



# Quality as a Speech-Act CI and Presuppositions

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**Abstract.** In this paper, I propose a novel account of Gricean Quality [3] in terms of conventional implicatures (CIs) that speech acts give rise to. This view of Quality as a speech-act CI leads to a novel view of the relation between Quality CIs and CIs arising on the prejacent rather than the speech-act level of utterance meaning, as triggered by expressives and parentheticals [13]. It also sheds light on the interaction of (Quality) CIs and presuppositions, which I take to be properties of propositions. On my view, utterance felicity is determined by both speech-act CIs differing by utterance type and prejacent CIs. Building on Grice's maxims of Quality, I propose speech-act CIs for three types of utterances differentiated by interrogative vs. assertive force and speaker- vs. addressee-orientation and predict the effect of presuppositions on utterance felicity by their interaction with the use-conditional evaluability of speech-act CIs, and, in some cases, prejacent CIs.

## 1 Truth- and Use-Conditional Meaning

I propose to capture utterance felicity, and thus utterance meaning, in terms of use conditions, where the use-conditional meaning of an utterance is characterized by a set of propositions, which, when true, make the utterance felicitous—see for instance Gutzmann (2015) [6] for extensive discussion of formal approaches to the basic idea of use-conditional meaning formulated by Kaplan (1999) [8]. Formally, I build on my own analysis of speech-act types and utterance felicity in Rieser (2017) [15] for the formal implementation of speech-act CIs, which in turn builds on Potts (2005) [13] framework of feature semantics with extensions by Gutzmann, which I rely on for both the basic definition of CIs and the formal implementation of prejacent CIs, and extensions due to McCready (2015) [12], which I use to implement the analysis of Quality as a speech-act CI.

### 1.1 Utterance Felicity and Conveyed Utterance Meaning

The felicity conditions of an utterance are determined by the set of propositions in its expressive meaning dimension, that is by its use-conditional meaning. The expressive meaning dimension of an utterance can also be thought of as the set of its CIs, containing both prejacent CIs and speech-act CIs. Prejacent CIs are those

conventional implicatures that arise from triggers contained in the prejacent of a speech act, such as lexical CI-triggers like expressives or parentheticals, *cf.* Potts (2015) [14]. Speech-act CIs, on the other hand, arise from the respective speech act that is performed in the utterance. As mentiI also refer to the two types of CIs contained in the CI set as the prejacent and speech-act levels of utterance meaning, respectively. I claim that the conveyed meaning of an utterance is determined by these two levels of meaning taken together. This means that it is an utterance’s use-conditional or expressive content, rather than its truth-conditional or descriptive content is what determines the meaning it conveys. This claim is based on the assumption that an utterance conveys information about its speaker’s mental state via observer (addressee) reasoning based on the assumption that the utterance is felicitous.<sup>1</sup> As utterance felicity is thus determined by the truth or falsity of the CIs (both prejacent and speech-act) it gives rise to, and as these are only indirectly connected to the truth or falsity of the utterance’s descriptive content, I thus claim that an utterance’s use-conditional meaning fully captures its conveyed meaning.

## 1.2 Felicity and the Expressive/Descriptive Distinction

To illustrate the relation between truth- and use-conditional meaning on one hand, and the descriptive and expressive dimensions of utterance meaning on the other, consider example (1) of an assertion of a prejacent proposition  $\varphi$  = “Ash is home” without CI-triggers.

(1) Ash is home.

(1) is intuitively judged a “true” assertion when  $\varphi$  holds at the utterance world, but as “false” when this is not the case. That is, the perceived truth or falsity of the assertion depends on the valuation of  $\varphi$  at the world (and time) of utterance. I claim that the question of whether or not (1) is a felicitous assertion of  $\varphi$ , however, depends not directly on the truth or falsity of  $\varphi$  at the utterance world, but rather on whether or not the originator of the utterance, *i.e.* the speaker believes  $\varphi$  to be true and has adequate (in the Gricean spirit) evidence to back up this belief. The prejacent proposition  $\varphi$  is the utterance’s descriptive content, with which in the case of (1) the speech act of assertion is performed, so that utterance felicity is closely linked to the truth of  $\varphi$ . However, this is, for instance, not the case in questions, where utterance felicity is independent of the truth of the prejacent proposition, even though it has the same descriptive content as an assertion. As an intuitive test, an utterance’s descriptive content is the proposition  $\varphi$  on which the perceived truth or falsity of assertion depends. This is because, in the case of assertions, the descriptive content influences utterance meaning in form of quality CIs, as will be discussed in the analysis further below.

Other than the prejacent proposition or descriptive content of an utterance, prejacent CI-triggers are part of an utterance’s prejacent as opposed to being part

<sup>1</sup> See Rieser (2017) [15] for more discussion on the role of addressee reasoning in the derivation of conveyed utterance meaning.

of or modifying the speech act itself. However, they directly influence whether or not it is judged as “felicitous” or “infelicitous”, that is they are part of the expressive meaning and do not influence, for instance, whether or not an assertion is intuitively judged as “true” or “false”. Prejacent CIs thus contribute to the utterance’s use-conditional meaning, and together with speech-act CIs that arise from the speech act proper (see next section) constitute an utterance’s expressive content, which I claim to be its conveyed meaning. Prejacent CI-triggers include parentheticals or expressives such as the negatively connotated *cur* vs. the attitude-neutral<sup>2</sup> *dog*, cf. Gutzmann (2015) [6]. As for the relation between truth- and use conditions in (prejacent) CIs, the meaning of *cur* can be captured by a paraphrase on the lines of “the speaker has a negative attitude towards the dog referred to”, which needs to be *true* at the utterance world in order for the utterance (of any illocutionary force) hosting *cur* to be *felicitous*—the paraphrase of *cur*’s expressive meaning is part of the expressive as opposed to the descriptive dimension of utterance meaning as its truth *directly* influences felicity, regardless of utterance or speech-act type (assertion, question, etc.).

## 2 Speech-Act CIs and Utterance Felicity

The main focus of this paper, however, are not prejacent CIs as outlined above and much discussed in previous research, but speech-act CIs, in particular those that arise as Gricean Quality implicatures<sup>3</sup>. Since speech-act CIs are, in contrast to prejacent CIs, *necessarily* part of any utterance’s meaning, as whenever an utterance is made a speech act is performed and every speech act gives rise to speech-act CIs on my view, I take them to be the primary determinant of the felicity or infelicity of any given utterance. What I propose is that illocutionary force (which on my view arises from force such as assertive or interrogative together with sentence-final intonation) is a CI-trigger on the speech-act level of utterance meaning that gives rise to speech-act rather than prejacent CIs as CI-triggers on the prejacent level of utterance meaning do. In this section, I first briefly return to prejacent CIs in order to set the stage for the subsequent discussion of the speech-act CIs of assertions as well as other speech acts, concretely rising declaratives and rising interrogatives or questions. In the next section, I move on to discuss the interaction of utterance felicity and presuppositions.

### 2.1 Prejacent CIs and Utterance Felicity

Parallel to prejacent CIs arising from triggers such as expressives and parentheticals, expressive meaning arising on the speech-act level, *i.e.* speech-act CIs can be paraphrased in terms of use-conditional propositions. Both can thus be captured within the same form and framework, an analysis I sketch in the following

<sup>2</sup> Ignoring the possible use of either as a derogatory term when referring to a person.

<sup>3</sup> For more detailed discussion on the basic idea of Gricean implicatures as CIs see McCready (2015) [12] and Rieser (2017) [15].

section. To illustrate how speech-act CIs differ by illocutionary force or utterance type and to demonstrate how they differ from prejacent CIs, consider the example of an assertion (or, on my compositional view of illocutionary force, of a final falling declarative) in (2), a variant of (1) to which a prejacent CI-trigger has been added.

(2) Ash, that bastard, is home.

The descriptive content of the utterance is  $\varphi =$  “Ash is home”, just as in (1) above. On top of this, the parenthetical “that bastard” with the lexical CI-trigger “bastard” adds expressive content I label  $\psi$ , which can be paraphrased on the lines of “the speaker has a negative attitude towards Ash” (I choose this example to represent both of the prejacent CI-triggers mentioned above—expressives and parentheticals). Crucially,  $\psi$  has no bearing on the truth conditions of  $\varphi$ , and does not influence whether assertion of  $\varphi$  is judged “true” but rather adds directly to the use, or felicity, conditions of the utterance. While both  $\varphi$  and  $\psi$  need to be true for felicitous assertion of  $\varphi$ , the intuition is that if  $\psi$  is false, *i.e.* if the speaker does not have a negative attitude towards Ash, this does not make (2) “false”, but rather “infelicitous”. This is in contrast to  $\varphi$ , the truth or falsity of which determines the perceived truth or falsity of the assertion.

## 2.2 Descriptive Content and Felicity of Assertion

This leads to the following question: if not only expressive content such as  $\psi$ , but also  $\varphi$ , the propositional content or prejacent that constitutes the descriptive content of (2), should intuitively hold for assertion to be felicitous, how exactly does the truth or falsity of  $\varphi$  relate to the utterance’s felicity? A straightforward assumption might be to assume that  $\varphi$  needs to be true in order for the utterance to be felicitous. To my intuition, however, this is not necessarily the case, as if the speaker of (2) has sufficient grounds to believe  $\varphi$  and does not entertain a belief to the contrary, the utterance could reasonably be judged felicitous even if Ash, in fact, is not home.<sup>4</sup> This directly relates felicity of assertion to the two specific Gricean maxims of Quality—when they are satisfied, the utterance is felicitous.

The use-conditional propositions (3) and (4) represent the first and second maxims of Quality, respectively. I claim that they need to be true in order for assertion to be felicitous and are thus relating the truth or falsity of its descriptive content to felicity by way of use-conditional propositions.

(3) The speaker does not believe  $\varphi$  to be false.

<sup>4</sup> I am not claiming that when the speaker of an assertion believes the prejacent proposition to be true, but it is in fact false, there is *nothing* wrong with this assertion. It seems, however, quite clear to me that there is *something else* wrong when the speaker actually believes the prejacent to be false or has no sufficient grounds to assert it. The latter is the kind of badness (Gricean in spirit) I seek to capture—see Jary (2010) [7] for an overview of alternative views.

- (4) The speaker has evidence to back up commitment to  $\varphi$  by assertion.

The basic assumption for my proposal is that the use-conditional propositions (3) and (4) are added to the expressive meaning of (2) as speech-act CIs from assertive force, much like the prejacent-CI  $\psi$  is added by the parenthetical “that bastard”. It should be noted here that when (3) and (4) hold, it can be concluded that (5) holds as well.

- (5) The speaker believes  $\varphi$  to be true.

While accounting for the modification of Quality II, *i.e.* (4) by speech-act modifiers such as evidentials makes both (3) and (4) necessary, for the proposal below it is sufficient to assume that Quality gives rise to (5), directly committing the speaker to the prejacent. (5) also accounts for the most basic intuition on felicitous assertion that the speaker needs to believe the prejacent to be true (also reflected in Grice’s general maxim of Quality “Try to make your contribution one that is true”).

### 2.3 Felicity of Other Utterance Types

Next, what about speech acts other than assertions, specifically such with final rising intonation, which are not readily accounted for with Gricean maxims? When they have the same prejacent proposition, their descriptive meaning ought to be the same, but it relates differently to their felicity, *i.e.* must enter expressive meaning in a way that differs from assertion. Consider the example of a rising declarative (RD) in (6) and the question, or rising interrogative, in (7) below.

- (6) Ash, that bastard, is home?  
 (7) Is Ash, that bastard, home?

Both (6) and (7) share their prejacent proposition  $\varphi$  with the assertion, or falling declarative, in (2), and the parenthetical contributes the same use-conditional proposition  $\psi$ .

I claim that the difference in felicity to (2) can be straightforwardly explained by different CIs arising from rising declarative and rising interrogative force. First, I propose that use-conditional propositions (8) and (9) become part of expressive meaning of RDs as speech-act CIs.

- (8) The speaker does not assume the addressee believes  $\varphi$  to be false.  
 (9) The speaker has evidence to back up commitment of the addressee to  $\varphi$ .

This is based on the assumption that from rising declaratives, (indirect) commitment of the addressee by the speaker arises, as paraphrased in (10). Similar assumptions also underlie the RD-analyses of Gunlogson (2003) [5] and Davis (2011) [2], also compatible with analyses of RDs as “monopolar questions” like that in Krifka (2015) [11].

- (10) The speaker assumes the addressee believes  $\varphi$  to be true.

This reflects the intuition that by uttering a rising declarative, the speaker commits to a higher-order belief over addressee belief based on evidence not for the prejacent proposition itself, but for the addressee believing that this is the case.

The second type of speech act with rising intonation I discuss are rising interrogatives, or canonical (addressee-oriented) questions. Categorizing speech acts by sentence type (declarative or interrogative) and sentence-final intonation (rising and falling), questions differ from assertions in both categories. I first propose that both falling and rising interrogatives give rise to a speech-act CI as paraphrased in (11).

(11) The speaker does not believe  $\varphi$  to be true.

Clearly, this can not account for all things that questions do but rather gives the bare-bones condition which needs to be satisfied in any case where a rising (or other) interrogative is uttered, in the case of canonical, information-seeking questions corresponding to Searle's (1969) [18] condition that the speaker "not know the answer". Furthermore, rising interrogatives plausibly give rise to the implicature that the speaker does *not* commit the addressee to a belief regarding the prejacent, *cf.* Rieser (2017) [15]. The problem of what the effect of questions on the utterance context and thus the discourse is relates to their information-seeking function and been discussed in a large body of research—for recent theories, see, for instance, the inquisitive approach differentiating between inquisitive and assertive update see Groenendijk and Roelofsen (2009) [4] and Ciardelli and Roelofsen (2011) [1], or Krifka (2015) [11] for the commitment space approach on which questions are assumed to constrain possible continuations of the discourse. For the purposes of the discussion in this paper, however, it will be sufficient to consider the felicity condition on questions paraphrased in (11), which needs to be satisfied in order for any interrogative to be felicitously uttered.

Summing up, the descriptive content of an utterance links to different use-conditions depending on which speech-act CIs are associated with sentence type and sentence-final intonation (illocutionary force). Prejacent CI-triggers such as parentheticals and expressives, on the other hand, gives rise to the same CI regardless of utterance type: all of the assertion (2), the RD (6), and the question (7) require  $\psi =$  "the speaker has a negative attitude towards Ash" to hold to be felicitously uttered.

### 3 CIs and Presuppositions

While the discussion of how similar or different (prejacent-level) CIs and presuppositions are is ongoing—*cf.* Potts (2015) [14] and references therein for an overview, Karttunen and Zaenen (2005) [10] and Karttunen (2016) [9] for discussion highly relevant to this paper—their similarities are conspicuous enough to make the distinction somewhat fuzzy. In this section, I discuss the effect of presuppositions on utterance felicity the view from my theory of CIs on both the prejacent and the speech-act levels.

### 3.1 How Presuppositional Are CIs?

On my view, CIs (both speech-act and prejacent) are “presuppositional” in that they constitute conditions that need to be satisfied before an utterance is made, *i.e.* the use-conditional propositions representing them need to hold of the world at utterance time in order for a speech act to be performed felicitously. Presuppositions, on the other hand, need to be satisfied in order for truth of another proposition to be evaluable. In other words, presuppositions are properties of propositions, but in principle independent of speech acts—only when a speech act with a prejacent that contains a presupposition trigger is performed do presuppositions become conditions on utterance felicity.

To illustrate the relation between utterance felicity and presuppositions, consider the following three examples of assertions. (12) contains a presupposition trigger (“the king of France” after Russell’s classic example [17]), (13) a CI-trigger (“that bastard”, the same parenthetical as in the examples before), and (14) both a presupposition trigger and a CI-trigger.

- (12) Ash, that bastard, is home.  
 (13) The king of France is home.  
 (14) The king of France, that bastard, is home.

Example (12), repeated from (2), is an assertion with a parenthetical giving rise to the prejacent CI  $\psi$  = “the speaker has a negative attitude towards Ash”, which needs to be true for assertion of  $\varphi$  = “Ash is home” to be felicitous.

As example (13) contains no CI-triggers, no expressive content arises on the prejacent level, but the asserted proposition  $\varphi'$  = “the king of France is home” contains the presupposition trigger “the king of France” so that the truth of  $\varphi'$  can not be judged when the presupposition  $\pi$  = “there is a (unique) king of France” is not true. This has an effect on the felicity of (13) as the CI-triggering parenthetical does, for (2), but only via speech-act CIs—the truth or falsity of any proposition on speaker belief or evidence regarding  $\varphi'$  (*i.e.* that of the use-conditional properties reflecting the two specific maxims of Quality) can only be judged when  $\pi$  holds, or, more precisely, when the first-order agent within the speech-act CI believes that  $\pi$  holds (more on this shortly).

Finally, in (14), the prejacent CI  $\psi'$  = “The speaker has a negative attitude towards the king of France” is introduced to the expressive dimension of meaning in addition to the presupposition  $\pi$ . Note that in this particular case there is an interesting interaction between presupposition and CI: the truth of  $\psi$  can only be judged when  $\pi$  holds, thus  $\pi$  influences not only the evaluability of the use-conditional propositions representing speech-act CIs, but also of  $\psi'$  representing the prejacent CI. In this sense, presuppositions have a more global effect on the utterance’s meaning than prejacent CIs as they are a property of, rather than an expressive addition to, the descriptive content.

Table 1 sums up the discussion above: The expressive meaning of assertion of a prejacent proposition with the descriptive content  $\varphi$  containing a CI trigger consists of the use-conditional propositions from Gricean Quality, for assertion

written with  $\Box$  for doxastic necessity as  $\Box_S\varphi$  for “the speaker believes  $\varphi$  to be true”, *i.e.* the paraphrase of commitment from assertion, and the use-conditional proposition  $\psi$  representing the prejacent CI. When there is a presupposition trigger, but no CI trigger in the prejacent, the expressive meaning consists of the propositions from Gricean Quality that are only evaluable when the presupposition  $\pi$  holds, written as  $\Box_S\varphi'_\pi$ . Finally, with both presupposition trigger and (parenthetical) CI-trigger, the evaluation of  $\psi'$  also presupposes  $\pi$  in the example at hand, written here as  $\psi'_\pi$ .

**Table 1.** Expressive meaning of assertions with CIs and presuppositions

	(12)	(13)	(14)
Presupposition	None	$\pi$	$\pi$
Prejacent CI	$\psi$	None	$\psi'$
Expressive meaning	$\Box_S\varphi, \psi$	$\Box_S\varphi'_\pi$	$\Box_S\varphi'_\pi, \psi'_\pi$

To conclude, presuppositions differ from prejacent CIs in that they are required to be true for felicity to be evaluated, but their truth is merely a prerequisite for felicity and does not guarantee felicitous utterance. Furthermore, while presuppositions potentially interact with prejacent CIs as in (14), this is only the case because the CI-trigger is a parenthetical apposed to the presupposition trigger, and they are in principle independent. Next, I turn to the difference between speech-act CIs and prejacent CIs and their relation to presuppositions.

### 3.2 Speech-Act CIs vs. Prejacent CIs and Presuppositions

Presuppositions are properties of propositions which indirectly influence speech act felicity by the effect they have on speech-act CIs, but do not vary with the type of speech act they are used in—while the speech-act CIs are different for each utterance type, their evaluability depends on the truth of the original presupposition. This invariability across speech-act type is a property they share with prejacent CIs (*i.e.* CIs after Potts’ definition) which directly add felicity requirements to the expressive dimension, but there is a small yet crucial difference. As the effect of presuppositions on utterance felicity is mediated by speech-act CIs, intonation can shift the first-order agent of belief within the use-conditional proposition representing Gricean quality.

Speech-act CIs depend on the type of speech act they arise from. Therefore, the difference between prejacent CIs and speech-act CIs lies in the way that they interact with different speech-act types, as the following examples illustrate.

- (15) The king of France is home?
- (16) The king of France, that bastard, is home?
- (17) Is the king of France home?



(18) Is the king of France, that bastard, home?

A prejacent CI  $\psi'$  conveying the speaker's negative attitude towards the king of France equally arises from the versions of the rising declarative in (16) and the rising interrogative in (18) just as from the assertion (14) as all contain the same CI trigger. The presupposition  $\pi$  of the prejacent proposition with descriptive content  $\varphi'$  in both (15) and (17), on the other hand, has quite different effects in the two examples due to their different speech-act CIs.

First, felicity of the RDs (15) and (16) depends on whether the (use-conditional) propositions in (19) and (20) representing the first and second maxims of quality.

(19) *S* believes that *A* does not believe the king of France isn't home.

(20) *S* has sufficient evidence to commit *A* to the king of France being home.

When (19) and (20) are satisfied, this allows an observer to infer that (21), the paraphrase for commitment from the RD (15), holds. In the discussion, I will henceforth only mention commitment for ease of exposition.

(21) *S* assumes *A* believes the king of France is home.

What is the role in determining utterance felicity of the presupposition  $\pi$  that the evaluability of  $\varphi$  depends on? Note that in order for the truth of (21) to be evaluable, the speaker must have sufficient grounds to believe that the addressee believes  $\pi$ , *i.e.* that there is a king of France. However, the speaker does not necessarily have to believe this as well. I contend that a reading on which the speaker does not believe  $\pi$  is, while not necessarily the standard interpretation, available for (15), the RD without the parenthetical—"The king of France is home?" can felicitously be followed by an assertion "There is no king of France!". Note that this reading does not appear to be available for (16), the version of (15) with the parenthetical CI trigger, which is predicted due to the prejacent CI, that is the use-conditional presupposition  $\psi'$  on the use-conditional level requiring that the speaker has a negative attitude towards the king of France requires that the speaker believe  $\pi$  to be evaluated.

The case of the question in (17) is different in that no reference to addressee belief arises from the speech-act CIs that needs to be satisfied for felicitous performance of an interrogative speech act, given in (22).

(22) The speaker does not believe that the king of France is home.

Crucially, there is no requirement for the speaker to believe the prejacent proposition  $\varphi'$  to be false, which would require the truth of  $\pi$  to be evaluable, so that a version of (17) without the parenthetical would not be infelicitous if the speaker did not believe that there is a king of France. However, it is still intuitively a requirement for felicity of the question that the speaker believes so (a long-standing and widely accepted observation on presupposition projection), which I take to be due to the fact that presupposition failure would affect a potential

answer to the question. In other words, the partition introduced by the question would be bad as it rests on a foul premise, thus the speaker is required to believe  $\pi$  for felicitous utterance of a question with the prejacent  $\varphi'$ , the evaluability of which depends on the truth of  $\pi$ . While this cannot be fully captured without a dynamic and possibly an inquisitive framework, the badness of (17) in case the speaker does not believe  $\pi$  drastically increases with the parenthetical, as the evaluability of  $\psi'$  depends on the truth of  $\pi$ .

Table 2 sums up the expressive meaning of utterances with final rising intonation with presuppositions and with or without CI triggers. The speech-act CIs of the respective utterance types are written in form of belief propositions, where  $\square$  stands for doxastic necessity,  $\diamond$  for doxastic possibility,  $\square_x \square_y \varphi$  for “ $x$  believes (or assumes) that  $y$  believes  $\varphi$ ”, and  $\diamond_x \neg \varphi$  for “ $x$  does not believe  $\varphi$  to be true”. As above,  $S$  stands for the speaker,  $A$  for the addressee.

**Table 2.** Expressive meaning of RDs and questions with CIs and presuppositions

	(15)	(16)	(17)	(18)
Force	DECL $\uparrow$	DECL $\uparrow$	INT $\uparrow$	INT $\uparrow$
Presupposition	$\pi$	$\pi$	$\pi$	$\pi$
Prejacent CI	None	$\psi'$	None	$\psi'$
Expressive meaning	$\square_S \square_A \varphi'_\pi$	$\square_S \square_A \varphi'_\pi, \psi'_\pi$	$\diamond_S \neg \varphi'_\pi$	$\diamond_S \neg \varphi'_\pi, \psi'_\pi$

The discussion so far shows how presuppositions interact with utterance felicity depending on utterance or speech-act type on my view. First, in the case of rising declaratives, the requirement from a presupposition  $\pi$  is that the speaker assume the addressee believe  $\pi$  to be true. Next, in the case of rising interrogatives or questions, there is not necessarily a requirement that the speaker believe  $\pi$ , while there is potentially a requirement that the speaker believe the addressee to believe  $\pi$ , as otherwise the question could not be answered felicitously. Prejacent CIs differ clearly from presuppositions in that the speaker is always required to believe them, as well as the presupposition triggered by the phrase they are apposed to in case of the examples at hand, in order for the utterance to be felicitous.

## 4 Formal Implementation in Use-Conditional Semantics

In this section, I sketch an implementation of the proposal outlined above in a feature-semantics framework fundamentally based on Potts (2005) [13] analysis as further developed by McCready (2015) [12] (building on a number of previous innovations, see references therein). McCready’s crucial innovation for this project is that of an utterance-type in the expressive dimension—in my proposal, speech-acts are of this type and thus gives rise to speech-act CIs in the expressive dimension, while descriptive content and prejacent CIs come about as

usual. Also see Rieser (2017) [16] for an earlier version of this formal framework applied to non-canonical conditionals I take to restrict the modal base of speaker belief on the speech-act level, *i.e.* to operate on speech-act CIs in the terms of the present paper.

In the remainder of this section, I thus propose an account of Gricean Quality implicatures as speech-act CIs compatible with extant use-conditional theories of conventional implicature. Viewing presuppositions simply as conditions on the (truth-conditional) evaluability of propositions within this proposal finally sheds new light on the relation between CIs and presuppositions.

#### 4.1 Utterance Lifting and Speech-Act Level Meaning

To account for utterance modifiers such as Quality and Relevance hedges that operate on Gricean CIs, McCready (2015) [12] introduces an operation *utterance lifting* (UL), which moves descriptive content into the expressive domain. I take UL to generate a set of propositions as speech-act CIs, depending on illocutionary force. (23) shows my version of UL, writing  $\mathcal{A}$  for a speech act,  $t^a$  and  $t^c$  for truth- and use-conditional propositions respectively, and  $u^c$  for the aforementioned utterance type that I will use for speech-acts that generate the use-conditional propositions determining utterance felicity.

$$(23) \quad \text{UL}^{\mathcal{A}} = \lambda\varphi.\mathcal{A}(\varphi) : \langle t^a, u^c \rangle$$

This is a type-shifting operation, by which the descriptive content  $\varphi$  of an utterance is moved to the expressive domain, where a speech act  $\mathcal{A}$  is applied to  $\varphi$ , generating a characteristic set of use-conditional propositions (speech-act CIs) for each utterance type or illocutionary force (*i.e.* combination of sentence type and final intonation). Following the convention  $\langle \tau^a, \tau^c \rangle$ , writing truth-conditional types on the left, use-conditional types on the right, (24) shows the result of UL, where  $U^{\mathcal{A}}$  represents the set of speech-act CIs of type  $t^c$  resulting from application of  $\mathcal{A}$  to  $\varphi$ .

$$(24) \quad \langle \varphi, \mathcal{A}(\varphi) \rangle = \langle \varphi, U^{\mathcal{A}} \rangle$$

#### 4.2 Quality Implicatures as Speech-Act CIs

Representations showing the characteristic use-conditional propositions  $U^{\mathcal{A}5}$  in the expressive dimension for assertion (falling declarative, DEC  $\downarrow$ ), rising declarative (DEC  $\uparrow$ ), and question (rising interrogative, INT  $\uparrow$ ) with the prejacent  $\varphi$  are shown in (25) through (27) below, representing the speech-act CIs (in the case of the declaratives, the commitments that follow from them) introduced above to capture Quality implicatures.  $\Box_x\varphi$  and  $\Diamond_x\varphi$  stand for doxastic necessity and possibility relative to agent  $x$ 's beliefs. The descriptive content of the prejacent proposition is given as  $\varphi$ , and the prejacent contains neither presupposition nor CI-triggers.

<sup>5</sup> Here, I show speech-act CIs from Quality only, which are not necessarily the only members of  $U^{\mathcal{A}}$ , but the only ones that matter for the discussion in this paper.

$$(25) \quad \text{DEC}\downarrow(\varphi) = \langle \varphi, \Box_S \varphi \rangle$$

$$(26) \quad \text{DEC}\uparrow(\varphi) = \langle \varphi, \Box_S \Box_A \varphi \rangle$$

$$(27) \quad \text{INT}\uparrow(\varphi) = \langle \varphi, \Diamond_S \neg \varphi \rangle$$

This implements the basic claims on speech-act CIs from the discussion in the previous sections. First, with an assertion, the speaker commits to the descriptive content—the utterance is only felicitous if the speaker believes  $\varphi$  to be true. This is not to say that the goodness of assertion does not suffer when this belief is false, but I defend that this does not matter for Gricean Quality. Next, with a rising declarative, the speaker indirectly commits the addressee, that is the RD is felicitous if the speaker assumes that the addressee believes  $\varphi$ . Finally, a question only requires the speaker to not believe the prejacent  $\varphi$  to be true.

### 4.3 Prejacent CIs

Innovations regarding speech-act CIs notwithstanding, prejacent CIs behave in the usual way, so that when an expressive contributes  $\psi$  to the expressive dimension as in the examples containing the CI trigger “that bastard”, this simply adds the use-conditional proposition  $\psi$  (that the speaker has a negative attitude towards the referent of the phrase  $\psi$  is apposed to) to the expressive dimension, regardless of illocutionary force. The according meanings of the descriptive and expressive dimensions, *i.e.* of the truth- and use-conditions defining assertion, RD, and question after UL and application of the respective  $\mathcal{A}$  to  $\varphi$  are represented in (28) through (30), capturing the felicity conditions of three utterance types according to the present proposal.

$$(28) \quad \text{DEC}\downarrow(\varphi') = \langle \varphi, \psi \wedge \Box_S \varphi \rangle$$

$$(29) \quad \text{DEC}\uparrow(\varphi') = \langle \varphi, \psi \wedge \Box_S \Box_A \varphi \rangle$$

$$(30) \quad \text{INT}\uparrow(\varphi') = \langle \varphi, \psi \wedge \Diamond_S \neg \varphi \rangle$$

This simply shows that prejacent CIs enter expressive meaning directly and regardless of speech-act type.

### 4.4 Presuppositions

When the prejacent proposition  $\varphi'$  additionally contains a presupposition trigger that requires the presupposition  $\pi$  to be true for the truth of  $\varphi$  to be evaluable, this has roughly the following effects (I refer to the discussion in Sect. 3 for more details).

In the case of the declaratives, the condition for  $\pi$  is effectively the same as for the prejacent propositions: the speaker is required to believe  $\pi$ , or to assume that the addressee does ( $\Box_S \pi$  and  $\Box_S \Box_A \pi$ , respectively). Recall that I have argued that commitment arises from the satisfaction of the two maxims of quality, and assumed commitment to arise as a speech-act CI as a simplification. This does not go for presuppositions, which explains that they are not affected by utterance modifiers that target quality.

In the case of questions, on the other hand, similar implicatures may arise from presuppositions, but then depend on the information-seeking function of the question—an answer is not possible if the presupposition is not believed by the addressee, and can not be accepted by a speaker that does not believe the presupposition. Crucially, however, preadjacent CIs which carry presuppositions, as the parentheticals apposed to presupposition triggers in the examples given above, strengthen the presuppositions of questions, which is predicted by the current proposal.

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