Philos Stud (2021) 178:1441–1461
https://doi.org/10.1007/s11098-020-01490-3

When Lingens meets Frege: communication without common ground

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Published online: 2 June 2020

Abstract In this paper, I argue that, contrary to Robert Stalnaker's highly influential account of linguistic communication, successful communication does not depend on a common ground between speaker and hearer. The problem for Stalnaker's account manifests itself in communicative situations that represent both Lingens cases, i.e., cases involving egocentric beliefs, and Frege cases, i.e., cases involving identity confusions. I describe two hypothetical cases that involve successful communication, but in which no common ground of the kind required by Stalnaker's account is available. I therefore propose an alternative account of communication that is based on epistemic two-dimensionalism. This account maintains that communication requires the transfer of a thought content from speaker to hearer. By holding that this shared content often constitutes common ground, it preserves much of the appeal of Stalnaker's account. However, my account allows for cases in which the shared thought content does not figure in common ground.

Keywords Common ground · Assertion · Egocentric belief · Communication · Two-dimensional semantics

1 Introduction

According to Robert Stalnaker's highly influential account of linguistic communication, communication proceeds by adding propositions to a common ground, i.e., a set of presuppositions known to be shared by speakers and hearers. But as I argue

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in this paper, Stalnaker's account fails to accommodate communication involving egocentric beliefs, i.e., beliefs about oneself and one's relation to the world. Since discussions of egocentric beliefs often feature the character of Rudolf Lingens, I call cases involving them 'Lingens cases'. The key problem for Stalnaker's account arises from situations that represent both Lingens cases and Frege cases, i.e., cases involving identity confusions. As I demonstrate, some situations of this type exemplify successful communication although there is no common ground of the kind required by Stalnaker's account. I therefore propose an alternative account of communication, which is based on epistemic two-dimensional semantics. This account doesn't require a common ground, and thus accommodates the Frege and Lingens cases that cause trouble for Stalnaker's account, but it captures the common ground in cases in which there is one.

The paper is structured as follows. I first introduce Stalnaker's general account of communication and his treatment of communication involving egocentric beliefs (Sect. 2). The latter part of Stalnaker's account has two key components. Firstly, the contents of egocentric beliefs are construed as singular propositions; secondly, egocentric belief states are characterized by means of centered worlds, yielding a multi-centered common ground. I argue that the latter kind of common ground isn't always available (Sect. 3). This objection isn't fatal, since uncentered belief contents could still serve to construct a common ground. However, in the next part of the paper, I argue that there are cases involving successful communication in which even this kind of common ground doesn't exist (Sects. 4, 5). The argument proceeds as follows. I first point out that in Frege cases, belief contents aren't adequately characterized by singular propositions. Stalnaker's solution to this problem is to invoke diagonal propositions, which assign the truth-value to an utterance token with respect to a world that this utterance would have if it occurred in the world in question. I then describe two possible scenarios in which the diagonal proposition cannot figure in a common ground, because it isn't believed by the relevant speaker. Since, as I argue, there are no other kinds of contents that could be used to derive a common ground, I conclude that communication need not rely on common ground, contrary to Stalnaker's account. Finally, I propose an alternative account of communication based on epistemic two-dimensional semantics (Sect. 6). This account postulates both centered and uncentered belief contents. The uncentered contents are transmitted from speaker to hearer in communication. The centered contents, on the other hand, aren't always shared as a result of successful communication, but when they are, they are suitable for constituting the common ground.

2 Communication and egocentric belief

2.1 Stalnaker on communication

Stalnaker (1978) construes *speaker's presuppositions* as the set of propositions that a speaker takes to be the *common ground* of a conversation, i.e., what she assumes

to be mutually accepted by everyone involved for the purposes of the conversation.[1] Common ground is represented by the *context set*, which is the set of possible worlds compatible with what is presupposed by the participants in a conversation. When all presuppositions of all participants in a conversation concur, i.e., when each of them takes the same propositions as common ground, then the context set is *nondefective*. On Stalnaker's account of linguistic communication, whenever a speaker makes an assertion that the hearer accepts, the content of the assertion is added to the common ground, which means that all possibilities not compatible with this content are eliminated from the context set. Stalnaker, along with many others, considers it to be a desideratum of a theory of communication that it requires successful communication to result in a content that is shared by speaker and hearer.[2] His account satisfies this desideratum: on this account, the required shared content consists in a proposition that is added to the common ground.[3]

Let me add a clarificatory remark concerning the scope of Stalnaker's account. There might be a liberal construal of the term 'communication' that subsumes any kind of information transfer. On this construal, even failed attempts to add something to the common ground would almost always involve communication, since in such cases the hearer usually acquires *some* information. Stalnaker's account isn't intended to capture such cases. For him, communication involves an intention on the side of the speaker to transfer information by means of an assertion, such that communication can only be successful if the speaker achieves this goal. My discussion will thus be restricted to such intentional linguistic communication. My main arguments against Stalnaker's account will proceed by identifying possible cases of successful intentional linguistic communication in which there is no shared content that has been added to the common ground.

2.2 Egocentric belief

The account of communication just sketched is undoubtedly elegant, and it has proven to be explanatorily fruitful. However, it assumes that the contents of mental states can be modeled as sets of possible worlds; yet the phenomenon of egocentric belief has convinced many that this assumption is false. At least since John Perry's (1977), this phenomenon is associated with the character of Rudolf Lingens.[4] In

[1] Acceptance of a proposition usually amounts to belief, but not necessarily so. However, since this distinction isn't relevant for my discussion, I will only speak of beliefs in what follows. (Stalnaker (1984, pp. 79–81; 2002) discusses the notion of acceptance.).

[2] The question of whether and how this principle can be preserved in the face of the communicability of egocentric beliefs, is discussed, e.g., by Ninan (2010), Moss (2012), Weber (2013), Kölbel (2014), and by several contributors in García-Carpintero and Torre (2016).

[3] Stalnaker (1978, p. 153) argues that necessarily, unless an assertion is rejected, its content is added to the common ground. None of the cases I discuss involve assertions that are rejected. But notice that Stalnaker's view entails that even cases in which an assertion is rejected involve a common ground and an asserted content that the speaker proposes to, and the hearer refuses to, add to this common ground. Very plausibly, this also means that both speaker and hearer at least entertain the asserted content.

[4] Lingens was introduced by Frege (1918–19, p. 65). But in Frege's example, it is Dr. Gustav Lauben who entertains and expresses an egocentric belief.

Perry's story, Lingens is an amnesiac who is lost in the Stanford Library. He reads a biography of himself and a detailed description of the Stanford Library. But Lingens doesn't know that he is the subject of that biography, and nor does he know that the library described is the one he is in. Thus, despite his comprehensive objective knowledge about himself and his location, Lingens still lacks the relevant egocentric knowledge, i.e., knowledge he would express by saying 'I am Rudolf Lingens' or 'This is the Stanford Library'. Cases like this suggest that egocentric belief cannot be reduced to objective belief, and that egocentric belief cannot be characterized by means of mere possible worlds (cf. Lewis 1979). For it seems that if Lingens has no prior egocentric information, then no amount of information he acquires about the world can teach him who he is or where he is.

A dramatized version of this case, inspired by scenarios discussed by David Lewis (1979, pp. 520–521; 1986, p. 28), should demonstrate this. Assume that the Stanford Library is so comprehensive and Lingens' thirst for knowledge so great that he learns everything about the character of the world. At this point, the set of worlds capturing his state of knowledge comprises only one world—the actual world. Assume further that Lingens now knows that there are two qualitatively identical libraries with two qualitatively identical amnesiacs trying to figure out who they are. Say that one of these libraries is in Stanford and the other one in Berkeley, and that one of the amnesiacs is Lingens and the other one Lauben. In this case, despite his complete knowledge about the world, Lingens is still not omniscient, since he doesn't know whether he is in Stanford or in Berkeley and whether he is Lauben or Lingens. It therefore appears that to account for the contents of egocentric belief, one needs something more fine-grained than possible worlds. A proposal made by Lewis (1979), that has since become very popular, is to model the contents of mental states by means of *centered worlds*. A centered world is a world with a marked individual at a time. The set of centered worlds representing Lingens' knowledge contains two such worlds: one in which he is Lingens and is located in Stanford, and one in which he is Lauben and is located in Berkeley. The centered worlds account of mental content is thus able to accommodate the fact that Lingens lacks egocentric knowledge.

2.3 Stalnaker on communicating egocentric beliefs

Stalnaker has argued that Lewis' centered contents aren't suitable for an account of communication (e.g., Stalnaker 1981). Stalnaker's criticism is unsurprising, given that the centered worlds account of mental content is incompatible with his own account of communication. To illustrate this, assume that after having regained his memory, Lingens says to Frege 'I am Lingens'. According to Stalnaker's account, the content of the belief thus expressed should now be added to the common ground. But the set of centered worlds corresponding to this belief contains only worlds in which the individual at the center is Lingens. Hence, its content shouldn't be added to the common ground, because this would mean that Frege comes to believe that he is Lingens. In other words, Lingens' egocentric belief, as it is construed by Lewis' account, shouldn't be shared by Frege as a result of Lingens' assertion. So how does Stalnaker himself try to accommodate communication involving egocentric beliefs?

The account he develops in recent writings (2008, pp. 52–74; 2014; 2016) has two components. Firstly, Stalnaker argues that the contents of egocentric beliefs can be characterized by means of uncentered possible worlds after all. Secondly, he develops a multi-centered common ground from *belief states*, which involve centered worlds. This new account complements the account of communication developed in Stalnaker (1978). Let me explain this in more detail.

Consider, once again, Lingens in the Stanford Library. There are two centered worlds compatible with what he knows after he has read every book in the library: one in which he is Lingens and is located in Stanford, and another in which he is Lauben and is located in Berkeley. According to Stalnaker's account, these two scenarios correspond to two different uncentered worlds—call them 'w_1' and 'w_2'. In w_1, Lingens is in Stanford and Lauben is in Berkeley, and in w_2, Lingens is in Berkeley and Lauben is in Stanford. Since the two subjects and the two libraries are qualitatively identical, this account requires the existence of haecceities, i.e., differences between qualitatively identical worlds. Accordingly, w_1 and w_2 differ only with respect to the locations of Lingens and Lauben. Since Lingens isn't in a position to rule out either of these scenarios, he doesn't know everything about the objective character of the world after all. Lingens' state of knowledge is therefore represented by w_1 and w_2. This kind of strategy is supposed to generalize: According to Stalnaker, there is no irreducibly egocentric knowledge, or lack of knowledge, since all ignorance of one's location in the world is ignorance of features of the world (e.g., 2008, p. 52).

Lewis (1979, pp. 522–524) anticipated this strategy and argued that the appeal to haecceities doesn't save the possible worlds account of mental content. His argument, applied to the case at hand, runs as follows. Let us grant that there are haecceities and that w_1 and w_2 are indeed distinct possible worlds, and assume that someone removes Lingens' ignorance about the world he lives in by telling him that he is in w_1. Now he knows that Lingens is in Stanford and Lauben in Berkeley. But he is still not omniscient, because he still doesn't know whether he is Lingens and is located in Stanford, or whether he is Lauben and located in Berkeley. In response to this argument, Stalnaker notes that such a subject would hardly have the impression that they had received any information (e.g., 2008, pp. 57–58). After all, Lingens himself could have stipulated that the person in the Stanford Library is to be called 'Lingens' and the other 'Lauben', and then concluded that he is in the world in which Lingens is in Stanford and Lauben is in Berkeley. Clearly, this wouldn't have provided him with new information. Since the case in which he is told that he is in w_1 seems no different from this, one cannot remove Lingens' ignorance by simply telling him that he is in w_1. A better way to inform Lingens which world he is in is to tell him that he is Lingens. Provided that he has singular beliefs about himself, this puts him in a position to know that he is in w_1. The assumption that there are singular belief contents involved is necessary, because otherwise Lingens wouldn't be able to distinguish w_1 from w_2—which are, after all, qualitatively identical—in thought.

Stalnaker thus argues that there is no ignorance about oneself and one's relation to the world that doesn't correspond to ignorance about the world one lives in. To do this, he needs to postulate both haecceities and singular thought contents. The

contents of egocentric beliefs can then be characterized as sets of uncentered possible worlds, preserving the following claim about belief contents:

> (Uncentered Content) The content of any belief is a set of uncentered possible worlds.

Uncentered Content is a central assumption in Stalnaker's account of egocentric belief. Among others, the thesis plays a crucial role in his treatment of the Sleeping Beauty puzzle (2008, pp. 59–64). Uncentered Content could also be of great significance for an account of the communication of egocentric beliefs, because the resulting contents are shared in the right kinds of cases. To see this, assume that after having learned who he is, Lingens tells Lauben 'I am Lingens'. Just as Lingens did before, Lauben will then rule out w_2, which implies that the only world still compatible with what they know is w_1. Stalnaker's reliance on haecceities raises some concerns. For example, the fact that it seems uninformative for Lingens to be told that he is in w_1 might be taken to suggest that "haecceitistic information" isn't really information. One could also wonder whether the only way to gain haecceitistic information is by gaining egocentric information. If this is so, this might raise further suspicions about the existence of genuinely haecceitistic information. But I am not going to pursue these issues, and I accept Stalnaker's appeal to haecceities in what follows.

Stalnaker in fact agrees with Lewis and others that when egocentric beliefs are involved, uncentered possible world contents don't fully capture a subject's perspective on the world. But against Lewis, Stalnaker argues that egocentric beliefs differ from other kinds of beliefs not in their contents, but in a subject's relation to these contents. To capture both the content of a belief and a subject's relation to it, Stalnaker introduces belief states. Formally, a belief state is a pair of a centered world (consisting of the believer and the world she is in) and a set of centered worlds (those worlds the believer takes herself to be in) (Stalnaker 2008, p. 54). Like Lewis, Stalnaker thus draws on centered worlds in his account of egocentric belief. But in Stalnaker's account these centered worlds are put to a different use—they serve to characterize a subject's relation to a content. To accommodate Uncentered Content, Stalnaker assumes that if the sets of centered worlds compatible with two or more belief states differ in centering, then these sets must also contain different uncentered possible worlds (2014, p. 115). Now recall that on Stalnaker's account, communication proceeds by eliminating possibilities from a context set. To accommodate the peculiarities of communication involving egocentric beliefs, he derives a type of common ground that involves centering from the account of egocentric belief just sketched. Suppose, for instance, that Lingens has beliefs about what Lauben believes about him. The worlds corresponding to such beliefs include one center that represents Lingens, as Lingens thinks Lauben takes him to be, and another center that represents Lauben, as Lingens thinks Lauben takes himself to be. Iterated egocentric beliefs are thus modeled by means of worlds with multiple centers. Since common ground is a kind of iterated belief state, it also involves multiply-centered worlds. Accordingly, the common ground of a group of n people is represented with worlds centered on n people, namely those people they presuppose themselves and each other to be

(Stalnaker 2014, pp. 119–123). As Stalnaker (2016) stresses, it is an important feature of his account that it links a particular believer to a set of centered worlds. Stalnaker's account of common ground involving multiple centers preserves this idea. As was just noted, the centers involved in such a common ground represent specific individuals, namely, all and only those people whose common ground is modeled. According to Stalnaker (2008, p. 74; 2014, pp. 120–122), only this makes it possible to capture how an individual locates herself in the belief worlds of others. For the participants in a conversation to locate themselves in each other's belief state—and thus, for the centers in a multi-centered common ground to represent specific individuals—it must be the case that they are able to identify each other. Assume, for instance, that Frege and Lingens share a multi-centered common ground. On Stalnaker's account, one of the centers represents Frege and the other represents Lingens. This requires that Frege has thoughts that are uniquely about Lingens, and that he can identify him as the person he is talking to—and vice versa. Stalnaker (2014, pp. 121–122) assumes that the participants in a conversation always have this ability. But as I show below, this assumption is false.

In summary, Stalnaker's account of the communication of egocentric beliefs construes the contents of such beliefs as sets of uncentered possible worlds, which are shared by speaker and hearer in cases of successful communication. This requires postulating haecceities and singular thought contents. At the same time, Stalnaker acknowledges that egocentric beliefs and their communication require special treatment. To accommodate this, he introduces belief states that involve centered worlds and that are supposed to capture a subject's relation to a content. Finally, Stalnaker derives a kind of common ground that involves multiply-centered worlds and that underlies the communication of egocentric beliefs. Let me stress, however, that—in line with Uncentered Content—the contents of both a subject's egocentric beliefs and of the common ground of a group of subjects exchanging egocentric information are still characterized by means of uncentered worlds. The latter implies that despite Stalnaker's appeal to centered worlds, he maintains that communication involves the elimination of uncentered possibilities from a shared set of beliefs.

3 The limits of multi-centering

We just saw that to accommodate the communication of egocentric beliefs, Stalnaker invokes multiply-centered possible worlds in modeling common ground. However, in many cases, this kind of common ground isn't available. Consider a mailing list in which a group of people exchange information. A participant in such a conversation needs to know very little about the people she is talking to, even if egocentric information is exchanged. She may not know how many people she is talking to, which implies that she isn't able to identify each of the participants in the conversation. Now, recall that Stalnaker wants to model the common ground in a conversation with n participants by means of worlds involving n centers, where each center represents someone who is actually involved in the conversation. This proposal cannot be sensibly applied to a case in which not everyone can identify every other participant, and where it isn't even presupposed by everyone involved

that the conversation has *n* participants. And as the case of the mailing list illustrates, it isn't a condition for successful communication that everyone involved in such a conversation is able to identify everyone else, or that everyone knows (and assumes that everyone else knows, etc.) precisely how many participants there are. Consequently, Stalnaker's assumption that the participants in a conversation are always able to identify each other is false, and his claim that the common ground in a conversation with *n* participants can always be captured by means of worlds with *n* centers, one for each actual participant, cannot be maintained.

As far as I can see, the best option for Stalnaker in light of this problem is to hold that centers are added to a common ground to the extent that the participants in a conversation have or acquire ways of identifying each other. Nevertheless, this will mean that often, no centered context set exists. In many other cases, the centered context set will only be linked to some of the participants in a conversation, namely those that have been identified by all others and are assumed to have been identified by all others. The egocentric beliefs of those to whom this doesn't apply cannot be represented in this kind of common ground.

As we saw, Stalnaker's proposal to model communication by means of multi-centered worlds cannot capture cases of successful communication in which not everyone involved can identify all the other participants in the conversation, or even knows how many people they are talking to. Since—given the ubiquity of telecommunication—such situations are very much the norm, the scope of Stalnaker's proposal is limited. This isn't a fatal problem for his general account. Given his claim that any difference in centering corresponds to a difference in possible worlds content, Stalnaker can always fall back on his original account, according to which common ground is modeled by means of uncentered worlds. Nevertheless, whenever this is required, his account cannot capture the idea that there is something special about the communication of egocentric beliefs.

In the following, I set aside issues concerning centering and argue that there are possible cases of successful communication without uncentered common ground between speaker and hearer. Stalnaker's endorsement of Uncentered Content, combined with his general account of communication, commit him to the existence of this kind of common ground. The following arguments thus challenge Stalnaker's account independently of whether his appeal to multi-centering can be upheld.[5]

4 When Lingens meets Frege

4.1 Frege cases and diagonalization

Suppose that Frege meets Shawn Carter and comes to believe that he is friendly. On Stalnaker's account, the content of this belief can be construed as a singular

[5] One might suggest rejecting Uncentered Content, to construe common ground by means of multi-centered worlds only. (Such an account is endorsed by Ninan (2010) and Torre (2010).) However, as I argue in (Kipper 2018), this strategy fails, because the required multi-centered contents aren't suitable for characterizing belief contents.

proposition, corresponding to the set of worlds in which Shawn Carter is friendly. Frege also knows Jay-Z, through the media and through his music. However, Frege doesn't realize that the friendly gentleman he just met is Jay-Z and believes that Jay-Z is unfriendly. If one construes the latter belief—the belief Frege would express by saying 'Jay-Z is unfriendly'—as a singular belief, one runs into a problem. This belief would have to be captured by the set of worlds in which Shawn Carter is unfriendly, and therefore, the conjunction of Frege's two beliefs would yield the empty set. A similar problem arises if someone tells Frege 'Shawn Carter is Jay-Z'. This assertion expresses a necessary proposition. On the possible worlds account of propositions and common ground, it is therefore uninformative, since it cannot eliminate any possibilities from the common ground. But it seems clear that Frege can consistently believe that Shawn Carter is friendly while Jay-Z isn't, and likewise, when he is told that Shawn Carter is Jay-Z, this seems to provide him with information.

The case just described is a Frege case, and Stalnaker's account does provide the resources to deal with the problems they raise. Stalnaker's solution relies on the fact that an utterance such as 'Shawn Carter is Jay-Z' could have expressed different propositions. For example, in a possible world in which Shawn Carter pursued a different career and in which Onika Maraj (also known—in the actual world—as 'Nicki Minaj') decided to call herself 'Jay-Z', the utterance in question expresses the (necessarily false) proposition that Shawn Carter is Onika Maraj. In Stalnaker's account, this dependency of the proposition expressed on the context of utterance is captured by the *diagonal proposition*, which is a function from possible worlds to truth-values—where, crucially, the truth-value assigned is the one the relevant utterance would have if it occurred in the world in question. The diagonal proposition of the utterance 'Shawn Carter is friendly and Jay-Z isn't' is contingent, since it is true in worlds in which 'Shawn Carter' refers to a friendly person and 'Jay-Z' doesn't. Likewise, the diagonal proposition of 'Shawn Carter is Jay-Z' is contingent, since it is false in the world described above, in which 'Jay-Z' refers to Onika Maraj. The diagonal proposition assigns the truth-values of different singular propositions with respect to different possible worlds, reflecting the fact that in cases of identity confusion, a subject doesn't know which (singular) proposition is expressed by an utterance. Stalnaker's proposal is thus to diagonalize in such cases, i.e., to assign the diagonal proposition to a subject's utterances and beliefs. Applied to the case at hand, one can then maintain that Frege's beliefs about Shawn Carter and Jay-Z are consistent, and that an utterance of 'Shawn Carter is Jay-Z' is informative. Crucially, this strategy requires that the diagonal content is shared between speaker and hearer. Even if the speaker or the hearer may not know which proposition is expressed by an utterance, they do know its diagonal content—i.e., they know how the utterance's truth-value depends on its context. Therefore, the diagonal proposition yields a set of possibilities that can be eliminated from the common ground in a conversation. For example, upon hearing the utterance 'Shawn Carter is Jay-Z', Frege learns that the person referred to by 'Shawn Carter' is identical to the person referred to by 'Jay-Z' and can update his beliefs accordingly.

We saw above that to accommodate the communication of egocentric beliefs, Stalnaker has to postulate singular contents. As is illustrated by Frege cases,

however, these don't always capture the contents of beliefs and utterances—hence the need for diagonalization. Since diagonal contents are supposed to be shared between the participants in a conversation, the ascription of such contents is thought to preserve Stalnaker's account of communication. In the following, I argue that there are cases in which this strategy fails. More specifically, I describe two scenarios that represent both Lingens cases and Frege cases, but in which no shared diagonal content is available.[6]

4.2 Lingens meets Frege, part one

When Frege meets Lingens for the first time, the first thing the latter says to him is 'I can't remember who I am'. Neither of them knows that the person who says this is Lingens. We can thus assume that Lingens doesn't believe the singular proposition that Lingens doesn't remember who he (Lingens) is. Frege has never met Lingens before, but he has heard of him, and he believes that Lingens remembers who he is. Since Frege doesn't know that Lingens is the person talking to him, Frege doesn't revise this belief, even though he accepts what the person talking to him said. Consequently, the singular proposition that Lingens doesn't remember who he is cannot be added to Frege and Lingens' common ground. It is therefore necessary to diagonalize. The diagonal proposition expressed by Lingens' utterance of 'I can't remember who I am' is true in all and only those worlds in which this utterance token expresses a true proposition. If this content is added to the common ground, then—assuming that both Lingens and Frege presuppose basic facts about meaning—the information transmitted from Lingens to Frege includes that the producer of the utterance cannot remember who he or she is. Since this seems plausible, Stalnaker's account appears to provide an adequate characterization of this case. However, here is the full story about how Lingens meets Frege:

Frege is an assassin who has been assigned to kill Lingens. Frege doesn't know what Lingens looks like, but he knows that he is supposed to check in at the Grand Hotel soon. On his way there, Frege witnesses an explosion. He sees a man who seems dazed and who tells him: 'I can't remember who I am'. That man is Lingens who, due to the explosion, has temporarily lost his sense of hearing and doesn't hear his own utterance. Lingens is unaware of his temporary deafness, however, and assumes that he has lost his voice. He therefore fails to believe that he has produced an utterance.

It seems obvious that in the case just described, Lingens manages to communicate something to Frege. He himself is unaware of this, but it is no precondition for successful communication that one knows that one has done so. Since the case is a case of ignorance about someone's identity—i.e., a Frege case—Stalnaker's account requires that one ascribes a diagonal content. However, since Lingens doesn't believe that an utterance has occurred, he cannot believe that his utterance expresses a true proposition. Consequently, Lingens doesn't believe the

[6] Stalnaker (2014) also discusses two communicative situations that represent both Lingens and Frege cases. However, the cases are importantly different than the ones I discuss, and Stalnaker doesn't specify the content that is communicated in his scenarios.

diagonal proposition associated with his utterance, and the proposition that the producer of the utterance cannot remember who he is isn't added to the common ground after Lingens' utterance. If, for example, Frege were to write 'You just told me that you have lost your memory' on a sheet of paper and show it to Lingens (for whatever reasons), this utterance would clearly convey information to Lingens, which is incompatible with the assumption that the diagonal content of Lingens' previous utterance is already part of the common ground. Moreover, Lingens' failure to realize that he has made an utterance affects his behavioral dispositions. Given the chance, he would most likely try again to tell Frege that he has lost his memory. This behavior wouldn't make sense if the content in question was already part of the common ground.

The scenario just described raises a serious problem for Stalnaker's account of communication. The case involves successful communication, but no shared content that could be added to the common ground is available. It thus appears that successful communication doesn't depend on propositions added to a common ground between the participants in a conversation, contrary to the central assumption of Stalnaker's account. Before I discuss possible responses to this objection, let me describe another problem case, by explaining what happened after Lingens and Frege first met.

4.3 Lingens meets Frege, part two

One day, Frege finds out that the amnesiac he met after the explosion is Lingens and tells him 'You are Lingens'. To characterize the information transmitted to Lingens by Frege's utterance, one again needs to diagonalize, but this time for a slightly different reason than in the previous case. If one construes the content of the utterance as a singular proposition, then it is trivial—that singular proposition is necessarily true and therefore doesn't rule out any possibilities. But it is evident that Frege's utterance conveys crucial information to Lingens. The diagonal proposition associated with Frege's utterance is true in all and only those worlds in which Frege's utterance of 'You are Lingens' is true. The diagonal proposition is therefore contingent and can exclude possibilities, and one might think that it captures the information that is conveyed to Lingens. However, here is the full story about how Frege tells Lingens who he is:

Lingens and Frege have become close friends, so close that Frege tells Lingens that he wants to kill a man called 'Lingens'. They are both staying in the Grand Hotel, where Frege is still waiting for the arrival of the man he is expected to kill. One day, Frege's accomplice, Lauben, calls Frege to tell him that Lingens is in the hotel. Soon afterwards, when Frege has just passed on this information to Lingens, Lauben arrives to the Grand Hotel. He tells Frege that Lingens is in room 5 and asks him to follow him there. Frege, who knows that this is his new friend's room number, realizes what is going on and wants to warn Lingens, but without alerting Lauben. He thus reaches for his phone and tries to send a message to Lingens without taking the phone out of his pocket. Frege believes that this is his only chance to save Lingens, but he is aware that he is unlikely to succeed. If his fingers don't hit the right keys in unlocking his phone, in writing his message, and in

pressing 'send', none of which are trivial tasks, no message will be delivered. For this reason, Frege doesn't believe that he has managed to produce an utterance. But, in fact, he has produced an utterance that reaches Lingens in time for him to leave his room before Lauben's arrival. Clearly, Frege has communicated something to Lingens, even though he doesn't know or even believe that he has done so. Nevertheless, the diagonal content associated with Frege's utterance cannot be part of their common ground. This is because Frege doesn't believe that he has produced an utterance, and therefore, he doesn't believe that this utterance token expresses a true proposition. We thus seem to have another case of successful communication without common ground.

4.4 Lingens meets Frege, the upshot

The two cases just discussed are certainly unusual. But it is at least arguable that it is common for people to be uncertain whether they have managed to produce an utterance, in particular when telecommunication devices are involved.[7] In any case, rare or not, the cases described are clearly possible, and since they represent instances of successful communication without the relevant common ground between speaker and hearer, they are counterexamples to Stalnaker's account of communication.

One might suggest that the cases discussed are just instances of the common phenomenon of communication without known communication. For example, it often happens that a speaker doesn't know whether the hearer has understood her utterance, even if she is certain that she has produced one. In such cases, the content of the utterance isn't added to the common ground, even if the hearer has heard, understood, and accepted what the speaker said. However, while such cases may also be problematic for Stalnaker's account, I wish to argue that the problem raised by Lingens and Frege's successful communication runs much deeper. Stalnaker's account construes communication as the elimination of possibilities from a common ground, and this conflicts with the fact that one can communicate successfully without the communicated content being added to the common ground. One might justifiably claim that something goes wrong in such cases. When a speaker doesn't know that she has communicated successfully, this will, for instance, often make the conversation less efficient. But at the same time, since something is communicated in such cases, a theory of communication has to account for this. In fact, there is a way to account for this kind of communicative success. In an ordinary case in which a speaker doesn't know or believe that the hearer has understood her utterance, they will nevertheless both end up believing the content of the utterance. That content can be represented by a set of possible worlds, and the set of possibilities ruled out

[7] With some devices, the message directly produced and perceived by the sender is very different from the one that reaches the receiver—this applies, for instance, to translation apps and various communication devices for people with disabilities. Since the utterances perceived by the sender and the receiver in communication that relies on such devices are different, so are the diagonal propositions associated with them, and hence it is at least arguable that there is again often no common ground involved.

by this piece of information can then be used in characterizing their shared beliefs. The set of possibilities representing a shared belief state doesn't have the iterative structure that common ground has. But this is adequate, since in cases of the type at hand, the participants in a conversation don't know that the communicated content is shared belief content. Thus, in ordinary cases of communication without known communication, communicative success can still be understood as the elimination of possibilities from a set of shared beliefs. It seems to me that this solution to the problem is in the spirit of Stalnaker's account—whether it also conforms to its letter can be left open here. In any case, this proposal doesn't help to solve the problem raised by the two scenarios involving Lingens and Frege. For, as we saw, not only is there no common ground between Lingens and Frege, but no shared belief content, either. Notice that Stalnaker explicitly states that in order to explain successful communication, there has to be a shared content even in cases of the type I have discussed: "When, for example, I tell the amnesiac who he is, he learns something that I already knew, so there had better be a proposition that represents what I knew, and he learned" (Stalnaker 1999, p. 20). The problem raised by Lingens and Frege's successful communication is therefore much more pressing than that raised by more ordinary cases of communication without known communication. An account of the kind held by Stalnaker seems unable in principle to account for the cases involving Lingens and Frege.

One might also wonder whether the problem I presented is essentially tied to the communication of egocentric beliefs, since it seems that there are other Frege cases that raise the same kinds of issues. Suppose, for instance, that in the second of the scenarios I discussed, Frege's message to Lingens had read 'Water = H_2O' or 'Shawn Carter = Jay-Z'. Provided that such a message is informative for Lingens, it seems that one must again diagonalize, leading to the same kind of problem. I agree that such cases, which are unrelated to the phenomenon of egocentric belief, also raise a problem for Stalnaker's account. To resolve this problem, Stalnaker would have to identify a qualitative shared content that is suitable for being added to a common ground. While I don't have a clear sense of whether this can be done in all Frege cases that don't involve egocentric beliefs, I believe that the prospects of finding a suitable shared content are better in such cases. For example, it doesn't seem too implausible to suppose that speakers share some way in which water is presented to them. If so, one can use this shared mode of presentation to identify a contingent belief shared by Frege and Lingens after the latter reads the message 'Water = H_2O'. As was just argued, however, no such shared content is available when it comes to egocentric beliefs.[8]

Let me describe in more abstract terms how the problem for Stalnaker's account of communication arises. His account requires that there is a content that is transmitted from speaker to hearer in communication and that is thus shared as a result. In many Lingens cases, this shared content cannot be an ordinary qualitative content. On Stalnaker's account, what is transmitted in such cases is thus either a singular proposition or a diagonal proposition. If the case in question is also a Frege

[8] Cf. also Frege's claim that the way one is given to oneself isn't shareable (1918–19, p. 66).

case, then that content cannot be a singular proposition. However, if it is, in addition to that, a case in which the speaker doesn't know that she has produced an utterance, the shared content cannot be the diagonal proposition associated with this utterance, either. The cases I described have precisely this structure. They represent both Frege cases and Lingens cases, and they involve a speaker who isn't aware that an utterance has occurred, and who, therefore, doesn't believe that this utterance expresses a true proposition. Since these cases also exemplify successful communication, they are at odds with Stalnaker's account.

5 Searching for common ground

In the following, I discuss two potential replies to the problem raised by my cases. Both try to save Stalnaker's account by identifying another kind of content that is shared between Lingens and Frege and that can serve as the common ground required by Stalnaker's account.

The first reply involves the claim that I have been considering the wrong kind of diagonal content. We saw that the diagonal propositions associated with Lingens' utterance of 'I can't remember who I am' and with Frege's utterance of 'You are Lingens' don't represent the communicated contents, because they aren't believed by the speakers. But in principle, one can associate not only utterances, but also thought tokens with diagonal propositions.[9] One might thus argue that Frege and Lingens believe some diagonal proposition associated with a thought token that occurs in the conversation. It is natural to assume that Lingens believes that he thinks 'I can't remember who I am' in the first case and that Frege believes that he thinks 'You are Lingens' in the second case. Furthermore, while they don't believe the singular propositions one would associate with the relevant thought tokens—as was argued above—they plausibly do believe the diagonal propositions associated with them. So why shouldn't they serve as the contents communicated from Lingens to Frege in the first case, and from Frege to Lingens in the second? However, closer inspection reveals that this proposal doesn't work either. Notice first that if one considers the diagonal propositions of two different thought tokens, of the one entertained by the speaker when she makes the utterance and of the one entertained by the hearer when she perceives it, then these propositions will certainly differ. Since we are after a shared content, it is more promising to argue that our shared content is the diagonal proposition associated with one particular thought token, namely of that of the speaker. Let me grant for the sake of the argument that whenever a hearer perceives an utterance, she believes that the producer of the utterance thinks a corresponding thought. Both speaker and hearer thus have a belief of the form *Thought token […] expresses a true proposition*. What Stalnaker needs is that there is some shared way in which the relevant thought token is given to speaker and hearer, such that the resulting beliefs have the same content. Unlike the speaker, i.e., the person entertaining the thought, the hearer cannot refer to it purely

[9] Stalnaker (1990) raises some problems for the idea of diagonalizing on thought tokens.

demonstratively. Furthermore, there isn't always an objective, i.e., non-egocentric, way for a hearer to refer to a speaker's thought, which becomes particularly clear if one considers cases in which the hearer doesn't know who produced the utterance in question. What the hearer could do is to refer to the speaker's thought via its relation to the utterance in question, by something like *the thought associated by the speaker with his utterance of …*. Alternatively, he could refer to it in some (other) indexical way, e.g., by something like *the thought … just transmitted to me*. But none of these ways of picking out the thought token is available to the person that entertains it, i.e., Lingens in the first case and Frege in the second. We are thus back to the problem that egocentric contents are often not shared between the participants in a conversation. In the case at hand, this implies that there is often no shared way of referring to the speaker's thought token, and thus no shared diagonal proposition associated with it either. Therefore, the proposal to draw on the diagonal proposition of the speaker's thought token that is associated with his utterance doesn't solve the problem for Stalnaker's account.

Since neither the diagonal content of a speaker's utterance nor that of a thought token can serve as the content transmitted to the hearer, it is hard to see how the diagonalization strategy could be saved. For what other entity is there whose diagonal content could be shared? One last attempt might be to suggest that the required shared content is the diagonal proposition associated with something that could have occurred. For example, while Frege doesn't believe the diagonal proposition associated with his utterance of 'You are Lingens', because he doesn't believe that such an utterance is made, he still believes the diagonal proposition associated with what he would have uttered, had he succeeded. Moreover, this content is also believed by Lingens. But the problem is that this cannot be the information he gets from the utterance, since he had that belief before he received the message. Generally speaking, and phrased more pointedly, counterfactual thoughts and utterances aren't suitable for representing the information conveyed by actual utterances. I thus conclude that the diagonalization strategy cannot be applied to the case of Lingens and Frege.

Aside from diagonalization, there is another popular strategy among proponents of singular thought contents for dealing with Frege cases. This strategy involves *guises* or *ways of taking*, i.e., modes of presentation of propositions (e.g., Salmon 1986; Soames 2002). The second reply tries to employ this alternative strategy to solve the problem raised by the case of Lingens and Frege. The idea is thus to say that while in both of the cases discussed, Frege and Lingens entertain singular propositions—in the first, that Lingens cannot remember who he is, and in the second, that Lingens is Lingens—these singular propositions are presented to them in a certain way. And since, as we saw, the singular propositions themselves aren't suitable for representing the communicated information, this information is captured by these modes of presentation. Since diagonalization plays a central role in Stalnaker's account of communication, this response would be likely to involve a major rebuild. But in any case, whichever way one construes this revised account, it isn't apparent how it could solve the problem at hand. The reason is that in order for the proposal to work, the guises under which the singular propositions in question are presented have to be shared. At the very least, there would have to be

one such guise shared between Frege and Lingens. But on the face of it, these propositions are given to them in very different ways, and no such shared guise is apparent. Basically, here we face the same problem that we started with. The information that Lingens and Frege provide and receive with the relevant utterances is, at least intuitively, egocentric information. In the cases at hand, as in many other cases, the egocentric information associated with an utterance differs between the participants in the conversation. And as the cases I have described suggest, there is sometimes no perspective that is shared between them, and thus no shared content that could be used to represent their common ground. Accordingly, there is little reason to believe that shared guises of the type required are to be found.

6 A two-dimensionalist solution

We just saw that Stalnaker fails to provide a complete account of communication. Nevertheless, it would be premature to completely abandon the idea of characterizing communication by means of common ground, since Stalnaker's account does seem to capture what goes on in many conversations. The simplest way to react to the counterexamples I gave would thus be to restrict the scope of Stalnaker's account. For example, one could distinguish between communication and *conversations*, and argue that, in a genuine conversation, all participants are aware of which utterances have been made. Accordingly, Stalnaker's account would only apply to conversations and the cases I discussed in Sect. 4 would fall outside of its scope.

This simple solution has two downsides. The first is that the revised account doesn't correctly identify the communicated content in all cases. To see this, consider the following variation of the case discussed in Sect. 4.2. Assume that Lingens' hearing is unaffected by the explosion and that he thus knows that he has uttered 'I can't remember who I am'. The case now exemplifies a conversation, in the sense just explicated. The revised version of Stalnaker's account under consideration would hold that, here, the diagonal proposition associated with Lingens' utterance is communicated from Lingens to Frege. This version of the account isn't applicable to the original version of the case, and as we saw, the diagonal proposition isn't available for being communicated in it. However, it seems clear that the same content is communicated in both variations of the case, since it is hard to motivate that the communicated content depends on whether the speaker knows that they have managed to communicate something. The contrast between the two variations of the case thus undermines the idea that the diagonal proposition is communicated in the version in which it is available—as the revised version of Stalnaker's account states—and hence, it also undermines the idea that the diagonalization strategy should be applied to all Frege cases. I return to this issue below. The second downside of the simple solution is that it is desirable to give a complete account of communication, and the account at issue doesn't help achieve this. In what follows, I first give a diagnosis of why Stalnaker's account fails as a general account of communication and then make a proposal concerning what such an account should look like.

Stalnaker assumes that there is one content that is transferred from speaker to hearer in a conversation and that there is one set of worlds from which possibilities are excluded. But this content has two different roles to play. On the one hand, it is supposed to reflect the epistemic perspective of an individual, i.e., the way she represents the world. On the other hand, it is supposed to be shared by the participants in a conversation. When egocentric beliefs are involved, these demands pull in different directions. A subject's perspective on the world represented by her egocentric beliefs is adequately captured by centered worlds contents. But these contents are frequently not shared by subjects in cases of successful communication. Singular contents, on the other hand, are more coarse-grained and are therefore more readily shared by subjects with very different perspectives. But for precisely this reason, they don't always capture the way a subject represents the world—specifically, they fail to do so in Frege cases. Moreover, as we saw, other contents that can play both roles in question aren't available in all such cases.

For these reasons, I believe that to account for the communication of egocentric beliefs, one needs both centered contents and singular contents to play the two roles just described.[10] These two kinds of contents can be provided by an account based on epistemic two-dimensionalism.[11] The key thesis of epistemic two-dimensionalism is that every mental state that has a content is associated with two intensions, a *primary intension* and a *secondary intension*.[12] A primary intension is a function from worlds considered as actual to extensions, and a secondary intension is a function from worlds considered as counterfactual to extensions. Primary and secondary intensions are connected to epistemic and metaphysical modality, respectively, as follows. A thought (or sentence) with a necessary primary intension is a priori, and a thought with a necessary secondary intension is metaphysically necessary. A thought's primary intension captures its rational relations to other thoughts, as well as its role in a subject's cognition. Accordingly, it represents the epistemic upshot associated with a belief. The epistemic possibilities that figure in primary intensions are centered worlds and are therefore suitable for characterizing the contents of egocentric beliefs. Secondary intensions are effectively functions from metaphysical possibilities to extensions and thus capture a Kaplanian and Kripkean understanding of content. Let me illustrate this epistemic two-dimensionalist framework by means of some examples. Start with the case discussed in Sect. 4.2. When Lingens says 'I can't remember who I am', the primary intension of the belief he expresses with this utterance is true at all and only those worlds in which the individual at the center of the world cannot remember who he or she is. Now, if one considers a world centered on Lingens as actual, then, relative to this world, the secondary intension expressed by Lingens' utterance corresponds to a singular proposition: it is true at all and only those worlds in which Lingens cannot

[10] I have also argued for this claim in (Kipper 2018).

[11] Chalmers (2011, pp. 619–621) also suggests that communication can be characterized within a two-dimensionalist framework.

[12] Chalmers (2004) develops epistemic two-dimensionalism in detail. There, he applies the account primarily to linguistic expressions. However, Chalmers (2002) also endorses a two-dimensionalist account of mental content.

remember who he is. Next, consider the belief Frege acquires upon hearing Lingens' utterance. Assume that this belief could be suitably expressed by something like 'This man [mentally pointing to Lingens] can't remember who he is'. Its primary intension is true at all and only those worlds in which the man whom the individual at the center mentally points to cannot remember who he is. If one considers as actual a world centered on Frege, who is mentally pointing to Lingens, then, relative to this world, the belief's secondary intension is true at all and only those worlds in which Lingens cannot remember who he is. Notice that while the primary intensions of Lingens' and Frege's beliefs differ, their secondary intensions are identical. I claim that this is no accident, since successful communication requires shared secondary intensions between speaker and hearer. This claim is meant to apply to the communication of both egocentric beliefs and any other kinds of beliefs. In one sense, secondary intensions thus represent the (singular) contents required by Stalnaker's account: they are the contents that are transmitted from speaker to hearer in any case of successful communication. However, secondary intensions still cannot vindicate Stalnaker's account, since they aren't suitable for representing the kind of common ground that his account requires. This is because secondary intensions don't capture the epistemic upshot of a piece of information for a subject. Let me illustrate this by means of the case discussed in Sect. 4.3. When Frege says to Lingens 'You are Lingens', the secondary intension transmitted from Frege to Lingens is true at all and only those worlds in which Lingens is Lingens. The secondary intension associated with Frege's utterance therefore doesn't rule out any possibilities, and hence it doesn't represent information added to their common ground.

Primary intensions, on the other hand, do capture the epistemic upshot associated with a belief. This makes them a suitable basis for characterizing the common ground in those conversations in which there is a common ground. More specifically, my proposal is this. The common ground in a conversation consists in those primary intensions that are shared between speaker and hearer (and are presupposed to be shared), and that determine shared secondary intensions relative to an epistemic possibility. Accordingly, the context set is a set of centered worlds (considered as actual), namely those worlds compatible with the primary intensions of the speaker's and the hearer's presuppositions. In cases of successful communication in which the primary intensions of the speaker's and the hearer's relevant beliefs are shared (and presupposed to be shared), this primary intension represents the information that is added to the common ground—in other words, those centered worlds not compatible with this primary intension are eliminated from the context set. Suppose, for instance, that Frege and Lingens are both in the same building and presuppose that they are in the same building. If Frege says 'This building is safe', the belief acquired by Lingens plausibly has the same primary intension as the belief expressed by Frege. Since their beliefs' secondary intensions are also shared, this primary intension can be added to the common ground. Similar considerations apply, among others, to many cases in which ordinary qualitative belief contents are communicated. If, for instance, a speaker utters sentences such as 'Some fish have lungs', 'Most fire trucks are red', or 'Spinach is healthy' in a conversation with a hearer who interprets the expressions involved in the same way,

they will share both primary and secondary intensions and the associated primary intensions will be added to their common ground.

The existence of a common ground to which information is added in a conversation thus requires both shared secondary intensions and shared primary intensions between speaker and hearer. As we saw, primary intensions aren't always shared in cases of successful communication. When egocentric beliefs are communicated, as in the examples I discussed, the primary intensions of the communicated beliefs usually differ. These are cases in which the epistemic upshot of the beliefs involved is different for speaker and hearer—as when Frege tells Lingens 'You are Lingens' or when a speaker says to a hearer 'I am hungry'. Such cases exemplify successful communication without a common ground to which a content is added. But even in cases of this type, there is a shared content—represented by a secondary intension—that is transmitted from speaker to hearer.

Notice that there are cases involving the communication of egocentric beliefs in which both secondary and primary intensions are shared. For instance, when a speaker utters 'It is safe here' and 'The game starts now', then the beliefs acquired by the hearer upon hearing these utterances have the same primary intension as the ones expressed by the speaker, given that the hearer believes that the speaker is at (near enough) the same location at the time of utterance and that she herself perceives the utterances at (near enough) the same time as they are produced. Provided that both speaker and hearer also presuppose that they are at the same location, the primary intension of speaker's and hearer's belief is added to the common ground. Furthermore, when non-egocentric beliefs are communicated, this often involves shared primary intensions—arguably, this is the standard case.[13] In such cases, too, these primary intensions can be used to model the content added to a common ground.

On the account I propose, communication doesn't require a common ground between speaker and hearer. This account nevertheless preserves the natural idea that successful communication involves the transmission of a belief content from speaker to hearer, by requiring shared secondary intensions. It also preserves the idea that communication often involves a common ground between speaker and hearer to which beliefs are added, due to the fact that primary intensions are often shared between speaker and hearer. Let me also note that, if one abandons the idea that common ground is essential for successful communication, one need not appeal to diagonalization in every Frege case. Consider my reconstruction of the case introduced in Sect. 4.2, in which Lingens tells Frege 'I can't remember who I am'. On the two-dimensionalist reading of it I proposed, the communicated content isn't metalinguistic, and therefore doesn't correspond to a diagonal proposition. Now consider again the variation of the case I introduced, in which Lingens knows that he has made an utterance. As I noted above, intuitively, the communicated content is the same in both cases, and thus it is natural to think that in the variation of the original case, the diagonal proposition isn't transmitted either, even though it is in

[13] Cf. Jackson (2004), (Kipper 2012) for other reasons why primary intensions are important in communication.

principle available. This isn't to deny that the diagonal proposition can capture the content communicated in a particular conversation. All I am suggesting is that on my proposed account of communication, diagonalization plays a less central role than it does in Stalnaker's.

7 Conclusion

In this paper, I argued that Stalnaker's theory doesn't provide a satisfactory account of communication in cases involving the communication of egocentric beliefs. Stalnaker tries to model this kind of communication by means of singular belief contents. Furthermore, he introduces multi-centered belief states to accommodate the peculiarities of egocentric beliefs, yielding a multi-centered common ground in which each center represents a participant in a conversation. But it turned out that there are situations in which the participants in a conversation don't have the knowledge of each other that such a common ground requires. Since this kind of ignorance doesn't hinder successful communication, this implies that the applicability of the part of the account involving multi-centering is limited. This problem isn't fatal to the overall account, however, since in such cases the relevant common ground can still be represented by means of uncentered possible worlds. Nevertheless, a consequence of the latter move is that the special character of egocentric beliefs and their communication isn't captured by Stalnaker's account.

Furthermore, it transpired that Stalnaker's fallback position of modeling common ground by means of possible world contents isn't tenable, either. The argument that led to this conclusion relied on scenarios that exemplify both Lingens cases and Frege cases. In Frege cases, singular belief contents cannot represent the information conveyed by an utterance. According to Stalnaker's account, in such a case this information is represented by the diagonal proposition associated with an utterance. However, this presupposes that all the participants in the conversation believe that an utterance has occurred. And as the two cases I presented involving Lingens and Frege illustrate, this isn't necessary for successful communication. Moreover, I argued that there is no other type of content that could serve as the required common ground. Hence, there are cases of successful communication involving egocentric beliefs in which there is no such common ground. And this undermines the key assumption of Stalnaker's account.

I therefore proposed an epistemic two-dimensionalist account of communication. This account preserves the natural idea that communication involves the transfer of belief contents, in that it requires speaker and hearer to have beliefs with a shared secondary intension. While the two-dimensionalist account abandons the requirement that successful communication involves the elimination of possibilities from a shared common ground, it maintains that many communicative situations follow this pattern, namely those in which speaker and hearer have beliefs with identical primary intensions. By postulating both centered and uncentered contents, epistemic two-dimensionalism can thus provide a complete account of communication, while also retaining the theoretical fruitfulness of Stalnaker's account.

Acknowledgements I would like to thank the participants of Christian Nimtz' research colloquium at the University of Bielefeld for helpful comments. I am especially grateful for comments and discussion to Jochen Briesen, Scott Grimm, Joachim Horvath, Mark Richard, Robert Stalnaker, Zeynep Soysal, and to an anonymous reviewer for this journal.

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