

Centered Assertion

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0. Introduction

I suggest a way of extending Robert Stalnaker's account of assertion to allow for centered content. In formulating his account, Stalnaker takes the content of assertion to be uncentered propositions: entities that are evaluated for truth at a possible world. I argue that the content of assertion is sometimes centered: the content is evaluated for truth at something within a possible world. I consider Andy Egan's proposal for extending Stalnaker's account to allow for assertions with centered content. I argue that Egan's account does not succeed. Instead, I propose an account on which the contents of assertion are identified with sets of *multi-centered* worlds. I argue that such a view not only provides a plausible account of how assertions can have centered content, but also preserves Stalnaker's original insight that successful assertion involves the reduction of shared possibilities.

In the first section, I present Stalnaker's account of how the content of assertion interacts with the conversational context. I point out that Stalnaker's account presupposes that the contents of assertion are uncentered propositions. In the second section, I argue for the claim that not all assertions have uncentered content. I present a case in which a) an assertion is made, but b) the content of the assertion is not plausibly taken to be an uncentered proposition. In the third section, I present Andy Egan's recent attempt to make room for assertions with centered content. Egan's account takes centered worlds to play the role that possible worlds play in Stalnaker's original account. In the fourth and final section, I argue that Egan's account is unable to accommodate certain instances of centered assertion. I then present my proposal for modifying Stalnaker's account. I suggest having multi-centered worlds (worlds with more than one designated individual) play the role that possible worlds play in Stalnaker's original account. I argue that such an account is better able to represent the shared possibilities of

the conversational participants and succeeds in accommodating assertions with centered content.

1. Stalnaker's Account of How the Content of Assertion Affects the Context

In (1978) Stalnaker states four truisms about assertion: (1) that they have content, (2) that they are made in a context, (3) that the content of an assertion sometimes depends on the context in which it is made, and (4) that acts of assertion affect the context. With respect to the fourth truism, there is an obvious and not very interesting way in which an act of assertion changes the context. If I produce an utterance of 'It is raining outside', my audience will come to know, for example, that I produced an utterance of 'It is raining outside'. They will also come to know that a sound has been produced. However Stalnaker's concern is a more interesting way in which an act of assertion changes the context. The *content* of the assertion also affects the context. The context is altered not only by the fact that I produced an utterance, but also by what is said by my utterance. Stalnaker provides a model for how the content of an assertion alters the context in which the assertion is produced.

Stalnaker's account for how the content of assertion affects the context relies heavily on the notion of presupposition. Stalnaker states, "Presuppositions are what is taken by the speaker to be the common ground of the participants in the conversation" (Stalnaker 1978, 321). If a proposition, *p*, is among the propositions that I presuppose, then, not only do I accept *p*, but I take my conversational partners to also accept *p*. I also take my conversational partners to take me to accept *p*.¹ Oftentimes, there will be many propositions that a participant in a conversation believes, yet fails to presuppose. Suppose you and I are watching a bird circle overhead. I believe that the bird flying overhead is a turkey vulture, yet I know that you fail to believe that it is a turkey vulture. In such a case, although I believe that the bird flying overhead is a turkey vulture, I fail to

¹ What does it mean to *accept* a proposition or to *take* someone else to accept a proposition? Accepting a proposition, as I am using it here, is not meant to be equivalent to believing a proposition. Stalnaker says, "The presuppositions presupposed in the intended sense need not really be common or mutual knowledge; the speaker need not even believe them" (321). So a speaker might accept a proposition for the sake of a conversation even if she does not believe it. In conversing with a hypochondriac, I might accept for the sake of the conversation, that he is sick (and I may even presuppose that he is sick) even though I don't believe that he is.

presuppose the proposition that the bird flying overhead is a turkey vulture. Generally, however, I presuppose those propositions that I believe, that I take you to believe, and that I take you to take me to believe, etc. In the case described, some such propositions might include the proposition that there is a bird flying overhead, the proposition that the bird flying overhead is larger than a sparrow, the proposition that that we are outside, etc.

Even though it is propositions that are presupposed, Stalnaker chooses to represent the presuppositions of the speaker not as a set of propositions, but rather as a set of possible worlds. A possible world, w , is compatible with a presupposition just in case the proposition presupposed is true at w . He calls the set of possible worlds compatible with the propositions presupposed the *context set*. The *speaker's* context set is the set of possible worlds compatible with the speaker's presuppositions. The *conversational* context set is the set of worlds compatible with those presuppositions shared by the conversational participants. If we choose also to characterize belief in terms of sets of possible worlds, then the set of worlds that characterize the belief of a member of a conversation will typically include far fewer worlds than the set of worlds that make up the conversation's context set. I believe that the bird flying overheard is a turkey vulture and so the set of worlds that characterize my beliefs fails to include a possible world in which there is, say, an eagle flying overhead. However, knowing that you cannot distinguish turkey vultures from eagles, the set of worlds that characterize the context set of our conversation includes possible worlds in which there is an eagle flying overhead, as well as possible worlds in which there is a turkey vulture flying overhead.

Stalnaker's proposal for how the content of an assertion affects the context is that successful assertion involves reducing the conversational context set. Stalnaker says, "To make an assertion is to reduce the context set in a particular way, provided that there are no objections from other participants in the conversation. The particular way in which the context set is reduced is that all of the possible situations incompatible with what is said are eliminated" (323). Suppose I succeed in asserting 'The bird flying overhead is a turkey vulture.' As mentioned above, prior to my assertion, the context set of the conversation included possible worlds in which the bird flying overhead is an eagle. However, if my assertion is accepted, then all those possible worlds that do not contain a turkey vulture flying overhead are eliminated from the conversation's context set. The

post-assertion context set contains only worlds in which a turkey vulture is flying overhead.

As conversation progresses and assertions are accepted, propositions are added to the list of propositions presupposed by the conversation. As propositions are added to the list of propositions presupposed, the number of worlds in the conversational context set is reduced. Stalnaker compares engaging in conversation to playing a game:

One may think of a nondefective conversation as a game where the common context set is the playing field and the moves are either attempts to reduce the size of the set in certain ways or rejections of such moves by others. The participants have a common interest in reducing the size of the set, but their interests may diverge when it comes to the question of how it should be reduced (324).

Stalnaker's plausible account of assertion takes conversation to be a collective pursuit in which participants together attempt "to distinguish among alternative possible ways things may be" (322)

2. Uncentered Content, Centered Content and Assertion

We can distinguish between two kinds of content: *uncentered* content and *centered* content. Content is *uncentered* if and only if it is evaluated for truth at a possible world.² Content is *centered* if and only if it is evaluated for truth at something within a world such as a time, an individual, a person-stage, a location in spacetime, etc. Among those who agree that sentence-tokens express content, it is largely uncontroversial that sentence-tokens such as 'Bananas contain potassium' and 'The Battle of Hastings occurs after the War of the Roses' express uncentered content. The content expressed by such sentences is evaluated at a world: the first is true at the actual world and the second is false at the actual world. In other cases it is more controversial whether a sentence token expresses centered content or uncentered content. Suppose that at 9am on August 2, 2008 I produce a token utterance of 'The frying pan is hot'. Some argue that the content associated with such a sentence-token is the uncentered content

² I assume in what follows that possible worlds contain past, present and future times.

that the frying pan is hot at 9am, August 2, 2008.³ This content is uncentered because it is either true at the actual world, or false at the actual world (if true or false at all). Others argue that the content associated with such a sentence token is the centered content that the frying pan is hot.⁴ This content is centered because it is not true at the actual world *simpliciter*, but rather it is true at some times within the actual world and false at other times: it is true at all and only those times at which the frying pan is hot.

One major reason for positing the existence of centered content is to adequately characterize belief states. Consider the following (slightly modified) scenario originally due to John Perry (1977): An amnesiac named Rudolf Lingens finds himself in the stacks of the Harvard library. He stumbles upon a large book entitled *The World Encyclopedia: A Complete Description*. The book lists all and only sentences that have true uncentered content. In the encyclopedia, Lingens reads that there is another amnesiac reading an exactly similar copy of the encyclopedia in the Stanford library. The amnesiac in the Stanford library is having experiences that are subjectively indistinguishable from those had by Lingens. Lingens wonders whether he is at Harvard or at Stanford. No proposition with uncentered content will resolve his wondering. What he lacks is a belief with centered content. He does not lack information about what the world is like; the encyclopedia tells him all that information. What he lacks is information about his location within the world.⁵

It is clear that Stalnaker's 1978 model of assertion appeals exclusively to uncentered content. He says, "It is propositions that are presupposed—functions from possible worlds into truth-values" (Stalnaker 1978, 321). So it is uncentered content that is presupposed and it is possible worlds that make up the context set. My main interest in this paper is to consider the following two questions: (1) Do some assertions have centered content? (2) If so, then how should we modify Stalnaker's account of assertion in order to accommodate centered content?

³ Defenders of this view go by the name 'eternalists'.

⁴ Defenders of the view that the content of a sentence like 'the frying pan is hot' can be true at some times and false at other times, are called 'temporalists'. Some temporalists might disagree with my claim that the content of a sentence like 'the frying pan is hot' is centered. Some temporalists might think that possible worlds do not include past and future times and so the content of 'the frying pan is hot' is true (or false) at a world and is therefore not centered.

⁵ See David Lewis (1979) for more reasons why centered content is necessary in order to adequately characterize beliefs.

In this section I will argue that the answer to the first question is yes; some assertions have centered content. In the next section, I will consider the second question by looking at an attempt by Andy Egan to extend Stalnaker's account of assertion to allow for centered content. In the last section, I will argue that Egan's suggestion for how to extend Stalnaker's account does not succeed. I will then propose an alternative account that succeeds in accommodating assertions with centered content.

Let us return to the first question: Do some assertions have centered content? Recall Stalnaker's claim that, "To engage in conversation is, essentially, to distinguish among alternative possible ways things may be" (322). If this description of what engaging in conversation amounts to is correct, then we had better make room for centered content. The possible ways that things may be are not exhausted by possible ways the *world* may be. When we argue about what time it is, we do not argue about different ways the world might be, but rather we argue about when we are presently located within the world.⁶ Similarly, when Lingens wonders whether he is in the Harvard library or in the Stanford library, he does not wonder about what way the world is, but rather he wonders about where he is located within the world. If we agree that the possible ways things might be are not exhausted by the ways the world might be, and we agree with Stalnaker's claim that to engage in conversation is to distinguish among alternative possible ways things might be, then we have a *prima facie* reason for extending Stalnaker's account to include centered content.

A more definitive reason in favor of the claim that some assertions have centered content can be given by considering the following case from David Lewis:

You have been told that there are two duplicate dungeons. The door of the one on the left leads to freedom. The door of the one on the right leads to the gallows. Open the door and there's no going back. In the duplicate dungeons are two duplicate prisoners. One of them is you. You know, well enough, what sort of world you live in. Narrowing down the alternative worlds won't help you decide whether to open the door.

⁶ This claim presupposes a *tenseless* account of time according to which beliefs about time are a kind of indexical belief (analogous to beliefs about one's location in space).

Nevertheless you need to narrow down your alternative possibilities
(Lewis 1983, 399).

Like Perry's case involving Lingens being lost in the library, Lewis's case gives us reason to hold that not all possibilities are given by ways the world may be. One might agree that the possibilities are not exhausted by the ways the world might be, yet maintain that *assertion* always involves distinguishing among the ways the world might be. However this seems like an implausible position. Let us suppose that you figure out a way of communicating with your fellow prisoner. You learn that he has overheard the guards talking, and he says to you, "You are in the dungeon on the left." Trusting his information, you open the door and walk towards freedom.

With respect to the prisoner example, we are entitled to make two claims. First, it is clear that your fellow prisoner has made a successful assertion. Recall Stalnaker's claim that, "to make an assertion is to reduce the context set in a particular way, provided that there are no objections from other participants in the conversation. The particular way in which the context set is reduced is that all of the possible situations incompatible with what is said are eliminated" (Stalnaker 1978, 323). If we accept Stalnaker's claim, then a natural way to understand the above example is as follows: Prior to your conversation with your fellow prisoner, the conversational context set includes the possible situation in which your door leads to freedom and your fellow prisoner's door leads to the gallows, and the possible situation in which your door leads to the gallows and your fellow prisoner's door leads to freedom. Your fellow prisoner's utterance allows you to eliminate from the context set the possible situation in which your door leads to the gallows and your fellow prisoner's door leads to freedom. The conversational dynamics in the prisoner case are just like those that Stalnaker wishes to account for: the content of your fellow prisoner's utterance results in a reduction in the size of the conversational context set. So it is plausible to conclude that your fellow prisoner's utterance is an example of a successful assertion.

The second claim that we are entitled to make from the prisoner example is that your fellow prisoner's assertion does not eliminate possible *worlds* from the context set. Note that even though Stalnaker formulates his account of assertion in terms of possible worlds, he claims that assertion involves eliminating possible *situations*, not possible

worlds. If some possible situations are given not by uncentered worlds, but by centered worlds, then Stalnaker's statement of what assertion amounts to is entirely compatible with an account that includes centered worlds in the conversational context set. In fact, your fellow prisoner's assertion seems to be a case in which possibilities more fine-grained than worlds are eliminated from the context set. The example stipulates that "you know, well enough, what sort of world you live in. Narrowing down the alternative worlds won't help you decide whether to open the door." Since your fellow prisoner's assertion does help you decide whether to open the door, it must not have allowed you to narrow down alternative *worlds*. Instead, it helps you to eliminate a possible location within the world: you come to learn that you are the prisoner located in the dungeon on the left. The case involving you and your fellow prisoner provides an example in which a) an assertion is made and b) the assertion does not involve the elimination of possible worlds from the context set. So we can conclude that not all assertions involve eliminating possible worlds from the context set.

One might object to this conclusion by claiming that your fellow prisoner's assertion *does* involve the elimination of possible worlds. One might think that the possible situation in which you are the prisoner on the left and the possible situation in which you are the prisoner on the right describe two distinct possible worlds.⁷ So, although your fellow prisoner's utterance is an assertion, it allows you to eliminate the possible *world* in which you are the prisoner on the right from the context set. And so the case of you and your fellow prisoner fails to demonstrate that some assertions do not involve the elimination of possible worlds from the context set.

It should be noted that this objection is committed to haecceitism.⁸ The objection presupposes that two worlds can agree in all their qualitative facts, yet disagree with respect to who is who. Since the case involves duplicate prisoners in duplicate dungeons, the possible situation in which you are the prisoner on the left agrees in all its qualitative facts with the situation in which you are the prisoner on the right. Nonetheless, the objection claims that these two possible situations describe distinct possible worlds. So, the difference between the worlds must be non-qualitative. I believe that there are good

⁷ Given what he says in (2008, Chapter 3), I think Stalnaker would respond to the prisoner example in this manner.

⁸ Stalnaker acknowledges this commitment in (2008, Chapter 3).

metaphysical reasons for abandoning haecceitism.⁹ I also believe that there are good reasons to deny that a successful account of self-locating content can be given in terms of possible worlds even if one does appeal to haecceities.¹⁰ Arguing against the haecceitist response would go beyond the scope of this paper. For the purposes of this paper, I will be content to point out that the objection bears this commitment and I will accept that the prisoner example demonstrates the conditional claim that if a haecceitistic account of self-locating content is false, then not all assertions involve eliminating possible worlds from the context set.

3. Egan's Proposal

In (2007) Andy Egan also claims that there are good reasons for extending Stalnaker's account of assertion to allow for centered content and he considers how we might do so. He states:

the natural way to modify the formal account of assertion in order to accommodate self-locating assertion is just to say all of the same things as before, except to everywhere replace "possible world" with "centered world". The resulting account is as follows: We take context sets to be sets of *centered* worlds. We take the contents of assertion to be centered worlds propositions (which we will continue to treat as sets of centered worlds). Successful assertions of some proposition P eliminate all the centered worlds that are not members of P from the context set. Our accounts of presupposition and of shared presupposition, remain unchanged (Egan 2007, 11).¹¹

As Egan points out, there is a difficulty with modifying Stalnaker's model of assertion in this way. In his paper, Egan presupposes what he calls "the belief-transfer

⁹ See Lewis (1983, 390-394) and Sider's "Beyond the Humphrey Objection" (draft) for some of these reasons.

¹⁰ See Lewis' 'Two Gods' case in (1979, 140-141). See Stalnaker's response to the 'Two Gods' argument in (2008, 55-59).

¹¹ Egan takes a centered world to be a world, *w*, with a designated individual, *i*, in *w* at a designated time, *t* in *w*. Centered worlds can be represented by a world, individual, time triple: $\langle w, i, t \rangle$.

model of assertion”. He states it as follows, “In general, what’s asserted will be something that the asserter believes, and which the other parties to the conversation come to believe after they accept the assertion. So, when Alice makes an assertion, she utters some sentence the content of which she believes, and when Bob accepts her assertion, he comes to share the belief that Alice expressed with her assertion” (10). For example, when I successfully assert that the bird flying overhead is a turkey vulture, I believe the content of the sentence “The bird flying overhead is a turkey vulture” and you come to believe the very same content that I believe.

Egan claims that a) adopting the belief transfer model of assertion and b) allowing for assertions to have centered content can lead to disaster. Consider the set of centered worlds centered on an individual whose pants are on fire. Egan calls this centered proposition PANTS. Note that for one to believe PANTS is for one to believe that his or her own pants are on fire. One main motivation for adopting centered content as the content of one’s beliefs is to distinguish my belief that my pants are on fire from my belief that Stephan’s pants are on fire. If the content of my assertion ‘My pants are on fire!’ is PANTS and the belief-transfer model of assertion is correct, then when I yell ‘My pants are on fire!’ you will come to believe what I believe (namely PANTS) and thereby you will believe that *your* pants are on fire. You will start to run around the room trying to extinguish your pants. But, as Egan notes, that is clearly not what happens when one asserts ‘My pants are on fire!’ So either an assertion of ‘My pants are on fire!’ does not have PANTS as its content or the belief transfer model of assertion is false.

Egan wishes to hold on to the belief transfer model of assertion. He concludes that an assertion of ‘My pants are on fire!’ does not have PANTS as its content. Yet, Egan claims that not *all* assertions containing centered content lead to disaster in the way that PANTS does. Egan considers the centered proposition that includes all and only those centered worlds centered on individuals near Sydney.¹² He calls this centered proposition SYDNEY. Egan notes that there are certain cases in which asserting SYDNEY does not lead to disaster. In fact, there are certain cases where it is useful to assert SYDNEY. He claims that, “In general, SYDNEY will be a potentially useful thing

¹² Egan admits to simplifying by ignoring the context-sensitivity of ‘near’ and by suppressing time-indices. I follow suit.

to assert when it's presupposed that the parties to the conversation are all close enough together that what's near one is also near the others." He considers a case in which Bond and Felix are piloting a mini-sub along the Australian coast. In the case Egan considers, it is presupposed by Bond and Felix that they are close together. He claims that we can represent the possible situations available to Bond and Felix in terms of centered worlds. In w_1 , Bond and Felix are both near Sydney and in w_2 Bond and Felix are both far from Sydney. Egan claims that the initial context set can be represented by the following set of centered worlds:

$$\{ \langle w_1, \text{Bond} \rangle, \langle w_1, \text{Felix} \rangle, \langle w_2, \text{Bond} \rangle, \langle w_2, \text{Felix} \rangle \}$$

If Bond successfully asserts SYDNEY, then all the centered worlds centered on an individual who is not near Sydney will be eliminated. The conversational context set after the assertion will be:

$$\{ \langle w_1, \text{Bond} \rangle, \langle w_1, \text{Felix} \rangle \}^{13}$$

As Egan notes, the fact that the post-assertion context set contains only worlds centered on individuals near Sydney is not only non-disastrous, but seems like a case of conversational progress. Egan concludes that whereas asserting PANTS leads to disaster, not all cases of asserting centered content are disastrous. In fact, in cases like the one described, SYDNEY is a potentially useful thing to assert.

Why do some cases of centered assertion lead to disaster, whereas others turn out to be potentially useful? Egan's proposal is that centered content is a potentially useful thing to assert when there is a *presupposition of relevant similarity* in effect. Recall that on Stalnaker's model of assertion, the content of an assertion interacts with the initial context set by eliminating all those worlds that are incompatible with the content. If we take the initial context set to be made up of centered worlds, then an assertion with centered content will eliminate all those centered worlds that are incompatible with the content. This is potentially disastrous because it might result in a post-assertion context set that correctly locates some members of the conversation but incorrectly locates other

¹³ Egan points out that in this example, "it also looks like the self-locating bit of the assertion isn't doing any work—we could have just asserted the possible worlds proposition that Sydney is near Bond and Felix. This is an unfortunate side effect of making the example simple" (18). Egan goes on to provide a case in which he claims self-locating propositions are necessary in order to explain the content of assertion (See "Better SYDNEY", 19-20). For the purposes of presenting Egan's account, I think the less complicated example will do.

members of the conversation. This is what happens when we take PANTS to be the content of an assertion of ‘My pants are on fire’. Taking PANTS to be the content of the assertion eliminates all those centered worlds but those centered on individuals with flaming pants. Such a post-assertion context set correctly locates the speaker with flaming pants, but incorrectly locates the listener without flaming pants.

However, if there is no danger of the post-assertion context set correctly locating some members of the conversation, yet incorrectly locating other members, then centered assertion is unproblematic and potentially useful. Egan says that a presupposition of similarity is in effect with respect to a proposition, *p*, just in case “within the context set, *p* doesn’t cut across conversations by including the correct locations of some, but not all, parties to some conversation” (18). In the case involving Bond and Felix navigating their mini-sub along the Australian coast, such a presupposition is in effect with respect to SYDNEY, since SYDNEY’s interaction with the initial context set will not incorrectly locate one without also incorrectly locating the other. Since Bond and Felix are ‘in the same boat’ with respect to SYDNEY (i.e. there are no centered worlds in the initial context set in which one conversational participant is near Sydney and the other is far), there is no potential for disaster. Egan’s proposal is that, in cases in which there is a presupposition of similarity with respect to *p* in effect, we can take *p* to be the content of assertion and also maintain the belief-transfer model of assertion. And so, it is possible to extend Stalnaker’s account of assertion to allow for assertions with centered content in those cases in which the presupposition of similarity is in effect.

4. Centered Assertion and Multi-Centered Worlds

I agree with Egan that assertions can have centered content; however I do not believe that Egan’s proposal for extending Stalnaker’s account of assertion succeeds. Egan’s account does not properly represent the conversational context set or the content of assertion. Representing the conversational context set as a set of centered worlds does not accommodate certain cases of centered assertion. Let us return to the example involving the duplicate prisoners. In section 2, I claimed that your fellow prisoner a) makes an assertion and b) the assertion does not eliminate possible *worlds* from the

context set. If Egan’s proposal succeeds in extending Stalnaker’s account of assertion to allow for centered content, it should be able to provide an account of your fellow prisoner’s assertion that you are located in the dungeon on the left. Let us use ‘L’ to refer to the prisoner on the left whose door leads to freedom. Let us use ‘R’ to refer to the prisoner on the right whose door leads to the gallows. Let us use ‘@’ to refer to the actual world. Prior to conversing with your fellow prisoner, you wonder which of the following centered worlds correctly locates you:

<@, L> or <@,R>

You hope that <@, L> correctly locates you and not <@, R>. Presumably, Egan would take the initial context set to be:

{<@, L>, <@,R>}

However, what could the content of your fellow prisoner’s assertion be? Take LEFT to be the centered worlds proposition containing all and only those worlds centered on the prisoner on the left. There is no presupposition of similarity with respect to LEFT in effect since LEFT correctly locates you, but incorrectly locates your fellow prisoner. Since there is no presupposition of similarity in effect with respect to LEFT, LEFT cannot be the content of your fellow prisoner’s assertion. Take RIGHT to be the centered worlds proposition containing all and only those worlds centered on the prisoner on the right. There is no presupposition of similarity with respect to RIGHT in effect since RIGHT correctly locates your fellow prisoner, but incorrectly locates you. I have argued that the content of your fellow prisoner’s assertion is centered, but there is no centered proposition, p, such that a) there is a presupposition of similarity with respect to p and b) p results in the correct post-assertion context set.

The inability of Egan’s proposed account to accommodate this case of centered assertion results from the fact that his account does not adequately represent the conversational context set in cases involving centered assertion. Egan takes the conversational context set to be a set of centered worlds, where centered worlds are represented as ordered pairs consisting of a world, w, and a designated individual within w. These centered worlds represent ways that an individual might be. However, recall that the role of the conversational context set is to represent what are taken to be “common ground” or “live options” by the conversational participants. The

conversational context set represents the various agreed upon ways the *conversational participants* might be. But no *individual* possibility (i.e. centered world construed as a world with a designated individual) can adequately represent a way the *conversational participants* collectively might be. In order to represent the common ground or live options for the conversational participants, the conversational context set should be made up of *joint* possibilities, rather than the individual possibilities that Egan supposes.

How do we represent joint possibilities rather than individual possibilities? In “Individuation by Acquaintance and by Stipulation” David Lewis provides a suggestion. He says, “Besides possible individuals, world-sized and smaller, there are still other possibilities: joint possibilities for two or more individuals. These are ordered pairs, triples, etc... or even infinite sequences of possible individuals, all from the same world” (Lewis 1983, 398). I suggest that rather than taking conversational context sets to be made up of worlds with a designated individual, we take them to be made up of worlds with a number of designated individuals. Let us call such constructions ‘multi-centered worlds’.¹⁴ A multi-centered world can be represented by an ordered pair consisting of a world *w*, and an *n*-tuple of designated individuals within *w*.¹⁵

¹⁴ It has been pointed out to me by Phillip Bricker that in Stalnaker’s recent book *Our Knowledge of the Internal World* (2008), Stalnaker also makes use of (what I call) multi-centered worlds in giving an account of common belief. In the appendix to Chapter 3, Stalnaker writes:

So, for example, we might model the common ground (presumed common beliefs) of a conversation between two amnesiacs trying to figure out who and where they are, and what time it is, by pooling the meager information that they each have. In general, the common ground that is determined by the iterative process will generate a representation that parallels the representation of an individual belief state; it will have the same structure, but with centered worlds with multiple individuals at their centers...The common ground can also be represented by a base world and a common belief set, but with a sequence of individuals (all of those in the relevant group) at the centers instead of a single individual. The sequence of individuals at the centers of the common belief worlds will represent where the members of the group mutually locate themselves and each other in the possible worlds compatible with their common beliefs (Stalnaker 2008, 73-74).

As noted in footnote 7, I think Stalnaker would reject my claim that some assertions involve the elimination of centered worlds (rather than uncentered worlds) from the context set. He holds that “ignorance or uncertainty about where one is in the world is always also ignorance or uncertainty about what world one is in” (2008, 70). But, to the extent that Stalnaker uses centered worlds in order to characterize belief states (See the Appendix to Chapter 3), he recognizes the need for multi-centered worlds.

¹⁵ Lewis represents joint possibilities as *n*-tuples of individuals all of whom are from the same world. I propose to represent joint possibilities as ordered pairs consisting of a world, *w*, and an *n*-tuple of individuals within *w*. Lewis has no need for designating a world in his representation of joint possibilities since he holds that all individuals are world-bound. In order to remain neutral on whether possible individuals are world-bound, I choose to represent joint possibilities as world-*n*-tuple pairs.

Suppose Tom and Sarah are hiking in the woods together. There are various ways that Tom and Sarah together might be. Tom and Sarah might be such that both are five miles from the nearest ranger station. Tom and Sarah might be such that Tom is due north of Sarah. Or they might be such that Sarah is due north of Tom. All these ways for them to be can be represented by a world, w , and an ordered pair of designated individuals in w . Given a world, w_1 , in which Sarah is north of Tom, we can represent the possibility according to which Sarah is north of Tom as $\langle w_1, \langle \text{Sarah}, \text{Tom} \rangle \rangle$ ¹⁶.

Oftentimes, possible worlds rather than multi-centered worlds are sufficient for representing the ways a number of individuals might be. But not all joint possibilities can be represented by possible worlds. Suppose that Tom and Sarah are hiking together and they have a digital device that displays a map of the forest they are in, along with dots representing the current location of all the hikers. They note that there are two pairs of dots, one in the west and one in the east. The pair in the west is next to a stream; so is the pair in the east. The pair in the west is next to a steep embankment; so is the pair in the east. In fact, Tom and Sarah are unable to tell whether they are the pair in the east or the pair in the west. Tom and Sarah do not lack information about what the world is like; the digital device tells them all they need to know about that.¹⁷ What they lack is information about their location within the world. Since Tom and Sarah know well enough what the world is like, possible worlds will not succeed in representing Tom and Sarah's live options. Rather their live options are represented by a set of multi-centered worlds. Call the two individuals who are actually in the east 'E1' and 'E2'. Call the two individuals who are actually in the west 'W1' and 'W2'. Tom and Sarah's live options may be represented by the set:

$$\{ \langle @, \langle E1, E2 \rangle \rangle, \langle @, \langle W1, W2 \rangle \rangle \}$$

Tom and Sarah's ignorance about their location is captured by the fact that they do not know which of these multi-centered worlds correctly locates them.

Perhaps we could have represented Tom and Sarah's live options in the above example with a set of singularly centered worlds. After all, Tom and Sarah are more or

¹⁶ If we take possible individuals to be worldbound, the ordered pair will not consist of Sarah and Tom but rather Sarah's counterpart in w_1 and Tom's counterpart in w_1 .

¹⁷ This claim is a bit quick. Most likely there is some qualitative difference between the hikers in the west and the hikers in the east. But there *need not* be any qualitative differences between the hikers in the east and the hikers in the west. Suppose they are hiking near the axis of a mirror symmetric universe.

less in the same predicament (they are hiking side by side) and so a set containing a world centered on a location in the east of the forest and a world centered on a location in the west of the forest might have adequately represented their ignorance about their present location. But multiple individuals *are not always in the same predicament*, and in such cases singularly centered worlds are unable to represent their joint possibilities. Consider the case of you and your fellow prisoner. Again, you know well enough what kind of world you live in. Yet there are two joint possibilities for you and your fellow prisoner. Call the individual who is actually on the left (the one whose door leads to freedom) 'L'. Call the individual who is actually on the right (the one whose door leads to the gallows) 'R'. There are two possibilities for the pair consisting of you and your fellow prisoner. One is that you are the prisoner on the left and he is the prisoner on the right. This possibility can be represented as $\langle @, \langle L, R \rangle \rangle$, the other is that you are the prisoner on the right and he is the prisoner on the left. This possibility can be represented as $\langle @, \langle R, L \rangle \rangle$. Because you and your fellow prisoner know well enough what the world is like, the possible ways you both might be cannot be given by a set of possible worlds. Because you and your fellow prisoner are in gravely different predicaments, the possible ways you both might be cannot be given by a set of worlds centered on an individual or a location in spacetime. Instead we can represent the ways you both might be with a set of multi-centered worlds.

Since multi-centered worlds represent ways for a number of individuals to be, rather than ways for a single individual to be, they are better suited to represent the common ground of conversational participants. Furthermore, taking the context set to be made up of multi-centered worlds (as opposed to singularly-centered worlds) provides a unified and successful account of centered assertion.

On Stalnaker's original account, it is uncentered propositions that are presupposed and that serve as the content of assertions. On the account being proposed, it is *multi-centered propositions* that are presupposed and that serve as the content of assertions. A multi-centered proposition is a set of multi-centered worlds. Another way we might think of multi-centered propositions is as properties of ordered n-tuples of individuals. In "Attitudes DeDicto and De Se", David Lewis notes that sets of centered worlds

correspond to properties of individuals.¹⁸ For any property F of an individual, there corresponds a set of all and only those centered worlds centered on an individual who has F. The property of *having-flaming-pants*, for example, corresponds to the set of all and only those centered worlds centered on an individual whose pants are on fire. For any set of centered worlds, there corresponds the property of being an individual on which at least one of those worlds is centered. Given the set of worlds centered on an individual with flaming pants, there corresponds the property of being an individual on which at least one of those worlds is centered. For the purposes of this paper, I will identify multi-centered propositions (sets of multi-centered worlds) with properties of ordered n-tuples. We can consider the various properties had by the ordered pair <Tom, Sarah>. This ordered pair, let us suppose, has the property of being such that its members are five miles from the nearest ranger station. It also has the property, let us suppose, of being such that its first member is due north of its second member. This latter property is identified with the set of multi-centered worlds in which each member consists of a world, w, with an ordered pair of designated individuals in w such that its first member is due north of its second member.

We can now give an account of presupposition and assertion as follows: Let us refer to the participants of a conversation as 'P1', 'P2', 'P3',... A member of the conversation presupposes a property F of <P1, P2, P3,...> just in case he or she takes the ordered n-tuple <P1, P2, P3,...> to have F, and he or she takes the other members of the conversation to take the ordered n-tuple <P1, P2, P3,...> to have F, and he or she takes the other conversational participants to take him or her to take the ordered n-tuple to have F, etc. A property F is presupposed by the conversation just in case all the members of the conversation presuppose F. A multi-centered world, w, is *compatible* with a property F of ordered n-tuples, just in case w is a member of the set identified with F. The conversational context set contains all and only those multi-centered worlds compatible with the properties that are presupposed by the conversation. The content of an assertion is a property of ordered n-tuples (or equivalently a multi-centered proposition). If the assertion is successful, then all the multi-centered worlds incompatible with the content of the assertion are eliminated from the conversational context set.

¹⁸ Lewis (1979, 147)

Recall Egan's observation that whereas taking the content of assertion to be centered is potentially useful in some cases (such as when Bond and Felix are navigating their mini-sub along the Australian coast), taking the content of assertion to be centered leads to disaster in other cases (such as when I produce an utterance of 'My pants are on fire'). Egan's response is, roughly, that assertions have centered content only when there is a presupposition of relevant similarity in effect. When Bond and Felix are navigating the mini-sub, there is such a presupposition in effect with respect to the centered proposition SYDNEY. When I produce an utterance of 'My pants are on fire' there is no such presupposition in effect with respect to the centered proposition PANTS.

I noted above that when two individuals are in the same predicament (such as when Tom and Sarah are hiking together or when Bond and Felix traveling in their mini-sub), then singularly-centered worlds can be used to represent their joint possibilities. However when two individuals are in different predicaments (such as when your door leads to freedom and your fellow prisoner's door does not, or when my pants catch fire and yours do not), then singularly-centered worlds are inadequate to represent joint possibilities of the conversational participants. It is the distinction between conversational participants in the same predicament and conversational participants in different predicaments that distinguishes between those cases that lead to disaster on Egan's account and those that do not. But it is wrong to describe what is going on by saying that sometimes centered assertion is potentially helpful and other times it leads to disaster. The difficulty is not with centered assertion versus uncentered assertion, but rather with the account of centered assertion that Egan proposes. Since Egan's account uses individual possibilities to represent the common ground of the conversational participants, his account can only allow for assertions to have centered content when the conversational participants are in the same predicament (i.e. same spatial location, same temporal location, same epistemic situation, etc.).

However, there exist assertions with centered content in which the conversational participants are not in the same predicament. The scenario involving you and your fellow prisoner provides one such case. Representing the live options of the conversational participants as individual possibilities does not succeed in providing an account of centered assertion in such cases. In order to accommodate content of assertion that is

both a) centered and b) involves conversational participants that are in dissimilar predicaments, we need to represent the live options available to conversational participants as joint possibilities rather than as individual possibilities.

The proposed account can provide a unified treatment of the various cases considered above. To consider Egan's example, suppose Bond produces an utterance of 'My pants are on fire!' after being hit in the leg with a flaming dart. Bond and Felix presuppose various properties of the ordered pair $\langle \text{Bond}, \text{Felix} \rangle$. Suppose one of their presuppositions is that the ordered pair $\langle \text{Bond}, \text{Felix} \rangle$ is such that both of its members are in Switzerland. The initial conversational context set will include all and only those multi-centered worlds compatible with the properties presupposed by the conversation. All the multi-centered worlds of the context set will be worlds of the form $\langle W, \langle x, y \rangle \rangle$ in which both x and y are in Switzerland. Let us suppose that prior to Bond's utterance, there are no presuppositions in effect as to whether anyone's pants are on fire. Some of the multi-centered worlds in the initial conversational context set are such that, in W , x 's pants are on fire and y 's are not. Other multi-centered worlds in the context set are such that y 's pants are on fire and x 's are not. Other multi-centered worlds in the context set are such that neither x 's nor y 's pants are on fire. And yet other multi-centered worlds in the context set are such that both x and y 's pants are on fire. When Bond utters 'My pants are on fire' the content of his utterance is a property of the pair $\langle \text{Bond}, \text{Felix} \rangle$. We can represent this property as the set of multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ in which x 's pants are on fire in W . If Bond's assertion is successful, all those multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ in which x 's pants are not on fire in W will be eliminated from the context set. The post-assertion context set includes only those multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ such that x 's pants are on fire in W . Bond and Felix reduce their joint possibilities by locating the ordered pair $\langle \text{Bond}, \text{Felix} \rangle$ among those multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ in which x 's pants are on fire in W . It does not follow from this fact that Felix comes to believe that *his* pants are on fire; rather he comes to believe something about the ordered pair $\langle \text{Bond}, \text{Felix} \rangle$: that its first member is such that his pants are on fire. We can thereby give an account of the content of Bond's assertion that is both centered and non-disastrous.

Consider the case in which Bond and Felix are navigating a mini-sub along the Australian coast and Bond utters, “Sydney is nearby.” Prior to Bond’s utterance, the initial context set contains multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ in which both x and y are near Sydney in W and in which both x and y are far from Sydney in W . Prior to Bond’s utterance, it is presupposed by both members of the conversation that they are in close spatial proximity. Therefore the initial context set does not include any multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ in which x is near Sydney and y is far from Sydney in W or in which x is far from Sydney and y is near Sydney in W . The content of Bond’s assertion is a property of the ordered pair $\langle \text{Bond}, \text{Felix} \rangle$. The property that serves as the content of Bond’s utterance is identified with a set of multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ in which x and y are near Sydney in W . All those multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ in which x and y are far from Sydney in W are eliminated from the context set. The only joint possibilities that remain for Bond and Felix are those in which both are near Sydney. Bond and Felix locate the ordered pair $\langle \text{Bond}, \text{Felix} \rangle$ among the set of multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ such that x and y are both near Sydney in W .

We can now also give a plausible account of the content of your fellow prisoner’s assertion. Let us refer to you as ‘P1’ and to your fellow prisoner as ‘P2’¹⁹ and let us continue to refer to the prisoner who is actually on the left as ‘L’ and the prisoner who is actually on the right as ‘R’. Prior to your fellow prisoner’s assertion, there are a number of properties of the ordered pair $\langle P1, P2 \rangle$ that are presupposed by the conversation. For example, it is presupposed of the pair $\langle P1, P2 \rangle$ that it is such that both members are imprisoned. It is also presupposed of the pair that both members are in duplicate dungeons. Prior to overhearing the guard, you and your fellow prisoner are ignorant about whether the ordered pair $\langle P1, P2 \rangle$ is such that the first member’s dungeon is on the right and the second member’s dungeon is on the left, or whether the ordered pair is such that the first member’s dungeon is on the left and the second member’s dungeon is on the right. In other words, you both fail to know whether the ordered pair $\langle P1, P2 \rangle$ is correctly located by

$\langle @, \langle L, R \rangle \rangle$

¹⁹ We could further suppose that you and your fellow prisoner agree to this naming convention.

or by

$\langle @, \langle R, L \rangle \rangle$ ²⁰

Both of these worlds are part of the initial conversational context set since both serve as joint possibilities for you and your fellow prisoner. When your fellow prisoner asserts ‘You are in the dungeon on the left’, the content of his assertion is identified with the multi-centered proposition containing all and only those multi-centered worlds of the form $\langle W, \langle x, y \rangle \rangle$ in which x is located in the dungeon on the left. This serves to eliminate from the context set the multi-centered world $\langle @, \langle R, L \rangle \rangle$. You and your fellow prisoner are able eliminate $\langle @, \langle R, L \rangle \rangle$ as one of the possible ways you both may be. In virtue of eliminating this joint possibility, you come to believe that you are the prisoner on the left and that your door leads to freedom.

The current proposal distinguishes between the content of the conversational common ground, on the one hand, and the content of individual conversational participant’s beliefs on the other hand.²¹ I have argued that the conversational common ground is most plausibly represented in terms of joint possibilities (multi-centered worlds) rather than individual possibilities (singularly-centered worlds). Nonetheless, I maintain that the content of an individual’s belief is best characterized in terms of singularly-centered worlds.²² A consequence of this is that the belief-transfer model of assertion is not upheld. The content of Bond’s *assertion* that his pants are on fire is a set of multi-centered worlds, however, the content of Bond’s *belief* that he, himself, has flaming pants is a set of singularly-centered worlds. That the belief-transfer model of assertion is not upheld strikes me as a consequence of the fact that different objects are needed to characterize the conversational common ground from those needed to characterize an individual’s beliefs (sets of multi-centered worlds versus sets of singularly-centered worlds).

Nonetheless there is a straightforward way in which the content of the conversational common ground affects the content of the individual conversational participants’ beliefs. The multi-centered worlds that make up the conversational context

²⁰ Compare Lewis’s treatment of the example involving him and his twin in (1983, 398).

²¹ Thanks to Antony Eagle, Oliver Pooley and an anonymous reviewer for pressing me on this issue.

²² Here and in what follows, when I discuss characterizing an individual’s beliefs, I have in mind a *narrow* characterization of belief.

set represent agreed-upon ways for the conversational participants to be. Suppose Bond wakes up in the mountains after being drugged by Blofeld. Looking around him, Bond is able to narrow down his present location to either the Pyrenees or the Swiss Alps. Bond radios back to M in London to apprise her of his situation. The set of singularly-centered worlds that characterizes Bond's belief includes a world that is centered on the Pyrenees and a world that is centered on the Swiss Alps. Bond takes each of these to be live options for his own whereabouts. After being filled in, M comes to take the Pyrenees and the Swiss Alps as live options for Bond's whereabouts. Since they both agree with respect to the live options for Bond's whereabouts, we can represent this bit of common ground in the conversational context set. Let us further suppose that Bond and M also both agree about M's present location: M believes that she, herself, is in London, and Bond believes of M that she is in London. We can then represent the various agreed upon ways for the ordered pair <Bond, M> to be as follows:

<@, <Swiss Alps, London>>

and

<@, <Pyrenees, London>>

Once M activates Bond's GPS tracking device, she asserts, "You are in the Pyrenees." The content of her assertion results in the elimination of <@, <Swiss Alps, London>> from the conversational context set. Given that one of the agreed upon ways for the conversational participants to be has been eliminated, Bond no longer takes the Swiss Alps to be one of his live options and thereby takes himself to be in the Pyrenees. The elimination of agreed-upon ways we both may be results in the elimination of ways that I might be, and so changes in the conversational context set result in changes in the content of my belief.

5. Conclusion

Recall Stalnaker's claim that, "To engage in conversation is, essentially, to distinguish among alternative possible ways things may be" (Stalnaker 1978, 322). I have pointed out that the "alternative possible ways things may be" are not always

alternative possible ways that the *world* may be. In addition to ways the world may be, there are also ways you and I may be within the world. If we accept this claim, then it seems clear that Stalnaker's account should be extended to make room for such possibilities. Furthermore, individual possibilities are inadequate for characterizing the common ground among conversational participants. If you and I are in different predicaments, and we both presuppose that we are in different predicaments, a successful account of assertion should allow us to distinguish among the various ways that we may be. This can only be done by including joint possibilities in our representation of the conversational context set and in our representation of the content of assertion.²³

²³ I would like to thank Phillip Bricker, Antony Eagle, Oliver Pooley, Brandt Van der Gaast and an anonymous reviewer for helpful comments on an earlier draft.

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