# Speech acts, common ground and commitments

Corien Bary

**Abstract**

This paper argues that we cannot let the common ground do double duty. If we believe that both Stalnaker's and Clark's projects, on the one hand, and that of Peirce, Hamblin, Brandom and Geurts, on the other, capture important aspects of communication, two sets need to be distinguished: the set of common beliefs to capture the fact that we usually formulate our utterances based on what we assume is common belief between us and our interlocutors, and that of commitments to capture the idea that our assertions commit us to their contents. In discourse-semantic frameworks such as Farkas and Bruce' very influential Table model, the two are not distinguished as strictly as they should. This point is remedied in the context structure proposed in this paper. By distinguishing common beliefs and commitments, we are capable of dealing with the fact that in actual life we are often committed to things we don't believe and we often commonly believe things to which we are not committed.

The proposed context structure also allows us to do justice to the fact that with our speech acts we change the world. This is done by adding a Kaplanian context to the context structure. We can now separate the informative update as an update of the common ground (which importantly includes and even starts from an update of the performative aspects of the speech act) from the real performative change. The proposed context structure is suited to illustrate the multifaceted effects of speech acts. It thus also clarifies how certain pragmasemantic strands of research relate to each other in what they do and aim to do.

## 1 Introduction

Farkas and Bruce (2010) offer a model to represent the effects of speech acts. The effect of a speech act is here seen as an update of a context structure, where a context structure consists of a Table, representing what is currently under discussion, a common ground between the discourse participants, a set of individual discourse commitments for each participant, and a projected set representing the privileged future common grounds at the relevant time in the discourse. This model has become very popular and is used and further developed for many linguistic phenomena. To mention but a few papers that use and extend this model: Hogeweg et al. (2011), Northrup (2014), Chernilovskaya (2014), Ettinger and Malamud (2015), Torregrossa (2015), Eckardt (2016), Faller (2019), Bary and Maier (2021), and in the inquisitive semantics tradition Roelofsen

and Farkas (2015), Farkas and Roelofsen (2019), and following work. In this paper I argue that despite all its merits, in combining the Stalnakerian notion of common ground as the set of common beliefs with the idea of assertion as undertaking commitments as found in for example Hamblin, something strange has happened, in fact something has gone wrong. The main point is that believing something (even if it's common belief between participants) is crucially different from being committed to the same thing. This in itself is not a new idea (see e.g. Hamblin 1971, Geurts 2019), but I analyze in this paper where and how the two get mixed up in this widely-used model and why it is important to distinguish the two, not just from an abstract philosophical perspective, but also for the more down-to-earth enterprise of modelling the choices for and effects of our speech acts, as researchers in semantics and pragmatics aim to do. In addition, I argue that to really deal with the effects of our speech acts (we change the world, not just our information about the world!), we need more than this model can handle. I therefore propose to include a Kaplanian context to the context structure. I don't provide worked-out rules that specify exactly how to update the context structure for various speech acts. The main aim of this paper is conceptual clarification. At the very least, I hope that it will shed an insightful light on how certain popular pragmasemantic strands of research relate to each other in what they do and aim to do.

The paper is set up as follows. Section 2 introduces the framework of Farkas and Bruce (2010). In section 3 I will argue what goes wrong here (and in fact already in Gunlogson 2001). In section 4 I will argue what is needed to repair this. This forms the largest part of the paper. Section 5 concludes.

## 2 The starting point of the exploration

Farkas and Bruce (2010) present a model to represent the effects of speech acts, in particular to capture the similarities and differences between assertions and polar questions so as to explain the effects of reactions to these speech acts. For this model they go back to Stalnaker (1978) who introduces the notion of a *common ground* as a set of propositions that are common belief among the discourse participants.[1] Stalnaker uses this notion for the phenomenon of speaker presupposition: a speaker is said to presuppose a certain proposition iff she acts as if the proposition is part of the common ground, i.e. acts as if it is commonly believed between speaker and addressees. Stalnaker (1978, 323) proposes that

[1] Although Stalnaker (1978) uses the word 'knowledge' it is clear here and more explicitly in later work that what he has in mind is *belief* rather than knowledge. In Stalnaker (2002), he argues that we should work with the notion of *acceptance* in the notion of common ground. I will come to speak about the different notions in section 3. Importantly, whenever I use 'common belief' in this paper it refers to beliefs that are not just shared in the sense that they happen to be believed by all discourse participants, but to contents that all participants believe *and of which they all believe that all participants believe them etc.*, in line with the philosophical tradition going back to Lewis (1969) (to whom Stalnaker 1978 also refers). In my discussion of Farkas and Bruce's paper, where this distinction is not explicitly made, I will sometimes speak of 'shared' or 'joint' rather than 'common' to ensure that I restrict 'common' in this paper to cases where this specific sense is meant.

the essential effect of an assertion 'provided that there are no objections from the other participants in the conversation' is that the proposition asserted (seen as a set of worlds, the worlds where this proposition is true) gets added to the common ground, and hence that the context set, the intersection of the set of propositions that form the common ground, becomes smaller: more worlds are ruled out in the sense that they are no longer seen as options. The actual world is commonly believed not to be one of these.

Unlike Stalnaker (1978) but following Clark and Schaefer (1989) and Clark (1996) among others, Farkas and Bruce emphasize the *proposal* nature of assertion: the proposition asserted does not get added to the common ground automatically, but a speaker can only *propose* to add it to the common ground. To capture this idea, the context structure they work with contains not only a set of propositions representing the common ground, but also a so-called Table. Technically, this is a stack of pairs of linguistic items with their denotations. The idea is that a speaker can put a piece of information on the Table and that the addressee can react to it. The Table records what is currently at issue in the conversation. As we will see, it represents the update proposals currently being negotiated for inclusion in the common ground.

In addition, they import an idea from Gunlogson (2001, 2003, 2008), going back to Hamblin (1971) and others, that the main effect of an assertion is to add its propositional content to the list of the speaker's commitments:[2] with assertions speakers take on commitments to the truth of the proposition expressed. For Farkas and Bruce' context structure this means that, in addition to the common ground and the Table, there is also contained a set of propositions for each discourse participant, made up of those propositions that the participant has committed to during the conversation up to the relevant time and that have not (yet) become joint commitments. Separating individual participants' commitments from the common ground is essential in accounting for disagreements in discourses: not all the contents discussed end up in the common ground as participants may agree to disagree.

Note that on Farkas and Bruce's account, the set of a participant's commitments is restricted to propositions that have not (yet) become joint commitments: once a proposition is agreed upon by all discourse participants, the proposition is removed from the individual set and added to the common ground.[3] This is different from Gunlogson's account where the objects of individual commitments continue to be registered on the individual lists and where the common ground is an ancillary notion (which I will discuss in section 3).

Finally, the context structure contains the *projected set*. This stands for the privileged future common grounds at the relevant time in the discourse and captures the observation that confirmation (and hence update of the common ground with the asserted content) is the default reaction to assertions while there is no such default move for (neutral) polar questions. As Farkas and

[2]In Gunlogson's words, this is the main effect of *the utterance of a falling declarative*, since she wouldn't call all these uses 'assertions' (Gunlogson, 2001, 10-11).

[3]This step may raise questions. It will be scrutinized in the next sections. In the current section I follow Farkas and Bruce's account closely.

Bruce note, for the linguistic cases that they discuss a representation of the projected set is redundant since the contents of the projected set can always be calculated from the current common ground and the items on the Table. I will exclude it in what follows.

Taken together, for Farkas and Bruce a context structure for a dyadic conversation between $A$ and $B$ is a tuple:

(1) $\langle cg, DC_A, DC_B, S\rangle$
where
$cg$ stands for the common ground,
$DC_A$ for the discourse commitments of participant $A$
$DC_B$ for the discourse commitments of participant $B$, and
$S$ for the Table.

To illustrate this with an example, assume $A$ says:

(2) My shoes are behind the sofa.

The effect of this assertion by participant $A$ on the context is that the proposition expressed *that A's shoes are behind the sofa* is added to $DC_A$ and that a pair of the linguistic structure representing this sentence and its denotation is entered on the top of $S$. $B$ can now go on to accept this proposition or reject it. If he accepts it the proposition enters the common ground and is removed from $DC_A$.

The common ground $cg$ is now described as 'a set of propositions [...] whose elements are those propositions that have been confirmed by all participants in the conversation as well as a set of background propositions' (Farkas and Bruce, 2010, section 2). The total set of discourse commitments for a single discourse participant is taken by Farkas and Bruce as the union of the set representing their individual commitments and the common ground (*ibidem*). Both points will be examined critically in the next section.

# 3 What goes wrong

In this section I will argue that in combining the Stalnakerian notion of common ground as the set of common beliefs with the idea of assertion as undertaking commitments as found in Hamblin and Gunlogson, something undesirable has happened in Farkas and Bruce's account. In short, believing something is crucially different from being committed to the same thing. The problem is not that the two kinds of entities should not be combined within one communication model. The problem is that if this is done, they should be distinguished and kept apart more strictly.

Our commitments are public, social and normative.[4] The idea that they are

[4] Michael (2022) distinguishes several senses of the word 'commitment'. I will use the term for what he calls the strict sense of the notion, which he argues is the standard in philosophy. It is the notion that the authors in this section (Peirce 1931–1958, Hamblin 1971, Brandom

central for assertion is defended by Hamblin (1971), Brandom (1983), Geurts (2019), and Krifka (2015, 2022, 2023, 2024), among others.[5] It goes back to ideas already found in Peirce's work dating from around 1905 and published posthumously (see Tuzet 2006), who claims that by asserting something one takes responsibility for the truth of the proposition asserted. Commitments are normative in that they are obligations to others to act in certain ways.[6] When I assert (2), that commits me to the truth of the proposition expressed: I give a guarantee for the truth, which means that the addressees can expect me to act in accordance with it, e.g. walk to the sofa when I say 'wait, let me get my shoes', or not continue by making a contradictory claim, like 'they are in the shed'. The commitment undertaken constrains my future actions, but it doesn't constrain my actual behaviour directly (I could in principle walk to the kitchen, or utter a contradicting claim). It constrains how I *should* behave given what I've said. If I'm committed to something it means that I am obliged to this, i.e. other people are entitled to count on me doing this (Geurts 2019). As Brandom (1983) sees it, one way in which this constrains my future actions is that I am liable for defending the claim, i.e. for justifying the truth when someone asks me what my evidence is (Brandom's justificatory responsibility).[7] This is also why I cannot say:

(3) His driving has gotten a lot better. I don't see much evidence of that.
(based on Gunlogson 2001)

When I don't act in accordance, it's a norm violation which risks social penalties. I could for example be excluded from cooperation: other people might refuse to interact with me in the future.

All of this doesn't hold for beliefs. Beliefs are primarily private and my beliefs don't entitle other people to count on me doing things, or lead to norm violations if I don't act in accordance. Hamblin also makes this distinction:

---

1983, MacFarlane 2005, Geurts 2019, and Krifka 2015, 2022, 2023, 2024) refer to when they talk about commitments. As Michael notes, the concept of commitment in our daily language use is more heterogeneous and not in all its senses necessarily normative or social.

[5]The idea that commitments play a role in assertions is more widespread. Austin, for example, writes '. . . saying or stating that the cat is on the mat commits me to saying or stating 'The mat is underneath the cat' just as much as the performative 'I define X as Y' (in the *fiat* sense say) commits me to using those terms in special ways in future discourse' (Austin 1962, 135–136). Also in Searle's view on assertion, although beliefs and intentions are very prominent here as well, commitments play an important role, e.g. 'the point or purpose of the members of the representative class is to commit the speaker (in varying degrees) to something's being the case, to the truth of the expressed proposition' (Searle 1975, 354). I focus in this paper on the authors mentioned in the main text for two reasons: (i) that's the tradition that Farkas and Bruce take as the starting point for this part of their ideas, and (ii) these authors have a more consistent normative view on assertions.

[6]Geurts (2019) treats commitments as three-place relations between two individuals, $a$ and $b$, and a propositional content, $p$: $a$ is committed to $b$ to act on $p$. In this paper, I will often skip over the addressee argument for simplicity.

[7]MacFarlane (2005) argues that Brandom's justificatory responsibility is too strong as an explication of what it entails for a discourse participant to be committed to the truth of a proposition.

> 'We say normally that a speaker is *committed* to a statement when he makes it himself, or agrees to it as made by someone else, or if he makes or agrees to other statements from which it clearly follows. A commitment is not necessarily a belief, but a function purely of the locution-events that have transpired. Commitments may later be *retracted*.' (Hamblin 1971, 136)

Now that it is clear how they differ, let's see what happens in Farkas and Bruce's account. It's clear that to model the normative aspects of communication (we have to act in accordance with our words, unless we explicitly retract them), we need sets for the individual participants' discourse commitments. In Farkas and Bruce's model the propositions that are the objects of these commitments are removed from the individual lists as soon as they enter the common ground. To repeat from the previous section, the total set of a participant's commitments, they say, is the union of the set representing the (non-shared) individual commitments and the common ground 'whose elements are those propositions that have been confirmed by all participants in the conversation as well as a set of background propositions.'

What happens here? What happens is that the union we end up with is a very heterogeneous set. True, all the elements in this set are propositions (sets of possible worlds in this tradition), but some are commonly believed and others are jointly committed to, and still others are only individually committed to. In this set they are all lumped together. To model the normative aspects of communication we need a representation of the set of propositions that a participant has committed to, but the set at hand cannot be interpreted as such since the 'background propositions' in it have never been on the table. The common ground will contain propositions of the kind that a bomb has just exploded or, to give one of Stalnaker's own examples (to be further discussed below), that there is a goat in the room, propositions that all the discourse participants believe (and believe that the others believe and so on, given that there is a basis for this belief, e.g. a shared auditory or visual experience, in line with Lewis 1969), but that the speaker is not committed to (and presumably even no one in the group is; the propositions have not been on the table for negotiation). So this set does not stand for the commitments that a participant has undertaken, a set that we need in order to model the normative aspects of communication. And we don't have a set available in Farkas and Bruce' model that does stand for this.

Note that neither can we interpret the elements of this set as the propositions that are believed by the discourse participant. Participants may take on commitments to the truth of propositions that they don't believe are true. I can say *No, I didn't take a cookie* to my daughter when she runs to the kitchen to see what the crispy sound she hears is. I don't believe the proposition is true, but I do take on a commitment to its truth.[8]

[8] See MacFarlane (2011) for a discussion of why lies are also problematic for some accounts of assertion as the expression of belief.

So the set at hand can neither be taken to represent the commitments, nor the beliefs of the discourse participant. And given the inherently different natures of beliefs and commitments, there doesn't seem to be an overarching notion that it does represent. The set as a whole doesn't seem to stand for anything meaningful for our actions, including our communicative acts. We do need to represent commitments (for the normative aspects of communication), and we do need to represent something like common beliefs (for Stalnaker's purposes, to be worked out below), but the two need to be kept distinct.

Let me discuss a few ways to try to save this account. Would it help to say that we should interpret Stalnaker's common ground as representing commitments rather than beliefs, so that when we take the union of this set with the set of individual commitments we do have a homogeneous and meaningful set? No, it wouldn't: Stalnaker had a clear idea of what he needed the notion of a common ground for. He needs it to explain our linguistic behavior and more in particular the fact that what the speaker takes to be common ground influences the choice of their utterances. He uses the example of a goat entering the room, already referred to above, to illustrate this:

> If a goat walked into the room, it would normally be presupposed, from that point, that there was a goat in the room. And the fact that this was presupposed might be exploited in the conversation, as when someone asked, *How did that thing get in here?* assuming that others will know what he is talking about.
>
> (Stalnaker, 1978, 323)

What is important here is that *before* the speaker had uttered their sentence 'How did that thing get in here', it was already common belief that there was a goat in the room, and this is what the speaker based the form of their utterance on, which is what Stalnaker wants to explain. But although all participants believed that there was a goat in the room, at that moment no one was *committed* to it: No one could be asked to provide justification for a claim (since no claim was made), there would be no norm violation and no one could be socially sanctioned if it turned out that in fact there was no goat in the room. In other words, to let the notion of common ground do what Stalnaker wanted it to do, we need to include in the common ground propositions that participants are not committed to, but only commonly believe or assume. Put differently, if we only want to include true commitments in the common ground, we could of course use the word 'common ground' for exactly that (and deviate from Stalnaker), but in order to explain our speech acts in the way Stalnaker and as we will see Clark want to do, we would still need the concept of a common ground (but then under a different name) as a set of common beliefs.

Could maybe the explication help that Stalnaker makes in his 2002 follow-up article? Here, Stalnaker proposes to work with *acceptance* in the definition of common ground. The definition now becomes:

(4) it is common ground that $\phi$ in a group if all members *accept* (for the purpose of the conversation) that $\phi$, and all *believe*

that all accept that $\phi$, and all *believe* that all *believe* that all accept that $\phi$, etc.' (Stalnaker 2002, 716)

To accept a proposition is 'to treat it as true for some reason' (Stalnaker 2002, 716). Speaker presupposition is now the speaker's *beliefs* about the common ground: a speaker presupposes something if they believe that something is common ground, i.e. if they believe that something is commonly accepted (treated as true), that it is believed to be commonly accepted etc.

This move won't help, and the reason is that not just belief but also acceptance is not the same thing as (having undertaken) a commitment. The example of the goat in the room can still be used here: if a goat walked into the room, and it was clear that everyone sees this, it would still (i.e. also under the new notion of common ground) normally be presupposed by the speaker from that point on that there was a goat in the room, i.e. the speaker would still take it as common ground, now under the definition in (4), that there is a goat in the room and formulate their utterance based on this. But still, no one is committed to this, which shows that we shouldn't work with commitments for Stalnaker's purposes.[9]

And for the same reason the opposite strategy wouldn't work either: we cannot reinterpret the assertion-as-commitment-undertaking tradition in terms of belief or acceptance. The normative aspect of commitments forms the core of the view and we would lose it with this move.

So it looks like there is no way out. We can only combine within one model the Stalnakerian notion of common ground as the set of common beliefs with the idea of assertion as undertaking commitments if we keep the set of common beliefs and that of commitments apart. The reason is that we need them to model different aspects of our communication.

Note that it's not the case that the notion of commitment as I use it here is simply a different notion from that of Farkas and Bruce (2010), which would make it just a terminological issue. Via Gunlogson (2001, 2003, 2008), their notion does go back to the same ideas, namely that in Hamblin (1971), where commitment is this normative notion.

In fact, the mix-up that we see in Farkas and Bruce is already present in Gunlogson (2001), who already combines ideas from Stalnaker and Hamblin. Gunlogson defines commitments as public beliefs and uses the terms interchangeably. (5) gives her definition of a public belief/commitment:

(5) a proposition $p$ is a public belief [commitment] of $A$ among discourse participants if the proposition that A believes $p$ is a mutual belief of them (Gunlogson 2001, 42)[10]

[9] Here too, we could of course use the word 'commitment' in a weaker sense as referring to what we commonly *treat as true*. But then we would need a different term (like 'vouching for') for the stronger notion used in the (normative) assertion-as-commitment-undertaking tradition exemplified by e.g. Peirce, Brandom, and Geurts. The point remains that we need to distinguish two different notions.

[10] Mutual belief is what is common ground on Gunlogson's use of the term 'common ground'.

But the fact that all participants believe that $A$ believes $p$ does not yet make $A$ committed to $p$, even if there is a shared basis for this. Again, the example with the goat shows this. Insinuations serve to illustrate the same point. To use Camp's example, going back to Pinker et al. (2008) and Lee and Pinker (2010), a driver stopped for speeding might utter (6) to the police officer:

(6) I'm in a bit of a hurry. Is there any way we can settle this right now? (Camp 2018)

It may well be obvious to both the driver and the police officer that the driver is proposing a bribe, and that they know this of each other. In this case, the proposition *that the driver believes that she is proposing a bribe* is a mutual belief. According to (5), the proposition *that the driver is proposing a bribe* is now a public belief of the driver and hence, given the identification of public beliefs and commitments, a commitment of the driver. In actual fact, however, the driver is *not* committed to the proposition that she is proposing a bribe. The very reason why people formulate their messages in implicit ways as in (6) is that they want to avoid taking up such a commitment, i.e. avoid taking up a responsibility and avoid penalties. Although the driver hopes that it is a common belief between them that she is proposing a bribe (otherwise the action won't succeed), she does not want to be committed to it. This is exactly what insinuations do: as Camp (2018) argues, they allow speakers to get content across while preserving deniability over those contents. As she puts it, this deniability 'trades on the gap between what is in fact obvious between speaker and hearer and what both parties are prepared to acknowledge as obvious.' Hence public beliefs (as defined above) are not commitments.

The source of defining commitments in terms of public beliefs seems to be that Gunlogson wants to start from Stalnaker's work. After having defined the commitments of the discourse participants in terms of public beliefs as above, she writes that this is just 'a more articulated version of the CG [i.e. Stalnaker's common ground], without making any essential changes to the conception.' The problem here is that the use she proposes (viz. to model the discourse commitments of participants) *should* involve essential changes.

We have to conclude that we simply cannot let the common ground do double duty. If we think that both Stalnaker's project and that of Peirce, Hamblin and others capture important aspects of communication, (at least) two sets need to be distinguished. Although the *objects* of both can be treated as propositions (and these, if one wants, on their turn, as sets of possible worlds), the beliefs and commitments themselves represent fundamentally different entities, used for different aspects of language use. In the next section I will work this out.

# 4 What is needed

In the previous section we've seen that we need both the notion of common belief and that of commitments to understand the choices for and the effects of our speech acts. We need the notion of common belief to understand that we usually

formulate our utterances based on what we assume is common belief between us and our interlocutors. We've seen this in the work of Stalnaker, but it also gets a prominent place in that of Clark (e.g. 1996) who proposes that we should see language use primarily as a form of joint, i.e. closely coordinated, action, where common ground (as a set of common beliefs) is a condition *sine qua non* for coordination. On the other hand, we need commitments to capture the idea that our assertions, unlike for example our questions, commit us to their contents. For example, after an assertion, it would be a norm violation to continue with a contradictory statement. It is clear that we need the set of common beliefs and that of commitments to model different aspects of communication, so we cannot lump the two together.

The origin of the mix-up seems to be that when commitments are used in discourse-semantic analyses, they are reduced to the *objects* of these commitments, i.e. to the propositions that the participants commit to. The normative nature of commitments as such doesn't get much attention, as a result of which the difference between commitments and (common, mutual, or public) beliefs doesn't seem relevant anymore. One may be tempted to defend this as a division of labor: For linguistics only the objects (propositions) are relevant, and the distinction between beliefs and commitments is left for the philosopher. But the considerations above provide us with good *linguistic* reasons to distinguish the two and include both in our context structure. In this section I will explore more in depth what is needed to be able to do justice to the bundles of ideas that form the background of Farkas and Bruce' model. This can be seen as the question 'what should a context structure look like to be able to model the felicity and effects of our speech acts', but with a particular focus on these strands of thought.

Let me make one thing clear from the start to avoid confusion. There is one way in which commitments can and should enter into the common ground (understood as the set of common beliefs). Imagine that Tim asserts (7):

(7) The earth is flat.

I've argued that the object of Tim's commitment (the set of worlds representing the proposition that the earth is flat) should not necessarily be added to the common ground (as the set of common beliefs), not even after acceptance by the addressee (since we may commit ourselves to things we don't believe). But what should be added to the common ground is the proposition expressing the commitment itself: *that Tim has undertaken a commitment to the truth of the proposition that the earth is flat* (and depending on how honest the participants think Tim is, they may draw further conclusions about what he believes). This is indeed an update of the common ground, since this is what the participants will commonly *believe* based on Tim's speech act, but note that this is a very different update from the one in Farkas and Bruce' or Gunlogson's work (who would update the common ground with the proposition *that the earth is flat*). In Austin's terminology, the update of the form '$A$ has taken on a commitment to proposition $p$' would be the common ground update with the *illocutionary*

*act*, in the same way as the *locutionary act* update could be represented in the common ground by adding a proposition of the form *Tim has uttered the sentence 'the earth is flat'*. The latter is recognized in Stalnaker (1978, 323) and Farkas and Bruce (2010, section 3.1), the former is not.

Krifka (2024) does model this illocutionary update of the common ground. And this is conceptually correct: that Tim has undertaken this commitment is a common belief after his utterance and thus gets added to the set of common beliefs, i.e. the common ground. But we cannot leave it at this, as I will show now.

The effect of our speech acts is not *just* an effect on the common ground. That wouldn't do justice to Austin's (1962; 1979) insight that our speech acts (assertions included) are real acts that change the world. Just as we live in a different world after some country has declared war on an other country, after Tim's assertion he has become committed to the proposition asserted, not just in the sense that participants have learned more *about* the world (where this increase in knowledge is represented by an update of the common ground with the proposition that Tim has committed to the earth being flat, as described above), but also because they now live in a different world: a world in which Tim is committed to the earth being flat. Krifka's (2024) (very elegant and well-thought-through) performative update, as he calls it, is still the *informative* (i.e. common ground) update of the performative aspects of our speech acts.[11] It is important to see that this is not yet a modelling of the performative effects of our speech acts themselves, which make that the world itself has changed.

What does this 'change of the world' mean and where should we locate it in a pragmatic/semantic model? Szabolcsi (1982) points out where the real performative effect is to be located in model-theoretic semantics: it concerns a change in the model itself. She works this out in a Montagovian framework. In a two-dimensional Kaplanian framework (Kaplan, 1989b) where utterances are interpreted with respect to a context and an index (with the context an agent–world–time triple,[12] and the index a world–time pair), we would say that it is the *context* that changes with the performance of the speech act. This context has a crucial role not just in the resolution of indexicals, but also in the key notion of *truth in the context* where we take the world and time of the context as the world and time of evaluation (Kaplan, 1989b, 547). The Kaplanian context is the right location for the 'change of the world' since for Kaplan the contexts 'are metaphysical not cognitive. They reach well beyond the cognitive range of the agent' (Kaplan 1989a, 597).

I see a number of options to work out this idea (there may be more). In a conservative version we simply say that time moves forward and at different times different states of affairs hold. We then 'change the world' only in the sense that we move to a time where different things are true. This option feels somewhat unsatisfying in the sense that we can distinguish the two situations (before the speech act and after), but it feels like we cannot really deal with

[11] See also Krifka (2015, 2022).

[12] Kaplan (1989b, 543) himself also uses a position parameter, but this is usually left out.

the indeterminism or agency involved in the change. The reason for this is that possible worlds (including the actual one) are usually conceived of as complete (i.e. settled for past, present *and* future). In a Kaplanian context, the world of the actual context is the actual world, which includes the actual future. This also means that if we really changed the world parameter itself (rather than just moving forward in time), we would move from one complete world (with the future specified already) to a different one, which is rather unintuitive. A more intuitive option would be to say that we should think of the Kaplanian world of the context as settled only for the past and the present. This is how I think about this informally. To work this out formally one may need to resort to branching structures. Defenders of such structures have argued that possible worlds (since they are complete) are unsuited to model real possibilities (rather than e.g. just epistemic possibilities) and agency (influencing which future becomes actual) (see e.g. Belnap et al. 2022, 8). For that reason, they work with e.g. branching histories (with a common past, but branching from the present) instead. If one finds these arguments convincing, one might want to say that the change we are interested in here is that we enter a certain branch within this structure, rather than just a movement forward in time in the actual world (on a conservative use of Kaplan's model), or a real change of the world parameter itself (in this framework there is no multiplicity of worlds with one world as the actual world, but there is only Our World, a very big one, including all its histories). Leaving the metaphysical issues aside, in this paper I will continue to speak in terms of a change of the Kaplanian *context*, *world* or sometimes *situation*, thinking about the worlds of the Kaplanian contexts informally as with an open future.

Like Szabolski, I don't try to model the specific performative updates for the different speech acts. Let me just say that, based on what we've seen above, for assertions it would need to be a change to a world that is the same except that the speaker has committed to the asserted content (and maybe the minimal changes required for this change).[13] If we wish, we could make this more explicit in the form of a list of commitments of each discourse participant, but it is important to realize that this is not the representation of the common ground but of the actual world/situation, since what we are discussing now is a change essentially different from the update of the common ground.

So we've seen that we need to distinguish:

(i) *the real world, where people are committed to certain things*; the commitments of the individual discourse participants could be listed (in the form '$A$ has committed to proposition $p$, to $q$ and to $r$', '$B$ has committed to proposition $p$, to $s$ and to $t$') but they are crucially to be seen as aspects of the world $w_c$ in a Kaplanian picture of context;[14]

[13]See Krifka (2024, section 3) for an extensive discussion of some issues involved here, most importantly that when time passes during the speech act there will always be other events that happen within this time lapse.

[14]Here we can also include other kinds of commitments such as commitments *de lingua* (Harris 2016, Hess 2018, Bary et al. 2022): commitments to the appropriateness of a term. By choosing a piece of vocabulary, like *soda* (vs. *pop*) or *Middle East* (vs. e.g. *Arab World*) we take on a commitment that this is an appropriate term to refer to the entity at hand.

(ii) a *common ground* as the set of common beliefs, some of which with a content of the kind '$A$ has committed to $p$'.

It should be clear by now that the two are not the same thing and that both are needed. We will see that we need even more, if we want to do justice to the motivation of the projects that form the background of Farkas and Bruce's framework.

In addition to (i) and (ii), we need the sets representing *the objects* of commitments of the individual discourse participants. We have already seen above that they are not the same thing as (ii), the common ground as the set of common beliefs, and that the two cannot be lumped together. They are also not the same thing as (i) (the commitments as commitments in the world). Why do we need the sets representing *the objects* of commitments of the individual discourse participants in addition to what we have already? The reason is that otherwise we wouldn't be able to carry out Hamblin's project, which is one of the sources for Farkas and Bruce's framework. For that project we need to have access to the propositions that are the objects of the commitments undertaken. The prime motivation for him to work with (the objects of) commitments is that he wanted to define what *legal discourses* are. One such restriction for a discourse to be *legal* is that you are not allowed to contradict yourself. But if we only have the set of worlds representing a proposition of the form *that A has taken on a commitment to proposition p* (which occur in (ii)), then we do not have access to the set of worlds representing the proposition $p$ itself and hence we wouldn't be able to define what legal moves are.[15]

The fact that we really need to keep track of individual commitments can clearly be seen in Gunlogson's (2008) example in (8). She aims to model the difference between reactive *oh* and *yes*:

(8) a. [Amy:] The server's down.
 b. [Ben:] Oh.
 c. [Ben:] Yes.

With 'oh' Ben acknowledges receipt of new information, with 'yes' he affirms the stated content based on his own judgment. Gunlogson introduces the notion of a *dependent commitment* to describe the difference: while Amy is in both cases a source for the commitment, Ben is only a source in (8c). After uttering (8b) he has become only dependently committed. This difference remains relevant later in the conversation: Ben can say 'I don't see much evidence for that', but Amy cannot. But if the objects of commitments end up in the common ground as soon as they are shared, and then get removed from the individual lists, as in Farkas and Bruce' framework, we would not be able to make the difference between the two situations.

[15] We would want to say something like 'it is not allowed to end up with an empty set', but there is overlap between the set of worlds representing a proposition of the form *that A has taken on a commitment to proposition p* and the set of worlds representing a proposition of the form *that A has taken on a commitment to proposition not–p*, so the intersection wouldn't be the empty set and we couldn't exclude such discourses.

As a final ingredient for now, if we want to do justice to Farkas and Bruce's idea that discourse participants are in the position to negotiate the content of the last assertion, we also need a Table as representing what is at issue and what the addressee can react to. Here I follow Bary and Maier (2021) who divide the Table into a stack of proposals $P$ for the proposals currently being negotiated and a stack of questions under discussion $Q$. This division makes it simple to formulate the felicity of discourse moves, more in particular the different discourse restrictions that come with content that is grammatically or lexically marked as not-at-issue (such as appositives) vs. content that is not marked as such. The crucial difference is that information marked as not-at-issue doesn't need to address the question under discussion for the discourse to be felicitous.[16] This is a topic I won't discuss further here, but with the division into two stacks we have a context structure available where this can easily be done. For the details see Bary and Maier (2021).

All in all, we've seen that we need at least:

(i) the real world, where people are committed to certain things;

(ii) a common ground as the set of common beliefs, some of which of the kind '$A$ has committed to $p$';

(iii) individual sets of the objects of the commitments, one for each discourse participant;[17]

(iv) a stack of proposals $P$;

(v) a stack of questions under discussion $Q$.[18]

Crucially, we don't have a combined set, containing propositions that are the objects of either beliefs or commitments. And crucially, commitments are not removed (in (i), (ii) or (iii), in whatever form they are present there) when their objects have become common belief, pace Farkas and Bruce (2010).

The elements above are all elements of a *context structure*: a tuple representing contextual parameters that are relevant for the choices for our speech acts and the effects thereof. We could represent this context structure for two discourse participants $A$ and $B$ as:

(9) $\langle c, cg, dc_A, dc_B, P, Q\rangle$ with

[16] Note that this is a different notion of at-issueness than the purely pragmatic one in Simons et al. (2011) where the at-issue vs. not-at-issue distinction is derived from the global structure of the surrounding discourse.

[17] The link between (i) and (iii) is that if in a certain Kaplanian context the sentence 'Tim has committed to the earth being flat' is true (i), this means that the proposition that the earth is flat should be in the set of Tim's commitments at that time (iii).

[18] The items on Farkas and Bruce (2010)'s Table are syntactic objects paired with their denotations. The items on Bary and Maier's (2021) $P$ and $Q$ are formulas. It is clear that just the denotations would not be enough. We need to have syntactic and (in spoken discourse) also phonological aspects of an utterance represented to deal with cross-turn conversation. See e.g. Poesio and Traum (1997) and Ginzburg (2012) for examples and discussion.

- $c$ as the Kaplanian context (specifying the current speaker, world, and time of the utterance);
- $cg$ as the common ground (the set of common beliefs);
- $dc_A$, $dc_B$ as the sets of the objects of the discourse commitments of participants $A$ and $B$;
- $P$ as the stack of proposals;
- $Q$ as the stack of QUDs.

For the update of this context structure we need to compute the proposition expressed by a sentence in a context. Although we have the Kaplanian context available in the context structure, which could be used for the resolution of indexicals, the context structure wouldn't suffice for the full compositional calculation of the proposition, since for that we need a recursive truth definition of the kind provided by Kaplan. Hence, I assume (as a component separate from the context structure) a traditional interpretation model of the Kaplanian kind, with a set of contexts (with its elements agent–world–time triples), a set of indices (world–time pairs, for intensional expressions), a set of individuals, an interpretation function and assignment functions (for quantification), against which each utterance is interpreted. This is to take care of the semantic composition, not to model any change. Note that this is a simplification since for many linguistic phenomena, such as the resolution of anaphors, we need something more, e.g. access to a *conversational record*.[19] What matters for the current purposes is that the resulting interpretation is used to update the context structure, which is what this paper is concerned with. Note also that the Kaplanian context of utterance plays a role in both components: it plays a role in the semantic computation (the static part), but it is also updated as part of the context structure which is used to represent the effect of speech acts (the dynamic part).

How does this relate to the common ground update as we know it from Stalnaker or Farkas and Bruce? I've proposed that in the case of Tim uttering (7) the proposition expressing the commitment itself (*that Tim has undertaken a commitment to the truth of the proposition that the earth is flat*) should be added to the common ground. Now depending on how honest an addressee thinks Tim is (hereby also taking into account the social penalties that may function as an incentive for Tim to only assert things he believes are true), she may draw further conclusions about what Tim *believes*.[20] And then depending on how good a source she thinks he is for this topic, she may think that Tim's utterance is a good reason to believe that the earth is flat and start to believe this too.[21] If she then acknowledges this and Tim in his turn thinks she is sincere

[19]See e.g. the work on SDRT (e.g. Asher and Lascarides 2003) for a discussion and treatment of many of the complex issues involved here.

[20]Asher and Lascarides (2008) work out a logic of commitments and formulate rules according to which an agent's belief is defeasibly updated on discovering a discourse participant's commitments.

[21]See also Lauer (2013) for a discussion and formal treatment of how in certain contexts, viz. contexts where the addressee takes the speaker to be honest and well-informed with respect to the topic of his utterance, the update with the content of an utterance can be seen as a

(and was indeed sincere himself when he uttered (7)), the proposition that the earth is flat will end up in the common ground (as the set of common beliefs). Importantly however, this update – for Stalnaker (1978:323) the essential effect of an assertion – is not a *direct* effect of Tim's utterance. This is not only because the speaker can only *propose* an update, as Farkas and Bruce acknowledge and model, but also because the update of the common ground is mediated through the discourse participants' reasoning in several steps, and each of these steps may also fail.[22] This mediation is needed to guarantee the essential difference between commitments and beliefs. Our speech acts certainly inform the common ground, but only partly in a direct way (viz. for the locutionary and illocutionary updates).[23]

We now have a context structure that in principle allows us to:

- deal with the fact that we base our utterances on what we believe is commonly believed/accepted (Stalnaker, Clark);
- deal with the insight that the effect of assertions is that we take on commitments (Peirce, Hamblin, Gunlogson, Brandom, Geurts, Krifka), even if we don't believe the content;
- deal with the effect of our speech acts on the real world (Austin): our utterances change the world (and not just in the sense that they change the common ground);
- deal with disagreement in discourses (Gunlogson, Farkas and Bruce);
- capture the connection between initiating moves and responding moves (Farkas and Bruce);
- define legal discourses (Hamblin);[24]
- deal with insinuations (Camp): since public beliefs (Gunlogson's notion) or common beliefs (Lewis' notion) are not commitments, it is perfectly possible that something is obvious to everyone and that they also know this of each other, but that the speaker is still not committed to it;
- deal with the different discourse restrictions that come with content that is marked as not-at-issue vs. content that is not marked as such (e.g. Koev 2013, 2018, 2022, Bary and Maier 2021).

contextual entailment of the fact that the utterance was made.

[22]Thus, we could say that the difficulty that I identified in Farkas and Bruce (2010) is in fact already present in some form in Stalnaker's work.

[23]It seems that for Clark even the locutionary and illocutionary updates of the common ground require some action on the part of the hearer (Clark, 1996, chapter 8). Note further that the (mediated) update of the common ground with the proposition that the earth is flat can be seen as a perlocutionary aspect or effect of the utterance.

[24]See also Lauer's (2013) point that utterances of inconsistent declaratives require retraction.

I'll refer to this list as the *explananda list*.

The effect of a speech act can now be seen as a function from context structure to context structure. Crucially, $c$, the Kaplanian context as one of the elements in this structure, will also be updated.

Note that I don't formulate the specific changes that really capture the aspects of communication mentioned. That's not the aim of this paper. The context structure above is just a prerequisite to formulate such rules, and for the specific instantiations the papers mentioned are very good sources (which doesn't mean that it would be trivial to combine that all in one system of update rules). As I said before, my aim in this paper is to provide conceptual clarification.

Nor do I claim that this is an exhaustive list of the elements of the context structure relevant for modelling the choices for and the effects of our speech acts. My vantage point is formed by Farkas and Bruce (2010) and their sources.[25] Work in semantics and pragmatics has shown that there are many more relevant elements. Work in dynamic semantics (file change semantics, DRT) and SDRT has made plain, for example, that it matters whether something is introduced as a discourse entity or not and what the structure of the discourse is (e.g. Heim 1982, Kamp and Reyle 1993, Asher and Lascarides 2003). These aspects restrict the options for anaphoric uptake and the attachment of discourse relations. And we may need extensions in more directions (e.g. *to-do* lists, Portner 2007).[26] While Krifka (2024) suggests that elements of this kind are ultimately part of the common ground (but that he leaves them out to work with something that is deliberately simple: world-time indices), Camp (2018) proposes to distinguish the highly structured conversational record from the common ground of which much is not even articulated. Although I tend to go with Camp here (which means we would have a conversational record added to (9)), I won't decide between these two options in this paper, since the goal is to take away the confusion described in section 3. It is a very interesting question, however, if only because on the former, dynamic semantics is about common ground update (this is clearly how Krifka presents it) and on the latter it's not.

Also, as we've seen above where I described the relation between the different elements of the context structure, we cannot do without individual beliefs. Addressees reason about the sincerity and well-informedness of the speaker etc. Hence, if we want to deal with the role of the common ground from the social and psychological perspective described above, we obviously need to take into account the participants' individual beliefs, including their view on the common ground.[27]

[25] And even for that we may want to work with finer-grained distinctions, e.g. the distinction between contingent and real commitments (as in Gunlogson 2008) to deal with rising declaratives, which has also been captured in the form of an evidential base for each commitment in Northrup (2014). The context structure in (9) leaves room for that.

[26] See also García-Carpintero (2015) for arguments that the context, by him understood in Stalnakerian/Lewisian ways, cannot be just a set of commonly believed propositions.

[27] I haven't worked this out since it would stray from the main point of the paper and other papers have already dealt with this in a more elaborate way than I can do here. See Ginzburg (2012, 63–66) for a discussion of the different interpretations of the information states of

There is one remaining issue that I need to discuss here. For most of the elements on the explananda list it holds that they are objective in nature and that their relation to the relevant element of the context structure is (in theory) straightforward. If I make an assertion, a commitment will be added to my list of commitments and the common ground will be updated with the information that I've taken on this commitment. If I put some content on the Table it has to answer the question under discussion or else my move will be infelicitous. If I first say $p$ and then continue with *not* $p$ the discourse will be 'illegal'. There is little to no wiggle room here. I cannot as a speaker *act as if* these elements of the context structure are different to get a different result. This is different in the case of the common ground. A speaker can successfully utter (10a) in a context where it is not already part of the common ground that she has a daughter, and (10b) in a context where it is not already part of the common ground that she has a fiancé, a phenomenon called 'informative presuppositions'.

(10) a. I am sorry that I am late. I had to take my daughter to the doctor.
b. O Dad, I forgot to tell you that my fiancé and I are moving to Seattle next week. (both from von Fintel 2010)

So viewed in this way, there is no strict relation between common ground and the felicity of an utterance (see also Soames 1982). It is also not necessary, for (10a) and (b) to be felicitous, that the speaker assumes (falsely) that it is already part of the common ground that she has a daughter or financé. So if speaker presuppositions are viewed as *beliefs* about the common ground, there is also no strict relation between speaker presupposition and the felicity of an utterance. For some people this was a reason to give up the common ground view on pragmatic presuppositions.

Stalnaker himself has defended his position against this point of criticism by arguing that the relevant point in time to consider the common ground is not before the utterance occurs but a moment between occurrence and acceptance or rejection:

> 'The prior context that is relevant to the interpretation of a speech act is the context as it is changed by the fact that the speech act was made, but prior to the acceptance or rejection of that speech act.' (Stalnaker 1998, 8)

It is the common ground at the moment Stalnaker describes here that is to be taken as the direct predictor of the felicity of an utterance. As Thomason (1990, 342–344) notes, an interesting feature of the social (vs. the physical) world is that a speaker can first *act as if* or *pretend that* the common ground (as the set of beliefs) is of a certain kind and thereby sometimes *make that* the common

conversational participants in terms of whether they present public or private information. See Lauer (2013) for a formal framework that allows us to talk about beliefs and how they develop over time and about the occurrence of speech events and how they influence agents' beliefs.

ground is of a certain kind.[28]

If we go with this interpretation, then the (speaker's view of the) common ground at this very moment in time could maybe be a direct predictor of the felicity of an utterance,[29] just like the other elements of the context structure are what is needed to directly deal with the other elements on the explananda list. Of course, there is the question whether the speaker will succeed in creating a certain (input) common ground with their participants, but this is only to some extent a linguistic issue.[30]

If one is not willing to follow these moves, the relation between the common ground and the felicity of a speech act will be less strict than what we've seen for the other explananda. Note that this is also what Stalnaker had in his (1978) version. As we've seen, here the common ground was the set of common beliefs, and a speaker presupposes something iff she *acts as if* it is part of the common ground. In this way there is some wiggle room to deal with the phenomenon of informative presuppositions.[31] Since this is not a paper on presuppositions as such (and I don't even aim to defend the basis of Stalnaker's ideas, but rather show what kind of context structure we need if we build on them), I leave it at this. My only aim here was to point out that $cg$, the common ground, may have a special position in the context structure, compared to the other elements, depending on one's specific take on speaker presuppositions.

In this section we've seen what is (at least) needed to do justice to the bundles of ideas that form the background of Farkas and Bruce' model. I've proposed a context structure in which the common beliefs of the discourse participants and their commitments undertaken are kept apart and in which we avoid the risk of seeing the performative effect of assertions just as an update of the common ground by adding the Kaplanian context in which the real world is represented.

# 5 Conclusion and future research

In this paper I've shown that we cannot let the common ground do double duty. If we believe that both Stalnaker's and Clark's projects and that of Peirce, Hamblin and others capture important aspects of communication, (at

[28]I have 'sometimes' here since I would still see this as an indirect, non-automatic process via individual reasoning of the discourse participants.

[29]Maybe even more easily when combined with the acceptance rather than belief interpretation of common ground discussed before.

[30]E.g., I can easily make people believe that I have a dog. It will be much harder to make people believe that I have a crocodile.

[31]If we treat the common ground as the set of common beliefs, then, apart from informative presuppositions, there is a second reason why we need to have such an indirect link: the case of lying. If we see lies as assertions, which I think is a natural thing to do (see also e.g. Maier 2018), the common ground as the set of common beliefs won't be updated in the case of a lie (since the speaker doesn't believe the content). With this notion of presupposition this is not problematic, however. Even though the common ground is not updated with the content, the fact that it is a lie has no effect on the presuppositions: for the continuation of the discourse the speaker can still *act as if* what was asserted has become part of the common ground and choose the same formulations as in the sincere case.

least) two sets need to be distinguished: the set of common beliefs (to capture the fact that we usually formulate our utterances based on what we assume is common belief between us and our interlocutors) and that of commitments (to capture the idea that our assertions commit us to their contents). That the step from commitment to belief is at most a defeasible inference is a point that has been noticed before,[32] but it did not preclude scholars from using models where commitments and common beliefs are not strictly distinguished.[33] The argumentation in this paper took Farkas and Bruce's (2010) framework as its starting point because it is so widely used, but we've seen that some of the confusion is already present in Gunlogson (2001) and even in some form in Stalnaker (1978). In the context structure proposed in this paper, this point is remedied and we are now capable of dealing with the fact that in actual life we are often committed to things we don't believe and we often commonly believe things to which we are not committed.

What is more, the proposed context structure allows us to do justice to the fact that with our speech acts we change the world. This is done by adding a Kaplanian context, a speaker–world–time triple, to the context structure. We can now separate the informative update of a speech act as an update of the common ground (which importantly also, and even primarily, includes an informative update of the performative aspects of the speech act) from the real performative change. It is important to realize that the two are not the same thing. By modelling the former, as Farkas and Bruce and subsequent work in inquisitive semantics (e.g. Roelofsen and Farkas 2015, Farkas and Roelofsen 2019) do to a certain extent, and Krifka 2024 does in a more extensive way (i.e. including the performative aspects), one does not yet model the latter. One might defend this approach by arguing that Farkas and Bruce restrict their attention to the *discourse internal* effects of speech acts, but there is a certain risk that the informative update of the common ground is seen as all there is to assertive speech acts. The idea that a speech act brings us from one context to an other is very prominent in the literature. The proposed context structure is suited to illustrate the multifaceted effects of speech acts.

There are a number of outstanding issues. One concerns the role of the addressee in the updates of the context structure. What can a speaker do on their own and for what an action on the side of the addressee is needed? If the addressee just nods in reaction to what he hears, probably depending on the kind of nod, he will often not be taken as having taken up a commitment in the same sense as the speaker. He may mainly be signalling understanding of the content (see Clark 1996 for the different levels of grounding), which leads to the common ground update with the proposition that the speaker has taken on a certain commitment and that the addressee has understood the content but nothing more. The addressee is then not seen as liable for defending the truth of the proposition asserted by the speaker. Ultimately we would like to be able to capture the different levels of grounding as effects on a contextual resource, so

[32] E.g. Gunlogson (2001, 45): 'assuming, as I do here, that the participants' statements can be taken as an index to their beliefs'.

[33] An exception here is Asher and Lascarides (2008).

that also such small, non-verbal actions can be dealt with. For this, the role of the addressee needs to be further investigated, not in the last place empirically. In a proof of method study that I conducted together with Harriet Yates, Peter de Swart and Bob van Tiel, we have shown that a methodology called fEMG (*facial electromyography*, measuring the activity of facial muscles) can be used to trace conversational commitments (Yates et al. 2024a,b). We plan to apply this method to the role of the addressee as well.

From there it would be good to go back to the at-issue vs. not-at-issue distinction. It has become more or less mainstream to say that whereas with at-issue information the speaker *proposes* an update of the common ground, with not-at-issue information they *impose* or *force* an update of the common ground (e.g. Murray 2014, Northrup 2014). Now that the common ground is not updated automatically, this may even extend to not-at-issue information, and we have to rethink the different effects of the two kinds of content. It is still well possible to formulate their coherence restrictions (both 'forward-looking' and 'backward-looking' ones, see Koev 2018), but ideally such restrictions can be explained from the different effects on the context. All this is left for future research.

## Acknowledgments

Thanks to Harriet Yates, Bob van Tiel and Huub Vromen for reading and commenting on a version of this paper, to Emar Maier for a useful discussion we had, and to the two reviewers for their valuable comments.

## References

Asher, N. and A. Lascarides (2003). *Logics of Conversation.* Cambridge University Press.

Asher, N. and A. Lascarides (2008). Commitments, beliefs and intentions in dialogue. In *Proceedings of the 12th Workshop on the Semantics and Pragmatics of Dialogue (Londial)*, pp. 35–42.

Austin, J. L. (1962). *How to Do Things with Words.* Harvard Univeristy Press.

Austin, J. L. (1979). Performative utterances. In J. Urmson and G. Warnock (Eds.), *Philosophical Papers*, pp. 233–252. Clarendon Press.

Bary, C., L. Hess, and B. van Tiel (2022). Expressives do shift, but not on their own. *Proceedings of the Amsterdam Colloquium 2022 23*, 31–37.

Bary, C. and E. Maier (2021). The landscape of speech reports. *Semantics and Pragmatics 14*(8), 1–48.

Belnap, N., T. Müller, and T. Placek (2022). *Branching Space-Times: Theory and Applications.* Oxford: Oxford University Press.

Brandom, R. B. (1983). Asserting. *Noûs 17*, 637–650.

Camp, E. (2018). Insinuation, common ground and the conversational record. In D. Fogal, D. W. Harris, and M. Moss (Eds.), *New Work on Speech Acts*, pp. 40–66. Oxford University Press.

Chernilovskaya, A. (2014). *Exclamativity in Discourse: Exploring the Exclamative Speech Act from a Discourse Perspective.* Doctoral dissertation Utrecht University.

Clark, H. H. (1996). *Using Language.* Cambridge: Cambridge University Press.

Clark, H. H. and E. F. Schaefer (1989). Contributing to discourse. *Cognitive Science 13*, 259–294.

Eckardt, R. (2016). Questions on the table. Unpublished manuscript. `https://www.researchgate.net/publication/304304651_Questions_on_the_Table`.

Ettinger, A. and S. A. Malamud (2015). Mandarin utterance-final particle *ba* in the conversational scoreboard. In *Proceedings of Sinn und Bedeutung 19*, pp. 232–251.

Faller, M. (2019). The discourse commitments of illocutionary reportatives. *Semantics and Pragmatics 12*.

Farkas, D. and K. Bruce (2010). On reacting to assertions and polar questions. *Journal of Semantics 27*(1), 81–118.

Farkas, D. F. and F. Roelofsen (2019). Polarity particles revisited. *Semantics and Pragmatics 12*, 1–25.

von Fintel, K. (2010). What is presupposition accommodation? Unpublished manuscript. `http://web.mit.edu/fintel/fintel-2000-accomm.pdf`.

García-Carpintero, M. (2015). Contexts as shared commitments. *Frontiers in Psychology 6*.

Geurts, B. (2019). Communication as commitment sharing: Speech acts, implicatures, common ground. *Theoretical Linguistics 45*(1-2), 1–30.

Ginzburg, J. (2012). *The Interactive Stance: Meaning for Conversation.* Oxford: Oxford University Press.

Gunlogson, C. (2001). *True to Form: Rising and Falling Declaratives as Questions in English.* Ph. D. thesis, UCSC.

Gunlogson, C. (2003). *True to Form: Rising and Falling Declaratives as Questions in English.* New York: Routledge.

Gunlogson, C. (2008). The question of commitment. *Belgian Journal of Linguistics 22*, 101–136.

Hamblin, C. L. (1971). Mathematical models of dialogue. *Theoria 37*, 130–155.

Harris, J. (2016). Commitments by proxy: Perspective management with transparent free relatives. GLOW Workshop on Perspectivization, Göttingen.

Heim, I. (1982). *The Semantics of Definite and Indefinite Noun Phrases.* Ph. D. thesis, University of Massachusetts, Amherst.

Hess, L. (2018). Perspectival expressives. *Journal of Pragmatics 129*, 13–33.

Hogeweg, L., S. Ramachers, and V. Wottrich (2011). *Doch*, *toch* and *wel* on the table. In R. Nouwen and M. Elenbaas (Eds.), *Linguistics in the Netherlands 2011*, pp. 50–60. Amsterdam: John Benjamins.

Kamp, H. and U. Reyle (1993). *From Discourse to Logic: an Introduction to Modeltheoretic Semantics in Natural Language, Formal Logic and Discourse Representation Theory*, Volume 1. Dordrecht: Kluwer.

Kaplan, D. (1989a). Afterthoughts. In J. Almog, J. Perry, and H. Wettstein (Eds.), *Themes from Kaplan*, pp. 564–614. Oxford: Oxford University Press.

Kaplan, D. (1989b). Demonstratives. In J. Almog, J. Perry, and H. Wettstein (Eds.), *Themes from Kaplan*, pp. 481–614. New York: Oxford University Press.

Koev, T. (2013). *Apposition and the Structure of Discourse.* Ph. D. thesis, Rutgers.

Koev, T. (2018). Notions of at-issueness. *Language and Linguistics Compass 12*(12), 1–16.

Koev, T. (2022). *Parenthetical meaning.* Oxford: Oxford University Press.

Krifka, M. (2015). Bias in Commitment Space Semantics: Declarative questions, negated questions, and question tags. *Semantics and Linguistic Theory 25*, 328–345.

Krifka, M. (2022). Adjacency pairs in common ground update: Assertions, questions, greetings, offers, commands. *Proceedings of the 26th Workshop on the Semantics and Pragmatics of Dialogue*, 94–105.

Krifka, M. (2023). Layers of assertive clauses: propositions, judgements, commitments, acts. In J. M. Hartmann and A. Wöllstein (Eds.), *Propositionale Argumente in Sprachvergleich/Propositional arguments in cross-linguistic research: Theorie und Empirie/theoretical and empirical issues*, pp. 116–183. Narr.

Krifka, M. (2024). Performative updates and the modeling of speech acts. *Synthese 203*, 1–31.

Lauer, S. (2013). *Towards a Dynamic Pragmatics.* PhD dissertation, Stanford.

Lee, J. and S. Pinker (2010). Rationales for indirect speech: The theory of the strategic speaker. *Psychological Review 117*, 785–807.

Lewis, D. K. (1969). *Convention: a philosophical study.* Cambridge MA: Harvard University Press.

MacFarlane, J. (2005). Making sense of relative truth. *Proceedings of the Aristotelian society 105*(3), 321–339.

MacFarlane, J. (2011). Epistemic modals are assessment-sensitive. In A. Egan and B. Weatherson (Eds.), *Epistemic modality*, Chapter 5, pp. 144–178. Oxford University Press.

Maier, E. (2018). Lying and fiction. In J. Meibauer (Ed.), *Oxford Handbook of Lying*, pp. 303–314. Oxford: Oxford University Press.

Michael, J. (2022). *The Philosophy and Psychology of Commitment.* New York: Routledge.

Murray, S. (2014). Varieties of update. *Semantics and Pragmatics 7*(2), 1–53.

Northrup, O. (2014). *Grounds for Commitment.* Ph. D. thesis, University of California, Santa Cruz.

Peirce, C. S. (1931–1958). *Collected Papers.* Harvard University Press.

Pinker, S., M. Nowak, and J. Lee (2008). The logic of indirect speech. *Proceedings of the National Academy of Sciences 105*, 833–838.

Poesio, M. and D. Traum (1997). Conversational actions and discourse situations. *Computational Intelligence 13*, 309–347.

Portner, P. (2007). Imperatives and modals. *Natural Language Semantics 15*(4), 351–383.

Roelofsen, F. and D. Farkas (2015). Polarity particle responses as a window onto the interpretation of questions and assertions. *Language 91*, 359–414.

Searle, J. R. (1975). A taxonomy of illocutionary acts. In K. Gunderson (Ed.), *Language, Mind and Knowledge*, pp. 344–369. University of Minnesota Press.

Simons, M., J. Tonhauser, D. Beaver, and C. Roberts (2011). What projects and why. In N. Li and D. Lutz (Eds.), *Semantics and Linguistic Theory (SALT) 20*, pp. 309–327. eLanguage.

Soames, S. (1982). How presuppositions are inherited: A solution to the projection problem. *Linguistic Inquiry quiry*, 482–545.

Stalnaker, R. (1978). Assertion. In P. Cole (Ed.), *Pragmatics*, pp. 315–332. New York: Academic Press.

Stalnaker, R. (1998). On the representation of context. *Journal of Logic, Language, and Information 7*(1), 3–19.

Stalnaker, R. (2002). Common Ground. *Linguistics and Philosophy 25*(5-6), 701–721.

Szabolcsi, A. (1982). Model theoretic semantics of performatives. In F. Kiefer (Ed.), *Hungarian General Linguistics.* Amsterdam: John Benjamins.

Thomason, R. H. (1990). Accommodation, meaning and implicature: interdisciplinary foundations for pragmatics. In J. M. Philip Cohen and M. Pollack (Eds.), *Intentions in Communication*, pp. 325–363. MIT Press.

Torregrossa, J. (2015). Putting contrast on the table. In *Proceedings of the 32nd West Coast Conference on Formal Linguistics*, pp. 201–207.

Tuzet, G. (2006). Responsible for truth? Peirce on judgment and assertion. *Cognitio 7*, 317–336.

Yates, H., C. Bary, P. de Swart, and B. van Tiel (2024a). fEMG as a window into conversational commitments. Presentation at Sinn und Bedeutung, Noto.

Yates, H., P. de Swart, B. van Tiel, and C. Bary (2024b). fEMG as a window into conversational commitments. Presentation at AMLaP, Edinburgh.