicator produces an utterance (or another ostensive stimulus) with the following two intentions: (i) the *informative intention* to inform the audience of something, and (ii) the *communicative intention* to inform the audience of one’s informative intention. More technically, the *informative intention* is defined as the intention to make manifest or more manifest to the audience an array of propositions I , whereas the *communicative intention* is defined as the intention to make it mutually manifest to audience and communicator that the communicator has this informative intention (Sperber & Wilson, 2015, p. 139).

⁵ For a detailed discussion on the role of inference in pragmatic interpretation, see Mazzarella (2014).

In order to clarify the import of these definitions, we shall focus on the notion of ‘manifestness’. A proposition is manifest to an individual at a given time to the extent that he is likely to some positive degree to entertain it and accept it as true. The set of propositions that are manifest to an individual at a given time represents the individual’s *cognitive environment*. A cognitive environment is shared between two or more individuals when it is a cognitive environment of each of them. A shared cognitive environment might include propositions that identify the people who share that environment. When this is the case, the shared cognitive environment is also a mutual cognitive environment, and it comprises propositions that are *mutually manifest* (Sperber & Wilson, 1995, pp. 41-42).

Communicators aim at changing the manifestness of each other’s assumptions. When a speaker says “The new guy is attractive”, she aims at making the assumption (proposition) that *The new guy is attractive* – where reference has been assigned and the concepts NEW and ATTRACTIVE have been adjusted to the specific occasion – manifest or more manifest to her audience (as well as making manifest further assumptions concerning, for instance, her intention to ask him out, etc.). In other terms, communicators aim at changing the audience’s cognitive environment. Crucially, communicators do this in an ostensive, overt, way. That is, they make it evident that they want the audience to recognize that they are expressing this intention.

The notion of ostensive-inferential communication is built on the Gricean notion of speaker’s meaning (Grice, 1989) but encompasses a broader range of communicative acts for which Grice did not provide a unified account. For instance, ostensive-inferential communication does not require a communicator to have a third-level intention that the addressee’s recognition of her informative intention should be at least part of his reason for fulfilling this. This allows ostensive-inferential communication to cover the whole continuum from pure cases of ‘showing’ to pure cases of ‘meaning’. Furthermore, it encompasses cases of strong communication, where the information the speaker intends to communicate is a single, clear proposition, as well as cases of weak communication, where the speaker’s intended message cannot easily be paraphrased. The goal is to provide a “conceptually unified explanation of a much wider range of communicative acts” (Sperber & Wilson, 2015, p. 117). In the following section, we argue that presuppositions do fall within the scope of ostensive-inferential communication.

3.3 Presuppositions as intentionally communicated contents

In this section, we argue that it follows from the graded nature of ostensive-inferential communication that presuppositions are part of the speaker’s informative intention. As discussed above, communication involves making one’s informative intention mutually manifest: that is, to make mutually manifest to the communicator and the audience that the communicator has the intention to make manifest or more manifest to the audience an array of propositions. I. Two elements of this definition are worth discussing further: (i) what constitutes the *array* of propositions with regard to which the communicator expresses her intention; (ii) the idea that this intention involves *making manifest or more manifest* the array at issue.

As far as (i) is concerned, we claim that the array must comprise *all* those propositions that will *jointly* make the utterance relevant to the audience. For instance, if the communicator

expects the audience to derive a certain implicature, the array must contain all the propositions that jointly warrant the implicature. Let us go back to example (4).

- (4) a. A: Smith doesn't seem to have a girlfriend these days.
b. B: He has been paying a lot of visits to NY recently.

As Simons (2005, p. 329) suggests, “the assumption that B thinks that Smith might have a girlfriend in NY is not in itself sufficient to render B's utterance relevant. An additional assumption is required, one which explicitly links the issue of having girlfriends to the issue of travel to NY”. This assumption – a presupposition of the utterance – is thus part of the array of propositions whose manifestness B intends to raise when uttering (2b).

We believe that the claim that presuppositions fall squarely within the speaker's informative intention can be reconciled with the intuition that, when asked what she wanted to communicate, a speaker might not include the presupposition in her answer. The solution to this tension can be found in Sperber and Wilson's discussion of ‘impressions’, and their point can be insightfully applied to presuppositions:

“In many – perhaps most – cases of human communication, what the communicator intends to make manifest is partly precise and partly vague. She might have in mind a characterisation of I based on a representation of some but not all of the assumptions in I.” (Sperber & Wilson, 1995, p. 59)

In virtue of its role as relevance establisher, the presupposition will be part of the array of proposition I which falls under the speaker's informative intention even if the representation of the presupposition is not part of the characterization of I in the speaker's mind. It is worth noticing, though, that while presuppositions need not be part of this characterization, they often are. To illustrate this point, we shall focus on linguistic presuppositions.

Linguistic presuppositions are triggered by linguistic elements, whose function is to constrain the construction of the context of interpretation of the utterance. As discussed above, presupposition triggers are a heterogeneous class, and their distinct properties have been the study of investigation in linguistics and psycholinguistics (Domaneschi, Carrea, Penco & Greco, 2014; Domaneschi Canal, Masia, Lombardi Vallauri & Bambini, 2018; Jayez, Mongelli, Reboul & Van Der Henst, 2015; Schwarz, 2015). For the purpose of our discussion, it is worth focusing on the distinction – discussed by Simons (2005) – between triggers that can be omitted from the utterance without changing the content of what is said (e.g., *yet*, *again*, *too*, *even*, etc.), on the one hand, and triggers whose presupposition is non-detachable from what is said (e.g., change of state verbs, factive verbs, etc.). This distinction comes very close to Glanzberg's (2003, 2005) one between ‘weak’ and ‘strong’ presuppositions. According to Glanzberg, on the one hand, certain syntactic structures or lexical elements activates ‘strong’ presuppositions, namely, presuppositions that in case of presupposition failure lead to the obligatory repair of the context. On the other hand, other kinds of triggers activate ‘weak’ presuppositions that, in the case of presupposition failure, lead to the optional repair of the context. That is, when the presupposition is false or not part of the common ground, the utterance explicitly communicates

a proposition whose truth-value can be independently evaluated in the case of ‘weak’ triggers, but not of ‘strong’ ones. Consider again our example (3):

- (3) a. A: How are things between Smith and Olivia?
b. B: They went out again.

Clearly, the trigger ‘again’ can be omitted without changing the content of what is said (*Smith and Olivia went out at t*). In (4) then the sole function of the presupposition trigger appears to be the triggering of the presupposition (*Smith and Olivia went out at t' < t*). For this reason, Simons claims that “when a speaker uses a dedicated presupposition trigger, she thereby makes her intentions [*to presuppose the potential presupposition*] explicit” (2005, p. 348). We agree with this claim and suggest that examples like (4) represent the paradigmatic case of a presupposition which not only does belong to the array of propositions that the speaker intends her utterance to make manifest or more manifest but is also represented by the speaker as part of this array. Presuppositions can thus vary in their degree of ostensiveness depending on whether they fall on the ‘precise’ or ‘vague’ side of the speaker’s characterization of her informative intention. Typically, linguistic presuppositions that are triggered by weak triggers display a higher degree of ostensiveness than other kinds of presuppositions (such as discursive presuppositions).

The second element of the definition of informative intention that we believe worth discussing here is the idea that the array of propositions is intended by the communicator to be made *manifest or more manifest* – see (ii) above. Recall that, according to Sperber and Wilson, a proposition is manifest to an individual at a given time to the extent that he is likely to some positive degree to entertain it and accept it as true. Crucially, a proposition does not have to be mentally represented by an individual to be manifest to that individual, but it must *be able to* be entertained and accepted as true (see also Jary, 2010, p. 44). Manifestness is, indeed, a function of salience and epistemic strength. This marks an important difference with respect to the Gricean account of speaker meaning. While Grice assumed that the communicator’s intention is to induce a certain specific thought in the audience, Relevance Theory suggests that this intention can be better described as an intention to modify the audience’s cognitive environment. This way, ostensive-inferential communication can easily account for cases – as reminders and recapitulations – that Grice found problematic to explain (Grice, 1989, pp. 106-107). When the communicator is aware of the fact that the audience already believes a certain proposition, she might intend to make that proposition more manifest in the context of the conversation (by increasing its salience).

We want to suggest that this feature of the definition of the speaker’s informative intention can shed some insights on the reason why presuppositions can, but need not to, be part of the ‘common ground’ between the communicator and the audience (Stalnaker, 2002). First, it offers an explanation of the function of presupposition triggers in a situation in which the proposition is part of the common ground (or the ‘mutual cognitive environment’, in relevance-theoretic terms). As Simons remarks “[t]he common ground view tells us why they are allowed in these circumstances, but not what they *do*.” (Simons, 2005, p. 350). In these circumstances, the presupposition trigger serves as an indicator of the fact that the speaker intends to make a certain proposition more manifest to the audience. Second, it offers a unified

account of presuppositions that are part of the common ground and of presuppositions that are not. The latter – the so-called ‘informative presuppositions’ – are intended to be made manifest to the audience at the time of the utterance: that is, they become part of the audience’s cognitive environment for the very first time when the utterance is interpreted. As Abbott (2000) argues, ‘informative presuppositions’ are too widespread to be considered as an exploitation of a norm. Our account proposes a deflationary account of informative presuppositions. The latter are unified to presuppositions in common ground thanks to the graded notion of manifestness presented here.

3.4 A unified perspective on the variety of presuppositional uses

In this section, we discuss a set of examples involving not only ‘informative’ and ‘non-informative’, or common ground, presuppositions but also cases in which the presupposition represents the main point of the utterance. The aim is to illustrate that our analysis provides a unifying framework to treat all these cases. As discussed above this is made possible by (i) the relevance-theoretic characterization of the speaker’s communicative and informative intentions, (ii) the graded nature of manifestness. To begin with, let us start by looking at the two dimensions of variation that we will be examining as well as their relation. On the one hand, we find the dimension of ‘informativeness’: a presupposition is informative if it is not part of the common ground between the speaker and the hearer before the presupposing-utterance time. On the other hand, we find ‘main-pointhood’: a presupposition represents the main point of the utterance when it is meant to be recognized as more relevant to the audience than the asserted content. This latter category is typically described as involving a “feel of exploitation” of the interpretative process, which is due to the recognition of the fact that “the intended status is different from the ostensible status” (Simons, 2005). While the presupposition should merely be a relevance establiher, it carries the main relevance of the utterance. We suggest that ‘informativeness’ and ‘main-pointhood’ are orthogonal dimensions. In contrast with Simons (2005), who describes exploitative cases only with respect to informative presupposition, we present a whole range of examples including (a) a non-informative/non-exploitative presupposition, (b) an informative/non-exploitative presupposition, (c) an informative/exploitative presupposition and, importantly, (d) a non-informative/exploitative presupposition. Let us consider the interpretation of the following utterance across different scenarios:

(5) A: I have to go now – I need to pick up my wife at the gym.

(a) Non-informative/non-exploitative presupposition

Suppose A and B are colleagues. Imagine they are having a drink together after work. B suggests having another drink and A replies with (5). A’s utterance presupposes that A has a wife as this is part of the array of propositions whose mutual manifestness A intends to raise. Assume that B knows A’s wife as they often go out all together. The presupposition is non-informative: the proposition that A has a wife is already manifest to B (and mutually manifest between A and B). The utterance simply increases its salience, and, as a consequence, its manifestness. Furthermore, the presupposition is non-exploitative, as it is a relevance-establisher: it allows the utterance to produce the intended contextual effects, namely, the strong

implicature that A cannot have another drink with B, as well as a range of weak implicatures concerning his responsibilities as a husband.

(b) *Informative/non-exploitative presupposition*

Imagine a context similar to the one described in (a), with the only difference that B is a new colleague, who does not know yet anything about A's family. As B is not aware that A has a wife (and A knows this), the presupposition that A has a wife is an informative one. That is, it is thanks to the utterance that this proposition becomes manifest to B, as well as mutually manifest between A and B. As in (a), however, the presupposition is non-exploitative, as it does not represent the main point of the utterance (which corresponds to his refusal of having another drink implicated by A's utterance).

(c) *Informative/exploitative presupposition*

Let us now assume, as in (b), that B is a new colleague of A and that she does not know anything about A's personal life. Imagine that, while they are having their drink, B starts hitting on A, tells A that she finds him very attractive and suggests to have another drink together. A replies with (5). Clearly, the presupposition that A has a wife would be an informative presupposition – as in (b). However, in this context, the presupposition would also be exploitative as the main point of A's utterance is to inform B that he has a wife (and thus convey his unwillingness to flirt with B). Not only the presupposition is more relevant to B than the asserted or implicated content, but B recognizes that A is aware of this.

(d) *Non-informative/exploitative presupposition*

Finally, let us consider a context in which A and B are colleagues since a very long time, and B knows that A has a wife (and this is mutually manifest between A and B, as they often go out all together). Despite this, B is clearly hitting on A that night, she tells him that she has always found him very attractive and suggests another drink. The presupposition that A has a wife is non-informative as it simply raises the manifestness of an assumption that was already mutually manifest. However, it is exploitative as it carries the main relevance of the utterance.

This set of examples should make it clear that informative presupposition need not require a special status in a theory of presupposition. First, they do not seem to require any special interpretative machinery such as the process of *accommodation* (Lewis, 1979; Heim, 1982). This is because, in contrast with the common ground account of presupposition, the relevance-theoretic framework suggests a notion of context that is not 'given' but is itself the product of the process of utterance interpretation: "it is relevance which is treated as a given, and context which is treated as a variable" (Sperber & Wilson, 1995, p. 142). In both cases of informative and non-informative presuppositions, the speaker intends to raise the mutual manifestness of the presupposed content⁶. Second, informative presuppositions are not the only kind of

⁶ This proposal needs to be developed further in light of much evidence suggesting that the use of an informative presupposition, but not of a non-informative presupposition, elicits an N400 ERP pattern (Wang & Schumacher, 2013; Schumacher & Hung 2012; Domaneschi et al., 2018). This is typically taken to reflect the acknowledgment of an inconsistency between the hearer's discourse mental model and the presuppositional requirement placed by the trigger. Note, however, that the idea defended in this paper that presupposition triggers encode procedural

presupposition that can have an exploitative flavor. As discussed in (5d), non-informative presupposition can also be used to convey the main point of the utterance. The exploitation of a presupposition, often motivated by politeness concerns (Brown & Levinson, 1987), is always an open possibility, independently of the common ground status of the presupposition that is exploited⁷.

4. Presupposition and pragmatic inference

In section 3, we discussed the advantages of treating presuppositions as part of ostensive-inferential communication by focusing on the role of the speaker's intentions in communication ('ostension'). In what follows, we aim to explore the other side of the coin: that is, 'inference'. As Sperber and Wilson suggest, 'ostension' and 'inference' go hand in hand:

"Inferential communication and ostension are one and the same process, but seen from two different points of view: that of the communicator who is involved in ostension and that of the audience who is involved in inference" (Sperber & Wilson, 1995, p. 54)

We believe that by excluding presuppositions from the domain of what is intentionally communicated, the existing literature has underestimated the role of pragmatic inference in the process of recovering the presupposed content. We aim at filling this gap. Before turning to this, though, it is worth presenting Simons's contribution to this topic.

Simons's account recognizes the role played by pragmatic inference in the process of recovering a presupposition. This process is seen as part and parcel of the overall interpretative endeavor, which is constrained by conversational principles. By focusing on change of state and factive verbs, in Simons (2001), she suggests that their presuppositions arise as the result of the following interpretative procedure. When a speaker utters a sentence *p*, the utterance raises the question "whether *p*?" and presents itself as an answer to it. For instance, to utter (1a) is equal to offer an answer to the question (1c):

- (1) a. Rob stopped smoking
- b. Rob used to smoke
- c. Did Rob stop smoking?
- d. Rob did not stop smoking

This indicates acceptance of that question as a topic of interest and, thereby, uttering (1a) implicitly raises the question (1c). Typically, when the utterance contains a change of state or

instruction for the construction of the context of interpretation might be able to account for these empirical findings.

⁷ An anonymous reviewer raised the question of whether distinct presuppositional uses differ with respect to their cancellability via metalinguistic negation. Let us assume that (5) contains a non-denoting expression (*my wife*). A presupposition-cancelling negative utterance like "You don't have to pick up your wife at the gym; you do not have a wife" could be used by the addressee B to correct the speaker A, when A is deemed dishonest or misleading. We believe that these denials, which seldom arise in conversation, may be more likely to occur in the case of *exploitative* informative uses of presuppositions than in the case of non-exploitative ones (modulo face-management considerations).

factive verb, as in (1a), the set of possible answer to the question at issue all asymmetrically entail – i.e. entail but are not entailed by – the same proposition, (1b). For this reason, Simons argues, it would make sense to raise the question (1c) only if one already believed that (1b) was true. Therefore, the addressee infers that the speaker believes the presupposition (1b). According to this view, the presupposition (1b) is the result of a conversational inference that the addressee derives on the basis of what is said, plus the assumption that the speaker is behaving cooperatively.

The conversational source of presuppositions carried by change of state verbs and factive verbs explains why they display crucial properties of conversationally generated inferences, such as ‘contextual defeasibility’ and ‘nondetachability’. With respect to contextual defeasibility, for instance, Simons (2001) discusses cases of ‘ignorance contexts’, i.e., circumstances in which the addressee is aware that the speaker is ignorant with respect to the potential presupposition (see also Gazdar 1979 on the notion of “potential presupposition”). Consider the following example proposed by Geurts (1994). Imagine which A and B are meeting for the first time and A says to B:

(6) I notice that you keep chewing on your pencil. Have you recently stopped smoking?

In this case, A cannot be familiar with any of B’s habits and B is aware of the fact that the A is ignorant about whether she was a smoker or not. As Simons points out, in this case, the proposition *that B used to smoke* is not considered a presupposition of (6). The reason is that no implication arises that A believes B to have been a smoker, as this assumption is contextually defeated. Rather, “the speaker is understood merely as asking whether the addressee has undergone the relevant change of state from being a smoker to not being one” (Simons 2001, p. 2). To sum up, according to Simons (2001), (at least some) presuppositions arise only if supported by the context of the utterance, and as the result of an interpretative process that is governed by conversational principles⁸.

As we will discuss in the next section, an analysis of the role of inference with respect to presuppositions cannot be limited to the question of *when* a certain presuppositional content arise as part of the speaker’s intended meaning. We argue that this analysis needs to shed light on *which* content is taken to be presupposed and *how* this is the case.

4.1 Pragmatic contributions to the presupposed content

The definition of presupposition proposed by current relevance-based accounts includes both linguistic and discursive presuppositions. These two categories are assimilated in virtue of the role they both play in the process of utterance interpretation, that is, the role of relevance

⁸ The idea that at least some presuppositions have a pragmatic source has been further developed by Abusch (2005, 2010). Abusch distinguishes between two types of presupposition triggers, usually referred to as ‘soft’ and ‘hard’ triggers. ‘Soft’ triggers include change-of-state verbs, cognitive factives, accomplishment verbs, and the existential presupposition of focus, while examples of ‘hard’ triggers are the emotive factives, focus particles and clefts. According to Abusch, the crucial difference between the two categories is that ‘soft’ triggers, but not ‘hard’ triggers, put forth a presupposition which is pragmatically derived. Many derivation procedures have been proposed in this respect (Abusch 2010, Romoli 2015). One main reason for such a distinction is that, according to Abusch (2005, 2010) the presuppositions of ‘soft’ triggers can be suspended, while that of ‘hard’ triggers is not suspendable. For a recent criticism of the soft/hard distinction, see Abrusan (2011, 2016).

establishers. However, linguistic and discursive presuppositions are typically distinguished based on “whether the content is linguistically and semantically determined or not” (Saussure, 2013, p. 180). According to this view, the propositional content of a linguistic presupposition is semantically determined, whereas that of a discursive presupposition is recovered on the basis of pragmatic inference. For instance, Simons (2005, footnote 21) suggests that the presupposition of dedicated triggers, such as *again* and *too*, is “calculated, presumably compositionally, on the basis of the content of the trigger plus the rest of the content expressed”. Furthermore, she maintains that “[o]ne aspect of the semantics of the presupposition trigger must be to trigger a second process of meaning composition whereby the presuppositional proposition is derived”. In what follows, we argue that this process involves pragmatic inference over and beyond semantic decoding. The latter only provides an underdetermined content which is *pragmatically enriched*. Consider the following example:

(7) a. The elevator broke again.

The dedicated presupposition trigger *again* semantically encodes a procedure that leads to the recovery of the proposition (9b). However, a pragmatically enriched proposition, which specifies the number of times t at which the elevator broke prior to t' can be derived so that (9a) can be taken to presuppose, for instance, either (9c) or (9d).

- (7) b. The elevator broke at (at least one) time $t < t'$
 c. The elevator broke at n times $t_1-t_n < t'$
 d. The elevator broke at a single time $t < t'$

Imagine a context in which A has announced to B her decision to move out from her current flat. B asks: “Why do you want to move out?” and A replies with an utterance of (7a). As A’s utterance is only going to be relevant if it provides B with a reason why A has decided to move out, B is likely to interpret (7a) as presupposing (7c). This is because (7c) – but neither (7b) nor (7d) – would appear to provide such a reason. Compare this scenario with one in which A calls the caretaker of her block of flats after having some problem with the elevator which had been repaired the previous week. A’s utterance, (7a), is likely to be interpreted as presupposing (7d), where t corresponds to a time falling within the previous week. This proposition, together with the explicit content of (7a), would warrant the implicature that the caretaker need to contact the company which repaired the elevator as a second intervention appears to be needed.

We can apply the same considerations to the presupposition of other triggers, such as the focus sensitive particle *too*. Consider an utterance of the following sentence:

(8) a. Laura is a linguist too.

The presupposition trigger *too* contained in (8a) encodes a procedural instruction that prompts the recovery of the presupposition that *someone other than Laura is a linguist* (8b). However, a specific referent can be contextually assigned so that (8a) is taken to presuppose that other relevant individuals are linguists, (8c), or that a single relevant individual other than Laura is a linguist, (8d).

- (8)
- b. Someone other than Laura is a linguist.
 - c. Mark, Sarah, and John are linguists.
 - d. John is a linguist.

We illustrate these three cases by considering the following scenarios. First, suppose that the speaker A is at the pub with a group of friends. Some of them, Laura, Mark, Sarah, and John are doctoral students in Linguistics. The group is discussing a recent piece of news: next year, a selection of doctoral students in Linguistics from any university will be awarded some extra funds for participating in international conferences. Everybody knows that Laura has spent the last few months looking for a grant to present her work overseas. Finally, she has the occasion of obtaining the research funds she was looking for. In this circumstance, A utters (8a). A's utterance is intended to convey the implicature that Laura will finally get the chance to attend an overseas conference by entering the selection procedure. Clearly, for (8a) to achieve this effect, it is enough that the audience interprets the utterance in a context containing the assumption (8b). As neither (8c) nor (8d) specifically contribute to the relevance of the utterance in this context, they will not be presupposed.

Second, imagine that the group of friends starts discussing the last paper of Noam Chomsky. The non-linguists ask for the opinion of the experts in the group. Mark, Sarah, and John, as linguists, express their opinions while Laura remains quiet. In this circumstance, A utters (8a) to invite Laura not to be shy and express her opinion on the matter. In this context, (8a) will be relevant in the intended way only if the audience takes it as presupposing the pragmatically enriched proposition that there are other linguists in the group of friends (8c), Mark, Sarah and John, who have all expressed their opinion. Neither (8b) nor (8d) seem to offer a relevant alternative for the focus particle *too*. Both (8b) and (8d) would be underinformative alternatives: the fact that Laura is a linguist like many other unspecified individuals in the world does not provide a sufficient reason to implicate that she is invited to express her opinion on Chomsky's idea in the context of that conversation; hence, (8b) is not a relevance establisher for (8a). Similarly, the fact that John, and only John, is a linguist like Laura is not a strong enough reason to invite Laura not to be shy and express her opinion. What is relevant here is that not only John but all the other linguists in that group have expressed their opinion and only Laura is missing.

Finally, imagine that the group starts discussing an open position as a teaching assistant for which all the linguists in the group could apply. Mark and Sarah declare not to be interested in that position, while John says he intends to submit an application. A utters (8a) with the intention to implicate that Laura should also apply. Crucially, neither the assumption in (8b) nor that in (8c) would provide the appropriate context to warrant the intended implicature. Some linguists might not be interested in applying for the position at issue (as it is the case for Mark and Sarah). The intended implicature that Laura, as a linguist, should apply for the position is derived from the assumptions that John is a linguist (8d) and that Laura and John might apply for the same position.

As examples (7) and (8) illustrate, the presuppositional content is recovered by virtue of a semantic process of meaning composition as well as with the contribution of pragmatic enrichment. The latter is driven by the search for an overall interpretation that satisfies the

hearer's expectations of relevance. According to Relevance Theory, this search subsumes three different sub-tasks concerning the construction, respectively, of appropriate hypotheses about explicit content, intended contextual assumptions and of intended contextual implications (or implicated conclusions). These sub-tasks are not sequentially ordered. Thus, the interpreter is not required to *first* recover the explicit content of the utterance, *then* select a useful range of contextual assumptions, and *finally* derive the intended contextual implications. When the hearer has precise expectations about the intended implications, the comprehension procedure can be effect-driven and involve a process of 'mutual parallel adjustment' between the intended implications and the assumptions (explicit or implicit) that need to be part of the overall interpretation to warrant their derivation (Wilson & Sperber, 2004). The overall interpretation is thus reached via forward as well as backward pragmatic inferences. Crucially, we want to highlight the fact that this process involves the construction of interpretative hypotheses about the intended presuppositional context. As the examples discussed above illustrate, the propositional content of the presupposition is constructed in such a way that it warrants, together with the explicit content of the utterance and further contextual assumptions, the derivation of the intended conclusions. In other terms, even the presupposition may be constructed in order to satisfy *specific* expectations about the relevance of the utterance.

5. Conclusions

The aim of this paper was two-fold: on the one hand, to argue that presuppositions are part of what is *ostensibly* communicated by a speaker; on the other hand, to show how presuppositions are *inferentially* derived by a hearer. The relation between ostension and inference has been extensively discussed within Relevance Theory. The relevance-theoretic definition of ostensive-inferential communication provides the unifying framework to look at the communicative behaviors of speakers and hearers: once the behavior of the speaker is recognized as ostensive, a presumption of relevance guides the hearer in interpreting her communicative act (Clark, 2013). Crucially, the relevance-based accounts of presuppositions proposed by Simons (2005) and Saussure (2013) treat presuppositional phenomena as falling outside the realm of ostensive-inferential communication. We departed from this standard assumption and discussed the benefits of our approach.

In section 3, we suggested that presuppositions are part of the array of propositions that are made mutually manifest by the speaker's utterance. This proposal required a fine-grained analysis of the definition of communicative and informative intention. First, it is important to recognize that this definition does not require each individual proposition that is part of the array to be mentally represented by the speaker as such. Second, it is crucial to appreciate the graded nature of manifestness: propositions that are already manifest to an individual can be made *more manifest* to him (e.g. by increasing salience or epistemic strength). This analysis led us to recognize the place of presupposition in the domain of ostensive-inferential communication. Crucially, this move amounted to more than a terminological exercise. As discussed in section 3.4, our account displayed the conceptual resources to explain a variety of presuppositional uses in a unifying way. Specifically, it allowed us to cover the whole range of cases from non-informative, or 'common ground' presuppositions, to informative presuppositions, as well as cases of exploitative presuppositions.

In section 4, we examined the extent to which presuppositions involve pragmatic inference. We argued that the role of pragmatic inferences goes well beyond what had been recognized so far. Relevance-based accounts of presuppositions view the context-sensitivity of (at least some) presuppositions as pertaining to the question of whether presuppositions are triggered by default across different contexts. Importantly, they suggest that this is not the case and that presuppositions are defeasible. Presuppositions arise when they do play a role in the process of utterance interpretation (as ‘relevance establisher’) and when they are compatible with the hearer’s expectations of relevance. We agreed with this stance but embraced a more radical pragmatic view of presupposition. Specifically, we suggested that, when presuppositions are generated, their propositional content is the result of a process involving both semantic decoding and pragmatic inference. Presuppositions are involved in the inferential process of ‘mutual parallel adjustment’, where the presuppositions, the explicit content and the implicatures of the utterance are constructed in such a way that the overall interpretation of the utterance will satisfy the hearer’s expectations of relevance.

Ostension and inference represent the two sides of the same coin and can shed a complementary light on presuppositional phenomena. This paper represents a step towards an integrated approach to the study of presupposition, one that explores the implications of treating presupposition as a genuinely *communicative* phenomenon and puts it under the scrutiny of a pragmatic analysis.

References

- Abrusán, M. (2011). Predicting the Presuppositions of Soft Triggers, *Linguistics and Philosophy*, 34(6), 491-535.
- Abrusán, M. (2016). Presupposition cancellation: explaining the ‘soft-hard’ trigger distinction, *Natural Language Semantics*, 24(2): 165-202.
- Abusch, D. (2005). Triggering from Alternative Sets and Projection of Pragmatic Presuppositions. *Ms., Cornell University*. Available at <http://semanticsarchive.net/Archive/jJkYjM3O/Abusch-Triggering.pdf>.
- Abusch, D. (2010). Presupposition triggering from alternatives. *Journal of Semantics*, 27(1), 37-80.
- Abbot, B. (2000). Presuppositions as nonassertions. *Journal of Pragmatics*, 32(10): 1419-1437.
- Aikhenvald, A. (2004). *Evidentiality*. Oxford: Oxford University Press.
- Andersen, G. & Fretheim, T. (Eds) (2000). *Pragmatic Markers and Propositional Attitude*. Amsterdam: John Benjamins.
- Ariel, M. (2016). Revisiting the typology of pragmatic interpretations. *Intercultural Pragmatics*, 13(1), 1-35. doi:10.1515/ip-2016-0001
- Austin, J. L. (1962). *How to do things with words*. Cambridge: Harvard University Press.
- Beaver, D. I., Roberts, C., Simons, M. & onhauser, J. (2017). Questions under discussion: Where information structure meets projective content. *Annual Review of Linguistics*, 3, 265-284.
- Blakemore, D. (1987). *Semantic Constraints on Relevance*. Oxford: Blackwell.
- Blakemore, D. (2002). *Relevance and Linguistic Meaning: The Semantics and Pragmatics of Discourse Markers*. Cambridge: Cambridge University Press.

- Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage*. Cambridge: Cambridge University Press.
- Clark, B. (2013). *Relevance Theory, Cambridge Textbooks in Linguistics*. Cambridge: Cambridge University Press.
- Domaneschi, F., Carrea, E., Penco, C., & Greco, A. (2014). The cognitive load of presupposition triggers: mandatory and optional repairs in presupposition failure, *Language, Cognition and Neuroscience*, 29, 136–146.
- Domaneschi, F., Canal, P., Masia, V., Lombardi Vallauri, E., Bambini, V. (2018). N400 and P600 modulation in presupposition accommodation: The effect of different trigger types. *Journal of Neurolinguistics*, 45, 13–35.
- Escandell-Vidal, V. (1998). Intonation and procedural encoding: The case of Spanish interrogatives. In V. Rouchota and A. Jucker, (Eds.) *Current Issues in Relevance Theory*. Amsterdam: John Benjamins (169–203).
- Escandell-Vidal, V. (2002). Echo-syntax and metarepresentations. *Lingua*, 112, 871–900.
- Fitneva, S., & Matsui, T. (Eds), (2009). *Evidentiality: A Window into Language and Cognitive Development*. San Francisco, CA: Wiley.
- Frege, G. (1982). On sense and reference. Reprinted in: A.P. Martinich (Ed.), *The Philosophy of Language (4th edition)*. New York: Oxford University Press, 2000.
- Garcia-Carpintero, M. (2013). Insinuating information and accommodating presuppositions. In L. Goldstein, (Ed.), *Brevity*, Oxford: Oxford University Press (214-229).
- Gazdar, G. (1979)/ *Pragmatics: Implicature, presupposition and logical form*. New York: Academic Press.
- Geurts, B. (1994). *Presupposing*. PhD dissertation, Universität Osnabrück.
- Glanzberg, M. (2003). Felicity and presupposition triggers. *Workshop in Philosophy and Linguistics*, University of Michigan, Michigan.
- Glanzberg, M. (2005). Presuppositions, truth values and expressing propositions. In G. Preyer & G. Peter (eds.), *Contextualism in philosophy: Knowledge, meaning, and truth*. Oxford, UK: Oxford University Press.
- Grice, H. P. (1989). *Studies in the Way of Words. Philosophy* (Vol. 65). Cambridge, MA: Harvard University Press.
- Hedley, P. (2005). Pronouns, Procedures and Relevance Theory. *Durham and Newcastle Working Papers in Linguistics*, 11, 41–55.
- Hedley, P. (2007). Anaphora, Relevance and the Conceptual/Procedural Distinction. University of Oxford D.Phil dissertation.
- Heim, I. (1982). *The semantics of definite and indefinite noun phrases*. University of Massachusetts Amherst. Doctoral dissertation available from Proquest. AAI8229562. <https://scholarworks.umass.edu/dissertations/AAI8229562>
- Jayez, J., Mongelli, V., Reboul, A., & Van Der Henst, J-B. (2015) Weak and strong triggers. In F. Schwarz, (ed.), *Experimental Perspectives on Presuppositions* (pp. 173-194), London: Springer International Publishing.
- Jary, M. (2010). *Assertion*. Palgrave Macmillan UK.
- Karttunen, L. (1974). Presupposition and linguistic context. *Theoretical Linguistics*, 1, 181--193.
- Levinson, S. C. (1983). *Pragmatics*. Cambridge, England: Cambridge University.

- Lewis, D. (1979). Scorekeeping in a language game. *Journal of Philosophical Logic*, 8, 339-359.
- Matsui, T., Rakoczy, H., Miura, Y., & Tomasello, M. (2009). Understanding of speaker certainty and false-belief reasoning: A comparison of Japanese and German preschoolers. *Developmental Science*, 12, 602–613.
- Matsui, T., Yamamoto, T., & McCagg, P. (2006). On the role of language in children's early understanding of others as epistemic beings. *Cognitive Development*, 21, 158–173.
- Mazzarella, D. (2014). Is inference necessary to pragmatics? *Belgian Journal of Linguistics*, 28, 71-95.
- Papafragou, A., Li, P., Choi, Y., & Han, C.-H. (2007). Evidentiality in language and cognition. *Cognition*, 103, 253–299.
- Romoli, J. (2015). The Presuppositions of Soft Triggers are Obligatory Scalar Implicatures, *Journal of Semantics*, 32(2): 173–219.
- Saussure, de, L. (2013). Background relevance. *Journal of Pragmatics*, 59, 178-189.
- Sbisà, M. (1999). Ideology and the persuasive use of presupposition. In J. Verschueren (ed.), *Language and Ideology. Selected Papers from the 6th International Pragmatics Conference*, Vol. 1 (pp. 492-509). Antwerp: International Pragmatics Association.
- Schumacher, P.B. & Hung, Y.C. (2012). Positional influences on information packaging: Insights from topological fields in German. *Journal of Memory and Language*, 67, 295–310.
- Schwarz, F. (2015) (Ed.). *Experimental Perspectives on Presuppositions, Studies in Theoretical Psycholinguistics*. London: Springer International Publishing. ISBN: 978-3-319-07979-0
- Searle, J. (1969). *Speech acts: An essay in the philosophy of language*. Cambridge: Cambridge University Press.
- Simons, M. (2001). On the conversational basis of some presuppositions. In R. Hastings, B. Jackson and Z. Zvolensky (Eds), *SALT XI*, 431-448. Itacha, NY: Cornell University.
- Simons, M. (2005). Presuppositions and relevance. In: Szabo, Z. (Ed.), *Semantics Versus Pragmatics*. (pp. 329-355). Oxford: Oxford University Press.
- Simons, M. (2007). Presupposition and cooperation. Carnegy Mellon University, ms, <https://www.cmu.edu/dietrich/philosophy/docs/simons/Presupposition%20and%20cooperation.non-anonymous.pdf>
- Simons, M. (2013). Presupposing. In M. Sbisà and K. Turner (Eds), *Pragmatics of Speech Actions* (pp. 143-172). De Gruyter Mouton.
- Simons, M., Beaver, D. Roberts, C., & Tonhauser, J. (2017). The best question: Explaining the projection behavior of factives. *Discourse Processes*, 54(3), 187–206.
- Sperber, D., & Wilson, D. (1995). *Relevance: Communication and Cognition*. Oxford: Blackwell.
- Sperber, D. & Wilson, D. (2015). Beyond speaker's meaning. *Croatian Journal of Philosophy*, XV(44), 117-149.
- Stalnaker, R. (1973). Presuppositions. *Journal of Philosophical Logic*, 2(4), 447-457.
- Stalnaker, R. (1974). Pragmatic presuppositions. In M. K. Munitz and P. K. Unger (Eds.), *Semantics and philosophy*. (pp. 197-213). New York: New York University Press.
- Stalnaker, R. (2002). Common Ground. *Linguistics and Philosophy*, 25(5-6), 701-721.
- Strawson, P. (1950). On referring, *Mind*, 59, 320-344.

- Wang, L. & Schumacher, P.B. (2013). New is not always costly: evidence from online processing of topic and contrast in Japanese. *Frontiers in Psychology*, 4, 1–20.
- Wilson, D. (2011). The conceptual-procedural distinction: Past, present and future. In: Escandell-Vidal, V. and Leonetti, M. and Ahern, A., (Eds.) *Procedural Meaning: Problems and Perspectives*. (pp. 3-31). Emerald Group Publishing.
- Wilson, D., & Sperber, D. (1993). Linguistic form and relevance. *Lingua*, 90, 1–25.
- Wilson, D., & Sperber, D. (2004). Relevance Theory. In L. R. Horn & G. L. Ward (Eds.), *Handbook of Pragmatics* (pp. 607–632). Oxford: Blackwell Publishing.
- Wilson, D., & Wharton, T. (2006). Relevance and prosody. *Journal of Pragmatics*, 38, 1559–1579.