Representing knowledge

Peter van Elswyk, University of Wisconsin-Milwaukee

Penultimate draft · Forthcoming in *The Philosophical Review*

A speaker's use of a declarative sentence in a context has two effects: it expresses a proposition and represents the speaker as knowing that proposition. This essay is about how to explain the second effect. The standard explanation is act-based. A speaker is represented as knowing because their use of the declarative in a context tokens the act-type of assertion and assertions represent knowledge in what's asserted. I propose a semantic explanation on which declaratives covertly host a *know*-parenthetical. A speaker is thereby represented as knowing the proposition expressed because that is the semantic contribution of the parenthetical. I call this view parentheticalism and contend that it better explains knowledge representation than alternatives. As a consequence of outperforming assertoric explanations, parentheticalism opens the door to assertion's elimination from linguistic theorizing.

Keywords: knowledge representation · assertion · Moore's paradox · parenthetical verbs · use-conditional meaning

1 Introduction

The use of a declarative sentence in a context has two effects: it expresses a proposition and represents the speaker as knowing that proposition. The defectiveness of (1) and (2) illustrates the second effect.

(1) #I don't know that Mueller investigated, but he investigated.

(2) #Mueller investigated, but I don't know that.

Moore (1942, 1962), who first noted the defectiveness, attributed it to a conflict between what is stated and what is implied. As he saw it, the use of a declarative implies—in a sense of *imply* different from entailment—that the speaker knows the proposition expressed. Discourses (1) and (2) are thereby defective because

I am greatly indebted to Jeffrey King and Ernest Lepore. Thanks are also due to Jonathan Schaffer, Andy Egan, Liz Camp, Dan Harris, Herman Cappelen, Simon Charlow, Una Stojnić, Sarah Murray, Simon Goldstein, Diti Bhadra, Sam Carter, Nico Kirk-Giannini, and Joshua Spencer; to audiences at Rutgers University, New York University, University of Oslo, and University of Wisconsin-Milwaukee where ancestors of this paper were presented; and to the Editors and anonymous referees at this journal.

the stated content from one segment of the discourse contradicts the implied content from another segment.

Let's name the second effect the KNOWLEDGE REPRESENTATION EFFECT or KRE. These days, the standard explanation of KRE is act-based.[1] The use of a declarative constitutes an action. Under certain conditions, that action can token the act-type of assertion. Since an assertion represents the speaker performing it as knowing the proposition expressed by the declarative tokening it, assertoric uses of declaratives generate KRE.

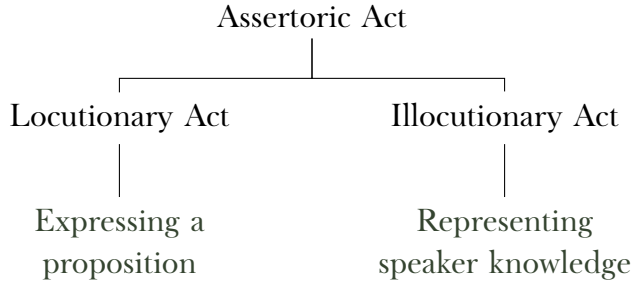

Figure 1: Division of labor

The standard explanation therefore divides explanatory labor. In the terminology of Austin (1962), linguistic actions factor into a LOCUTIONARY and an ILLOCUTIONARY ACT: the former is the performance of a meaningful sentence in a context, and the latter is a further act that has properties not shared with the locutionary act. Expressing a proposition is a locutionary act because a proposition is or is determined by a declarative's meaning in a context. However, KRE is attributed to an illocutionary act because it cannot be traced back to a declarative's meaning in a context.

This essay offers a semantic explanation of KRE loosely inspired by Moore's original diagnosis of his discourses. I call it PARENTHETICALISM because KRE is traced back to a declarative covertly hosting the verb *know* with a first-person subject in a parenthetical position. My proposal is that discourses like (1) and (2) are defective because the proposition contributed by the hidden parenthetical of a declarative in one segment of the discourse contradicts the proposition expressed by a declarative in another. A consequence of the view, if adopted, is that explanatory labor does not need to be divided between locutionary and illocutionary acts. Both effects are locutionary.

I begin by further motivating KRE (§2). With supporting data laid out, I discuss how to probatively explain KRE (§3). Then parentheticalism is proposed (§4-§5), and argued to be preferable to standard act-based explanations of KRE

[1] Consider the knowledge norm of assertion proposed by Williamson (2000). He is followed by Adler (2002), Blaauw (2012), Benton (2011, 2012, 2016a,b), DeRose (2002, 2009), Kelp (2016), Reynolds (2002), Sutton (2005), Schaffer (2008), Simion (2016), Turri (2010, 2011, 2013), and numerous others.

and a variety of semantic explanations (§6). I conclude with a brief discussion of what assertion may be needed for if it does not explain KRE (§7). I express optimism for the conclusion voiced by Cappelen (2011, 21) that "'assertion'... is not a category we need in order to explain any significant component of our linguistic practice."

2 Knowledge representation

Let's state KRE precisely.

> KNOWLEDGE REPRESENTATION EFFECT (KRE)
> For a speaker $\mathcal{S}$ and unqualified declarative d expressing a proposition p in a context c, $\mathcal{S}$'s use of d in c represents $\mathcal{S}$ as knowing p in c.

Represents in KRE is a placeholder term. Words like *expresses*, *indicates*, or *conveys* work just as well. It stands-in for an account of how the use of a declarative in a context is associated with a conversational participant accepting—after the declarative's use—that the speaker knows or takes herself to know the proposition expressed.

Unqualified is another term to highlight. Declaratives are qualified only if they contain epistemic vocabulary that hedges or conditions how a proposition is expressed. Throughout this essay, I dwell on parenthetical verbs such as the *think*-parenthetical in (3).

(3) Mueller investigated, I think.

Limiting KRE to unqualified declaratives makes explicit an often unstated assumption in the literature on assertion that qualified declaratives cannot token the act-type of assertion.[2] There is a good reason for this limit. Hooper (1975, 101) observes that "a parenthetical qualifies... by suspending the implication that the speaker knows the proposition to be true." It achieves this suspension effect by representing the speaker as occupying the position specified by the qualifying term.

(4) Mueller investigated, I think. But I don't know that.

Confirmation that a qualified declarative does not represent knowledge is that a sentence like (3) cannot be extended into a defective discourse like (1) or (2) by accompanying it with a denial of speaker knowledge. In (4), the speaker represents herself as thinking that Mueller investigated and that is consistent with not knowing as much.

[2] Williamson (2000), Adler (2002), and Garcia-Carpintero (2004) are notable exceptions.

The data that supports KRE comes in three categories. The first is CONVERSATIONAL DATA consisting of generalizations about how conversations unfold as turn-taking activities. The second is CLAUSAL DATA consisting of generalizations about the meaning or felicity of unqualified declaratives in a context. The third is NORMATIVE DATA consisting in generalizations about when a speaker is liable to censure or blame for using an unqualified declarative in a context. I motivate KRE by presenting some conversational and clausal data. I leave discussion of the normative data for another time. My presentation does not exhaust the data available because my primary aim is to illustrate KRE, an effect that is widely acknowledged.

2.1 Conversational data

Participants usually respond to the prior use of a declarative by accepting, rejecting, or challenging the proposition expressed. Polite challenges like (5B) request elaboration about the speaker's epistemic position and impolite challenges like (6B) are accusations.

(5) (A) Mueller investigated.
(B) Why do you believe that? / How do you know that?

(6) (A) Mueller investigated.
(B) You don't believe that! / You don't know that!

Polite challenges are insightful because of what they presuppose. *Why do you believe that?* presupposes that the speaker believes because ⌜why p?⌝ presupposes p (Bromberger 1966; Pietroski 2002). Likewise, *How do you know that?* presupposes that the speaker knows because ⌜how do you ϕ?⌝ presupposes the speaker ϕs. The presuppositions become transparent in answers: *I believe Mueller investigated because...* answers the first and *On the basis of..., I know that Mueller investigated* answers the second.

The presuppositions reveal that participants often accept that the speaker believes or knows even when challenging that speaker.[3] Since there are conversations where participants do not accept that the speaker believes or knows before the use of a declarative, the declarative's use is what causes that acceptance. KRE explains why a declarative's use has this effect. Knowledge requires belief. A participant therefore accepts that the speaker believes or knows because the

[3] OBJECTION: Kvanvig (2009) argues that challenge data proves too much and too little about what position is represented. Participants can challenge with reference to stronger or weaker positions like *Do you think that?*. REPLY: Turri (2010) offers a number of compelling replies. One important reply is that knowledge is special because it figures in all of the conversational data when many other epistemic positions do not. See van Elswyk (2018) for further discussion.

use of the declarative represented her as knowing and believing the proposition expressed (Unger 1975; Williamson 2000).

Some observe that speakers rarely respond to challenges by detailing how they meet the requirements for knowledge. Instead, speakers state their evidence. This observation is thought to provide evidence that knowledge is not represented.[4] However, the questions in (5B) and (6B) still presuppose that the speaker believes or knows.[5] An explanation is therefore still required for why a participant changes her presuppositions only after a declarative is used. KRE provides that explanation.

2.2 Clausal data

Circle back to Moorean discourses. They take either an OMISSIVE or COMMISSIVE FORM (Green and Williams 2007). Examples (7) and (8) are omissive because a proposition is expressed and a speaker disavows belief or knowledge in that proposition.

(7) #I don't believe/know that Mueller investigated, but he investigated.

(8) #Mueller investigated, but I don't believe/know that.

Commissive discourses are illustrated in (9) and (10). They are commissive in the sense that a proposition is expressed and speaker avows belief or knowledge in that proposition's negation.

(9) #Mueller investigated. But I believe/know that he did not.

(10) #I believe/know that Mueller did not investigate, but he did.

Each of the four discourses rings discordantly as if inconsistent. But not all are. Only the commissive form with an avowal of knowledge is. Given that *knows* presupposes its complement, discourses like (9) presuppose and express an inconsistency. The rest are consistent. Concerning the omissive forms, that Mueller investigated and that the speaker does not believe or know as much can both be true. Ditto for the commissive form with an avowal of belief. It can

[4] Lackey (2007, 2008), Kvanvig (2009), and McKinnon (2012) make this observation.

[5] QUESTION: What about the suggestion in McKinnon (2012) that the challenges are presuppositionless? REPLY: First, the initial evidence they have presuppositions remains. Second, the contrary evidence has alternative explanations. She notes, for example, that the speaker often demurs when a challenger doubles-down with *But do you know that?*. McKinnon's explanation of the demurral is that the presupposition is missing. An alternative explanation is that speakers demur as a way of deescalating. See Brown and Levinson (1987) on the pragmatics of politeness. Another alternative, given epistemic contextualism, is that focus on *knows* changes the relevant alternatives that need to be eliminated for knowledge. Then the speaker ceases to know in the new context.

be true that the speaker believes that Mueller did not investigate even though Mueller did investigate.

Whatever the variety, KRE explains the interpretive discord. The use of the declarative *Mueller investigated* represents the speaker as knowing in that context. So omissive forms with a disavowal of knowledge involve a contradiction between what is represented in one segment and what is expressed by the disavowal in another ($\mathcal{K}p \wedge \neg\mathcal{K}p$). Since knowledge requires belief, omissive forms with a disavowal of belief involve a contradiction between what is required by a representation in one segment and what is expressed by the disavowal ($\mathcal{B}p \wedge \neg\mathcal{B}p$). Commissive forms are explained differently. They express contradictory attitudes. When knowledge is avowed, the commissive form expresses that the speaker knows a proposition and its negation ($\mathcal{K}p \wedge \mathcal{K}\neg p$). With an avowal of belief, commissive forms similarly express belief in a proposition and its negation ($\mathcal{B}p \wedge \mathcal{B}\neg p$).[6]

Moorean discourses are not just defective to say. They are also defective to believe. Some follow Shoemaker (1995) to maintain that we do not need an explanation of Moorean speech because an explanation of why they are defective to believe is enough.[7] But Moorean speech requires independent explanation for two reasons. First, Moorean discourses are defective in a manner that is distinctively linguistic. Many discourses are irrational to believe but still felicitous to say such as outright contradictions or *All of the evidence indicates that Mueller investigated, but I refuse to believe that*. Second, Moorean discourses are an instance of a much wider linguistic phenomenon. As Black (1952, 26) first noted, discourses such as *Damn! But I have no heightened feelings* are similarly defective even though *damn* expresses a speaker's emotional state as opposed to her belief in a proposition.[8]

So far, we have focused on unqualified declaratives because they alone are regarded as having the power to be assertoric. But considering qualified and unqualified declaratives side-by-side furnishes important data about unqualified declaratives.

(11) Mueller investigated.

(12) Mueller investigated, I believe.

[6] QUESTION: What about alternative explanations of Moore discourses? Lackey (2008), Douven (2006, 2009), Kvanvig (2009, 2011), Goldberg (2015), and Fleisher (forthcoming) all opt for alternatives. REPLY: A complete discussion of alternatives is beyond this paper's scope. See McGlynn (2014) and Benton (2016b) for some discussion. Note that many alternatives attempt to assimilate defectiveness to irrationality or irrelevance. But discourses like *Mueller investigated and 2 plus 2 equals 6* can be irrational to believe and irrelevant to say without exhibiting the same interpretive discord of Moorean discourses.

[7] Replies to Shoemaker (1995) abound. See Albritton (1995), Rosenthal (1995), Larkin (1999), Atlas (2007), and Williams (2013). [8] See Searle and Vanderveken (1985) and Woods (2018) for related discussion.

(11) differs from (12) in that the speaker expresses that Mueller investigated with greater oomph. With KRE, the strength difference is readily explained. Unqualified declaratives represent the speaker as knowing whereas qualified declaratives represent the speaker has having whatever position is specified by the epistemic term (Benton and van Elswyk 2018). A position wherein a person has knowledge of a proposition is stronger than a position wherein a person has mere belief in that proposition. Therefore the strength of the position represented by unqualified declaratives is greater than that represented by qualified declaratives like (12).

The final data is related to qualification. Not all epistemic terms can be used to modify the strength with which a proposition is presented. Speakers cannot use a *know*-parenthetical to modify strength (Slote 1979; Rooryck 2001a; Benton 2011). For starters, *know*-parentheticals are usually infelicitous. (13) illustrates.

(13) #Mueller investigated, I know.

There are exceptions, however.[9] Suppose in the distant future two people are debating whether Mueller was merely rumored to have investigated. Their disagreement was then settled after watching video footage of him in court. The following exchange results.

(14) (A) Look! Mueller investigated.
(B) Mueller investigated, I know (, I know).

The *know*-parenthetical is now felicitous. And yet, it makes no difference to the strength with which the proposition that Mueller investigated is presented. (14B) is just as strong as (11). It is neither weaker like (12) nor stronger.[10] The explanation enabled by KRE is that the use of an unqualified declarative already represents knowledge. Whether felicitous or not, the *know*-parenthetical cannot alter the associated strength by specifying that the speaker occupies a different position.

[9] See Simons (2007), Benton (2011), Blaauw (2012), and McKinnon and Turri (2013). Not all exceptions claimed withstand scrutiny. Simons (2007, 1048) takes the *I know* in *I know from Rosenstein that Mueller investigated* to be a parenthetical because the main point of the declarative is the embedded clause. But this *I know* is incompatible with complement preposing—it is not movable to a sentence-medial or sentence-final position—and I take complement preposing to be a necessary condition on parentheticality.

[10] My characterization of the data differs from Benton (2011). He focuses on why *know*-parentheticals are infelicitous. He proposes they are redundant because the declarative is already associated with speaker knowledge at the illocutionary level. McKinnon and Turri (2013) and McGlynn (2014) object that Benton's explanation does not extend to *know*-parentheticals like (14B) that are felicitous but redundant. Framing the data in terms of why *know*-parentheticals cannot modify strength captures what is common to (13) and (14B) and does not mandate an illocutionary explanation.

3 Explaining knowledge representation

We saw four lines of data that KRE uniformly explains. Though alternative explanations may account for some of that data, no alternative covers all of the data as straightforwardly. Let's turn, then, to explaining KRE. The first question to ask is when it occurs.

> INTERFACE CONDITIONS QUESTION (ICQ)
> For any speaker S and declarative sentence d expressing a proposition p in a context c, under what conditions $\mathcal{C}$ does S's use of d in c generate KRE in c?

While an answer to ICQ identifies which declaratives have KRE in a context, an answer does not identify the source of KRE in a context. Accordingly, the next question about KRE seeks an explanation for whatever answer is given to the first question.

> INTERFACE EXPLANATION QUESTION (IEQ)
> For any speaker S and declarative sentence d expressing a proposition p in a context c, why does S's use of d in c generate KRE in c under conditions $\mathcal{C}$?

These are the INTERFACE QUESTIONS. We arrive at a complete view of KRE only after both are answered. To just answer ICQ is to say when but not why a declarative has KRE. It enables us to predict but not understand KRE. To just answer IEQ leaves us with less. We would be equipped to sketchily explain why a declarative has KRE if KRE is had, but powerless to predict KRE. Resolving the questions jointly is what is probative.

An answer to ICQ predicts when the use of a declarative in a context generates KRE. We can assess answers according to whether this prediction is accurate. That can be done by returning to the data. If an answer predicts KRE to occurs in a context c but instances of the supporting data do not occur in c, the answer overpredicts. If an answer similarly predicts that the KRE does not occur in c but instances do occur in c, the answer underpredicts.

I propose to use Moorean defectiveness in an omissive form as a guide to a prediction's accuracy. An omissive Moorean discourse decomposes into two components: a statement of p anchored to a perspective which has its knowledge represented, the STATEMENT COMPONENT, and a disavowal of speaker knowledge in p, the DISAVOWAL COMPONENT. Not all discourses comprised of these two components produce interpretive discord.[11] I identify three additional conditions for defectiveness.

[11] Focusing on discourses already helps to individuate the distinctiveness of Moorean

We can extract the first two conditions from the observation that the disavowal of speaker knowledge in our initial examples is in the present tense and indicative mood. Change either feature of the disavowal and the discord disappears. The pair (15) and (16) show how moving to the past tense eliminates absurdity.

(15) #Mueller investigated, but I do not know that. PRESENT

(16) Mueller investigated, but I did not know that. PAST

The first conjunct represents the speaker as knowing that Mueller investigated. That is consistent with the second conjunct stating that the speaker did not know that Mueller investigated at a prior time. Similarly, (18) and (19) illustrate how the subjunctive mood eliminates the absurdity. The *would* in (19) ensures that the world(s) at which the second conjunct is evaluated is different from the world(s) at which the first is evaluated.

(17) #Mueller investigated, but I do not know that. INDICATIVE

(18) Mueller investigated, but I would not know that. SUBJUNCTIVE

Accordingly, discourses exhibit omissive Moorean absurdity only if they satisfy the schemata ⌜*p*, but I do not know *p*⌝ or ⌜I do not know *p*, but *p*⌝. However, satisfying either schema is still not sufficient. Tense and verbal mood have the benefit of being overt. Neither can be changed in the disavowal component without failing to instantiate the schema. But there are features of the discourse that can be changed in subtler ways.

The statement component can be anchored in a context to a perspective other than the speaker's. Wittgenstein (1980, 80) gives the example of a railway announcer required to report the arrival of a train they do not believe will arrive. The announcer can report the arrival time and follow that announcement with *Personally, I do not believe that* without defect. A natural explanation is that the report of the train's arrival does not represent their own epistemic position—it represents the railway's. The use of the adverb *personally* marks the contrast between positions. No absurdity results because there is no contradiction in the railway representing themselves as knowing via their spokesperson and the announcer disavowing their personal knowledge.

---

defectiveness. It explains why speakers toggling between multiple conversations can felicitously say *Mueller investigated* in one conversation and *I do not know that Mueller investigated* in another (Hinchman 2013). By toggling, the speaker never builds a discourse in the same conversation. It also explains why sentences like *I falsely believe that p* can have an interpretation as *p and I believe non-p* and not be defective (Sorensen 1988; Crimmins 1992). They are not defective because they are not discourses.

Let's remain neutral on how the use of a declarative in a context is anchored to a perspective. However we explain anchoring, Moorean absurdity requires that the perspective be the same across the discourse. I call this the ANCHOR IDENTITY CONDITION.[12] In other words, the perspective to which the statement component is anchored in a context c needs to be identical to the perspective to which the disavowal component is anchored in c. Since the disavowal component contains the first-person indexical *I*, we can put the anchor identity condition thusly: the perspective of the statement component in c needs to be identical to what *I* denotes in c.

Let's say that the use of a declarative d in a context c with content p is M-EXTENDIBLE if and only if an infelicitous discourse can be formed with d in c that instantiates the schema ⌜p, but I do not know p⌝ or ⌜I do not know p, but p⌝ while the anchor identity condition obtains. M-extendibility is a proxy for KRE because Moorean absurdity is a byproduct of KRE. Answers to ICQ can therefore be assessed according to whether they correctly predict M-extendibility. An answer overpredicts if and only if the answer predicts the presence of KRE in c but the declarative is not M-extendible in c. Likewise, an answer underpredicts if and only if the answer predicts the absence of KRE but the declarative is still M-extendible.

4 Parentheticalism

With KRE motivated and the requirements for its explanation detailed, my explanation can be offered. I contend that the use of an unqualified declarative in a context represents the speaker as knowing the proposition expressed because the declarative contains a *know*-parenthetical specifying as much that is typically zero expressed. KRE is therefore a semantic phenomenon. I call this view PARENTHETICALISM.

Parentheticals kick up a cloud of tricky questions at the syntax-semantics interface. However, parentheticalism does not require a particular syntax or semantics. A *know*-parenthetical has whatever syntax overt parentheticals have and contributes to the meaning of a declarative in whatever way other parentheticals contribute.[13] My proposal—to borrow a term from Fara (2015)—

[12] The condition helps to explain other non-absurd discourses instantiating the schemata. For example, Fileva and Brakel (forthcoming) present discourses like *The Grand Canyon Skywalk is safe, but I do not believe it is safe* where the statement component is anchored to a third-person perspective but the disavowal component reflects the first-person. I suspect it also helps with the case discussed by Coliva (2015) where a speaker utters a discourse that expresses a previously unconscious belief.

[13] Since I take parentheticals to be English's way of compensating for a lack of grammaticized evidentials, the syntax I prefer is one on which parentheticals occupy an evidential or evidential-like projection. See Rooryck (2001a,b), Giorgi (2010), and Hedberg and Elouazizi (2015) for

piggybacks. Assessing parentheticalism does not require us to have a full picture of the syntax and semantics of English parentheticals. The view only requires us to know enough to clarify its commitments as an account of how unqualified declaratives generate KRE.

I do not, then, give answers to every question kicked up. I stick to answering those that are either raised exclusively by parentheticalism or which help elucidate it. To that end, I first consider the semantic behavior of parenthetical (§4.1). Then I turn to their syntactic behavior (§4.2). Both discussions clarify parentheticalism's commitments.

4.1 Semantics

An expressed proposition is AT-ISSUE when it is the declarative's primary contribution in a context. Being at-issue contrasts with being NOT-AT-ISSUE which is the status content has when it is expressed but backgrounded in the context. Familiar examples of not-at-issue content include presuppositions and conventional implicatures. Important to parentheticalism is that parenthetical verbs express an extra not-at-issue proposition as opposed to contributing to a single at-issue proposition.

Drawing on diagnostics from Tonhauser (2012), I provide two reasons why parentheticals express a secondary proposition. The first reason concerns propositional anaphora. On the assumption that at-issue content alone is available for anaphora, anaphoric expressions can be used to diagnose issuehood based on what is felicitously targetable. If only one at-issue proposition about the speaker's epistemic position is expressed by a declarative with a parenthetical as opposed to two propositions with the parenthetical contributing a not-at-issue proposition, only the proposition about the speaker's position should be available to subsequent anaphors. But that is not so.

(19) (A) Mueller investigated, I think.
(B) That's false. (#You don't.)

(20) (A) Mueller investigated, I think.
(B) I don't think so. (#You don't.)

(19) and (20) show that the preferred interpretation of each anaphor is where it denotes the proposition that Mueller investigated as opposed to the proposition that the speaker thinks as much. That is why it is infelicitous to elaborate either response with *You don't*. That elaboration is felicitous only if the anaphors in

relevant discussion of their syntax. Ifantidou (1993), Simons (2007), and Murray (2017) also suggest that parentheticals have evidential-like meanings. Note that languages with evidentials frequently have a zero expressed evidential akin to what I am proposing English has with a *know*-parenthetical.

(19B) and (20B) denote the proposition about the speaker's position. These discourses support the conclusions that two propositions are expressed and that the parenthetical's contribution is not-at-issue.

The second reason for the parenthetical's not-at-issue status concerns projection. If a parenthetical contributes a not-at-issue proposition distinct from the at-issue proposition, that not-at-issue proposition should project. A proposition *p* projects if and only if *p* is conveyed even when the expression contributing *p* appears under the scope of an operator that stops entailments. Accordingly, projectability is diagnosed by putting the relevant expression under the scope of negation or modal expressions like *it is possible that*.[14] For example, consider the appositive *who is a former FBI director*.

(21) It is false that Mueller, who is a former director of the FBI, investigated.

(22) It is possible (that) Mueller, who is a former director of the FBI, investigated.

The appositive contributes that Mueller is a former director and that proposition is conveyed even though it appears under the scope of entailment-canceling operators. The proposition contributed by a parenthetical similarly projects around the operators.

(23) (A) It is false (that) I think that Mueller investigated.
(B) It is false, I think, that Mueller investigated.

(24) (A) It is possible (that) I think that Mueller investigated.
(B) It is possible, I think, that Mueller investigated.

For comparison, the first sentence in each pair contains a first-person subject and attitude verb in a non-parenthetical position. Consider (23). The *It is false that* in (23A) predicates falsity of a proposition to which *I think* is the subject and verb. (23B) is noticeably different. What is claimed to be false has nothing to do with what the speaker thinks. That Mueller investigated is claimed to be false. What explains the difference is that the parenthetical in (23B) contributes a not-at-issue proposition that projects. (24B) is similar.

The previous data serves double-duty. In addition to showing the not-at-issue status of parentheticals, the data illustrates how they take wide-scope. The natural interpretation of the parenthetical in (23B) is that the speaker thinks that it is false that Mueller investigated. Likewise, the interpretation of

[14] Projectability is also diagnosed by placing the content-contributing expressions in questions and the antecedents of conditionals (Chierchia and McConnell-Ginet 2000). But parentheticals are infelicitous in questions and the antecedents of conditionals as I shortly discuss in §4.2.

the parenthetical in (24B) is that the speaker thinks it is possible that Mueller investigated. Such interpretations are only accessible if the parentheticals interpreted higher than negation and modals.

Parentheticalism is therefore committed to the covert *know*-parenthetical contributing a not-at-issue proposition that is distinct from the at-issue proposition expressed by the declarative in a context. In part due to its not-at-issue status, the secondary proposition will not be available for anaphora and will dodge entailment-canceling operators to take wide-scope. Though this commitment does not immediately impact how the interface questions are answers, §6 will show how it is central to parentheticalism outperforming alternative explanations.

4.2 Syntax

Since parentheticalism piggybacks the syntax of *know*-parentheticals on the syntax of other parentheticals, it is only committed to *I know* being covert in unqualified declarative that occur within syntactic configurations that already tolerate parentheticals. Put differently, parentheticalism abides by the following constraint.

> OVERT CONSTRAINT
> For any syntactic configuration $\mathcal{S}$, unqualified declarative d, and qualified declarative d', If d is dependent in $\mathcal{S}$, then d represents the speaker as knowing the at-issue proposition of d if and only if $\mathcal{S}$ is still grammatical were d substituted with d'.

The overt constraint provides an easy way to discern when a *know*-parenthetical is hiding. If we cannot use another parenthetical to qualify the dependent but apparently unqualified declarative, the configuration is not one capable of hosting a covert *know*-parenthetical.

To clarify the configurations parentheticalism is committed to hosting a *know*-parenthetical, let's consider common ones. Borrowing a distinction from Murray (2017), two questions about embedding should be distinguished: whether the parenthetical can embed in a particular position and whether the parenthetical is interpreted in that position if it embeds. We begin with conditionals. (25) and (26) shows that a parenthetical cannot embed in an antecedent but can embed in a consequent.

(25) #If Mueller, I think, was appointed, then Mueller investigated.

(26) If Mueller was appointed, then, I think, Mueller investigated.

That a parenthetical can qualify the consequent is not a surprise given that it is the main clause (Bhatt and Pancheva 2006). But the parenthetical is not

interpreted in the consequent. It receives an interpretation in (26) where it scopes over the conditional.

Turn next to coordinating structures. For each, I investigate whether their dependent declaratives can be qualified simultaneously and individually. Start off with conjunction.

(27) Mueller investigated, I think, and Trump worried, I heard.

(28) Mueller investigated, I think, and Trump worried.

(29) Mueller investigated and Trump worried, I heard.

A parenthetical plays nice with conjunction in every which way. Just one conjunct can be qualified or both can be. When one conjunct is qualified, the sentence is occasionally ambiguous between a reading where the parenthetical takes wide-scope over the entire conjunction or where it qualifies just the conjunct where it appears. However, disjunctions are a different story. Fewer embeddings are grammatical.

(30) #Mueller investigated, I think, or Trump worried, I heard.

(31) #Mueller investigated, I think, or Trump worried.

(32) Mueller investigated or Trump worried, I heard.

Displayed by (30) is that parentheticals cannot simultaneously qualify disjuncts. That sentence crashes. The failure of individual disjuncts being qualified is shown in the remaining examples. (32) is acceptable only because the sentence-final position encourages a wide-scope interpretation where the parenthetical is not interpreted where it appears. In comparison, (31) is middling at best because the parenthetical's sentence-medial position encourages an embedded reading that is not available, but the parenthetical can be interpreted by some as taking wide-scope over the disjunction.

The final configurations I consider involve a declarative being a complement to either a verb or noun. Both configurations are illustrated with sentence-medial and final parentheticals.

(33) Rosenstein believes, I think, that Mueller investigated.

(34) Rosenstein believes that Mueller investigated, I think.

(35) Rosenstein has the idea that Mueller, I think, investigated.

(36) Rosenstein has the idea that Mueller investigated, I think.

The examples exhibit uniformity. A parenthetical can appear in a verbal or nominal complement, but it is not interpreted in a complement. In (33) through

(36), the parenthetical takes wide-scope over the main clause concerning the beliefs or ideas of Rosenstein.

A generalization jumps out. Unless the parenthetical qualifies a dependent declarative that is located in a conjunction, the parenthetical is always interpreted wide-scope if it can syntactically embed.

CONFIGURATION	POSITION	EMBEDDED	IN SITU	WIDE-SCOPE
Conditional	Antecedent			
	Consequent	✓		✓
Conjunction	Both conjuncts	✓	✓	
	First conjunct	✓	✓	
	Second conjunct	✓	✓	
Disjunction	Both disjuncts			
	First disjunct			✓
	Second disjunct	✓		✓
Complements	Verbal	✓		✓
	Nominal	✓		✓

Figure 2: Embedded parentheticals

What this means for parentheticalism is significant. As per the overt constraint, KRE is not predicted for declaratives in the antecedents of conditionals, disjunctions, or complement clauses. The only declaratives predicted to be M-extendible are unqualified declaratives and conjunctions where the conjuncts are not already qualified.[15]

5 Knowledge representation explained

The interface condition question or ICQ concerned the conditions under which the use of a declarative represents the speaker as knowing the at-issue proposition. The answer parentheticalism offers is that the use of a declarative represents the speaker as knowing when the declarative hosts a *know*-parenthetical. The interface explanation question or IEQ concerned why those were the conditions. The related answer is that KRE is generated as a matter of linguistic convention. It is part of the grammar of English that a *know*-parenthetical surfaces exclusively in conjunctions and independent declaratives.

[15] This distribution is an important reason why the covert element is a verb as opposed to an *as*-parenthetical like *as I believe* or *as far as I know*. Unlike parenthetical verbs, *as*-parentheticals embed. Entertain *If Mueller was, as I believe, appointed, then Mueller investigated* and *Suppose, as far as I know, that Mueller investigated*. The competing proposal that an unqualified declarative hosts an *as*-parenthetical therefore overpredicts KRE. For related discussion of overpredicting KRE for embedded declaratives, see §5.3 and §6.3.

To see parentheticalism in action, let's return to the data from §2. As a reminder, parentheticalism is not committed to a particular semantics or syntax for parentheticals. Any semantics which explains their not-at-issue status and any syntax which accounts for their distribution will do. Nevertheless, the view's explanatory power is best showcased by adopting a particular semantics. Accordingly, I start by offering a new semantics for parentheticals that is inspired by the view originally in Urmson (1952, 495) that "They themselves have not... any descriptive sense but rather function as signals guiding the hearer to a proper appreciation of the statement." Then I show how parentheticalism explains the data.

5.1 A multidimensional semantics

A semantic theory is MULTIDIMENSIONAL when a sentence in a context can have multiple semantic values. I offer a multidimensional semantics for parentheticals that draws on a proposal inaugurated by Kaplan (1999) and formally refined by Gutzmann (2015). Central to this semantics is a distinction between terms that are DESCRIPTIVE and EXPRESSIVE.

Descriptive expressions contribute to truth-conditions. Truth-conditional meaning or t-meaning—given a dedicated assignment function $\|\cdot\|^t$—is familiarly represented as a set of worlds in which a sentence is true. The t-meaning of *Mueller investigated* is found below.

(37) $\|\text{Mueller investigated}\|^t = \{w \mid \text{Mueller investigated in } w\}$

A t-meaning is assessed for its truth. For example, *Mueller investigated* is true at a world w if and only if $w \in \|\text{Mueller investigated}\|^t$.

Expressives contribute to use-conditions where use-conditional meaning or u-meaning—given its own assignment function $\|\cdot\|^c$—is representable as a set of contexts (Kaplan 1999). Let's assume with the Kaplan of an earlier essay that a context is a tuple $\langle c_S, c_w, \ldots \rangle$ consisting of objects such as c_S, the speaker of the context, and c_w, the world of the context.

(38) $\|\text{Ouch}\|^u = \{c \mid c_S \text{ is in pain in } c_w\}$

Then an expressive like *ouch* has a u-meaning along the lines of (38). It is the set of contexts in which the speaker of that context is pained in the world of the context. A u-meaning is assessed for felicity as opposed to truth. But felicity is truth-like in its nature. An instance of *Ouch* is felicitous at a context c if and only if $c \in \|\text{Ouch}\|^u$.

I propose that parentheticals have u-meaning. They place conditions on the felicity of a declarative's use in a context as opposed to its truth in that context.

To illustrate, consider a *think*-parenthetical. It has the semantics stated in (39) where it is a function from the proposition associated with the main clause to a u-meaning requiring the speaker of the context to think that proposition in the world of that context.

(39) $\|\text{I think}\|^u = \lambda p.\{c \mid c_S \text{ thinks } p \text{ in } c_w\}$

Such a semantics delivers. Not-at-issue status falls out of parentheticals having u-meaning. Their contribution projects because entailment-canceling operators apply only to t-meaning. Likewise, the contribution does not license anaphors like the demonstrative in *That's false!* because anaphors only target propositions from the t-meaning dimension.

The semantics also facilitates an simple account of representation. When detailing KRE in §2, I said that *represent* was a placeholder. It stands-in for a more nuanced account of how the use of a declarative in a context is associated with a conversational participant accepting that the speaker knows or takes herself to know the proposition expressed. On the view proposed, representation is an effect of u-meaning. Declaratives represent by hosting parentheticals with u-meaning requiring the speaker to occupy the position specified.

There is a wrinkle. We want a fully compositional semantics where the first-person subject and verb constituting the parenthetical have u-meaning because of their syntactic position. We do not want to posit widespread ambiguity for every such verb between a t-meaning and u-meaning.[16] So far, the semantics does not deliver that. To iron out the wrinkle, let us introduce an operator '⊗' that sits in the parenthetical position and converts the expression into one with u-meaning.

(40) $\|\otimes \text{ I think}\|^u = \lambda p.\{c \mid c_S \text{ thinks } p \text{ in } c_w\}$

We can think of ⊗ as a dimension-shifter. It takes an expression from one dimension and shuttles it to another. It is therefore a kind of SHUNTING OPERATOR that is commonplace in multidimensional theories that enable compositional interaction between dimensions (McCready 2010; Gutzmann 2015). I save the technical details for the Appendix. What matters is that having u-meaning is compositionally derived.

Deploying this semantics in service of parentheticalism, we arrive at the multidimensional meaning below for an unqualified declarative like *Mueller investigated*. Nothing new or extravagant happens at the level of the declarative's t-meaning.

[16] Attempts to explain parentheticals as FORCE-INDICATORS like Searle and Vanderveken (1985) have this problem because there is no way to convert an expression that contributes to truth-conditions to one that indicates force through semantic composition. See van Elswyk (2018) for discussion.

(41) $\|\text{Mueller investigated}\|^t = \{w \mid \text{Mueller investigated in } w\}$

(42) $\|\text{Mueller investigated}\|^u = \{c \mid c_S \text{ knows that Mueller investigated in } c_w\}$

However, the declarative now has a *u*-meaning because of its covert *know*-parenthetical. An unqualified declarative in a context is therefore assessable for truth and felicity.

5.2 Conversational data

With a semantics in hand, turn to the challenge data. A participant can challenge either content contributed by a declarative. To challenge *t*-meaning is to challenge its truth. To challenge *u*-meaning is to challenge its felicity. An illustration is below.

(43) (A) Mueller investigated, I think.
(B) That's false! TRUTH CHALLENGE
$\rightsquigarrow$ The actual world $w_@$ is not an element of $\{w \mid$ Mueller investigated in $w\}$

(44) (A) Mueller investigated, I think.
(B) You don't think that! FELICITY CHALLENGE
$\rightsquigarrow$ The context of use $c_@$ is not an element of $\{c \mid c_S$ thinks that Mueller investigated in $c_w\}$

Unqualified declaratives license the same challenges. By containing a covert *know*-parenthetical, they have *u*-meaning representing the speaker as knowing the *t*-meaning.

(45) (A) Mueller investigated.
(B) That's false! TRUTH CHALLENGE
$\rightsquigarrow$ The actual world $w_@$ is not an element of $\{w \mid$ Mueller investigated in $w\}$

(46) (A) Mueller investigated.
(B) You don't know that! FELICITY CHALLENGE
$\rightsquigarrow$ The context of use $c_@$ is not an element of $\{c \mid c_S$ knows that Mueller investigated in $c_w\}$

Since the declaratives have the same *t*-meaning, (43) and (45) enable the same truth challenge. The felicity challenges are different because the *u*-meaning is different in each. Given parentheticalism, challenge data reflects that participants often doubt whether the felicity condition imposed by the *know*-parenthetical is satisfied.

5.3 Clausal data

Next up is the clausal data. While exploring how to understand how expressives impact entailment, Kaplan (1999) drew a distinction between meaning and SEMANTIC INFORMATION. For him, two expressions could have different meanings in the object-language, but still possess the same semantic information in the meta-language. As an example he considers *ouch* versus *I am pain*. They do not have the same meaning—they are not synonymous. But, still, they carry the same semantic information.

Gutzmann (2015, 24) provides a way to see this informational sameness clearly.[17] The following lowers a u-meaning into a t-meaning by filling in the contextual parameters.

> LOWERING
> If $c = \langle c_S, c_h, c_w \rangle$ is a context and $CS = \{\langle x, y, z\rangle\colon R(x, y, z)\}$ is a set of contexts given by a relation R, then $\Downarrow_c = \{w'\colon R(c_S, c_h, w'\}$.

Applying $\Downarrow_c(\,\cdot\,)$, the lowering operator, to $\|\cdot\|^u$ thereby produces a set of worlds from u-meaning. Applied to Kaplan's example of *ouch* and *I am pain* where c_S is $\mathcal{S}$, we get (47) and (48).

(47) $\|\text{I am in pain}\|^t = \{w \mid \mathcal{S} \text{ is in pain in } w\}$

(48) $\Downarrow_c\|\text{ouch}\|^u = \{w \mid \mathcal{S} \text{ is in pain in } w\}$

Lowering elucidates how meaning in the t-dimension and u-dimension can carry the same information while not being synonymous. An upshot is that a lowered u-meaning can now enter into entailment relations. For example, $\|\text{I am in pain}\|^t$ and $\Downarrow_c\|\text{ouch}\|^u$ are now mutually entailing.

In the multidimensional semantics proposed, the defectiveness of Moorean discourses is owed to what happens across semantic dimensions. Consider first omissive discourses. They are owed a cross-dimensional contradiction. The u-meaning of the first part of the discourse contradicts both the t-meaning and u-meaning of the second part. Attend to the $\Downarrow_c$-meaning of (49) alongside the t-meaning of (50).

(49) Mueller investigated.
$\|(49)\|^t = \{w \mid \text{Mueller investigated in } w\}$
$\Downarrow_c\|(49)\|^u = \{w \mid \mathcal{S} \text{ knows Mueller investigated in } w\}$

[17] Another way is given by Predelli (2013, 68). He introduces the notion of SETTLEMENT. Translated into our current terminology, an expression e settles a declarative d if and only if, for every context c such that $c \in \|e\|^u$, $\|d\|^t$ is true in c. As result, an expression like *ouch* settles a declarative like *I am in pain*. Compare to (47) and (48).

(50) But I do not know that.
$\|(50)\|^t = \{w \mid \mathcal{S}$ does not know Mueller investigated in $w\}$
$\Downarrow_c\|(50)\|^u = \{w \mid \mathcal{S}$ knows $\mathcal{S}$ does not know Mueller investigated in $w\}$

They entail the falsity of one another. The second contradiction takes the same route. Since *know* is semifactive, the $\Downarrow_c$-meaning of (50) entails its t-meaning. So the $\Downarrow_c$-meanings of (49) and (50) contradict.

What about the commissive form? It is defective by the light of KRE because a speaker characterizes herself as being in an irrational position where they believe or know a proposition and its negation. Parentheticalism's spin is that a speaker cross-dimensionally states that they are in that position. For example, form a discourse with (49) and (51).

(51) But I believe that Mueller did not investigated.
$\|(51)\|^t = \{w \mid \mathcal{S}$ believes Mueller did not investigate in $w\}$
$\Downarrow_c\|(51)\|^u = \{w \mid \mathcal{S}$ knows $\mathcal{S}$ believes Mueller did not investigate in $w\}$

The $\Downarrow_c$-meaning of (49) entails that the speaker believes that Mueller investigated. But conjoining that with the t-meaning of (51) or the $\Downarrow_c$-meaning of (51), which entails its t-meaning, states an irrational position.[18]

In explaining Moorean discourses, the syntactic component to parentheticalism is just as important as its semantic component. Yalcin (2007, 986–987) observed that Moorean conjunctions are surprisingly felicitous when the conjunctions appear in the antecedents of conditionals or as complements to verbs like *suppose*.

(52) Suppose that Mueller investigated, but I don't know that.

(53) If Mueller investigated and I don't know that, then there is something I don't know.

[18] QUESTION: Garcia-Carpintero (forthcoming) notes that Moorean discourses have presuppositional analogs where a speaker disavows knowledge of a presupposition introduced by the statement component. A referee asks whether parentheticalism explains the analogs. REPLY: I have two initial responses. First, explanations of the analogs come for free on certain theories of presuppositions. With a SATISFACTION THEORY, for example, presuppositions already have to be common ground (Stalnaker 1973; Heim 1982; Beaver 2001). If the attitude required for grounding is belief or knowledge, disavowing knowledge of presuppositions is tantamount to $\mathcal{K}p \wedge \neg\mathcal{K}p$ or $\mathcal{K}p \wedge \neg\mathcal{B}p$. Second, parentheticalism does plausibly extend. When a sentence has a presupposition r, embedding that sentence under an attitude licenses the inference that the attitude holder believes r (Kartunnen 1974; Heim 1992). Parentheticals are no exception. By positing a covert attitude that takes wide-scope (§4.1), parentheticalism predicts that unqualified declaratives license the inference that the speaker believes the presuppositions. Since knowledge requires belief, disavowing knowledge of presuppositions yields a contradiction between the disavowal and the inference.

Parentheticalism predicts this distribution with the overt constraint. Since *know*-parentheticals are only present in conjunctions and independent declaratives, they are absent everywhere else. *Mueller investigated* is not therefore M-extendible in the antecedents of conditionals or the complements to *suppose* because the parenthetical is not present.

After Moorean discourses, additional clausal data involved the strength difference between qualified and unqualified declaratives. Parentheticalism explains the contrast in line with the strength difference between *know* and other verbs like *believe*, *think*, *heard*, *guess*, and *suppose*. Unlike the verbs we have considered, *know* is semifactive.[19] It presupposes its complement. Since unqualified declaratives host a *know*-parenthetical, unqualified declarative are stronger because they host the stronger verb. When a declarative hosts a different parenthetical, knowledge is not represented because the *know*-parenthetical is replaced by another parenthetical.

The final clausal data to explain is why *know*-parentheticals cannot be used like other parentheticals to modify the position represented. The explanation offered by parentheticalism has a straightforward and an elaborate component. The straightforward part is that declaratives with overt *know*-parentheticals differ from unqualified declaratives only in that parenthetical is overt. No strength difference results because the same verb is hosted in a parenthetical position. But parentheticalism should also help us understand why overt *know*-parentheticals are typically infelicitous.

And it does with some elaboration. All of the instances in which an overt *know*-parenthetical is felicitous are ones where the parenthetical is modified. I offer two examples. Benton (2011, 685, *fn.2*) observes that the addition of adverbial modifiers like *now* enables a *know*-parenthetical to be felicitous. (54) demonstrates.

(54) Mueller investigated, I now know.

Likewise, the other instances noted in the literature all require the *know*-

[19] OBJECTION: Since *know* is semifactive, parentheticalism predicts that the at-issue proposition of an unqualified declarative is presupposed. On the assumption that presuppositions are mutually accepted, parentheticalism bizarrely predicts that the at-issue content of an unqualified declarative is already accepted. REPLY: The first prediction is not unique to parentheticalism. It is an instance of a puzzling generalization first noted by Hooper (1975). Whenever semifactives appear parenthetically, the at-issue content of the declarative is identical with the semifactive's presupposition. To add to the puzzle, semifactives are typically used parenthetically when their presuppositions are informative. Consider the contexts in which *Mueller investigated, I realize(d)* or *Mueller investigated, I discovered* are felicitous. So declaratives with semifactive parentheticals always presuppose their at-issue content, but rarely have at-issue content that is mutually accepted. Accordingly, parentheticalism does not make the bizarre prediction. *Know*-parentheticals have informative presuppositions just like other semifactive parentheticals. Many questions about semifactive parentheticals undoubtedly linger. Fortunately, parentheticalism is entitled to piggyback on their answers.

parenthetical to receive contrastive focus like our earlier example in §2.2.[20] A boring yet important fact about covert elements is that they are difficult to modify. For intonational modification like contrastive focus, the difficulty is obvious. Modification requires pronunciation and covert elements are unpronounced. Other varieties of modification are not much different. You cannot modify what you cannot see or hear. The explanation I offer is that *know*-parentheticals are governed by the following grammatical rule.

> OVERT-FOR-MODIFICATION RULE
> When *know* occupies the parenthetical position, the subject and verb must be zero expressed unless the verb is modified.[21]

The rule explains the distribution we have observed. Declaratives with an overt *know*-parenthetical that does not receive intonational nor adverbial modification are infelicitous for breaking the overt-for-modification rule. However, declaratives such as (55) and (14B) are not infelicitous because they satisfy the exception of the rule.

6 Alternative explanations

Parentheticalism explains KRE as a semantic phenomenon. But is it preferable to rival explanations? To motivate that it is, I first compare parentheticalism to the traditional answer citing the act-type of assertion. That answer requires the declaratives that token assertion to be demarcated from those that do not. The demarcation is then what answers ICQ by predicting which declaratives are M-extendible. I consider two common demarcations (§6.1-6.2). Then I compare parentheticalism to semantics alternatives that do not posit a covert *know*-parenthetical (§6.3-6.5). Compared to each alternative, parentheticalism is argued to supply a better explanation.

[20] See Simons (2007), Blaauw (2012), and McKinnon and Turri (2013). Blaauw suggests that the focused parenthetical reinforces by representing the speaker as knowing that they know *p*. But he bases this analysis on the mistaken assumption that parentheticals contribute to truth-conditions. An improved explanation appeals directly to contrastive focus. Suppose focus evokes alternatives that contrast conveys are eliminated. If alternatives to *know*-parentheticals are parentheticals specifying weaker epistemic positions, focus reinforces by conveying that the speaker does not occupy these positions. Simons (2007, 1048) gestures at a similar explanation.

[21] Note that parentheticals are limited in what modification the grammar allows them to receive. See Hooper (1975) and Rooryck (2001a,b) for discussion. Accordingly, the overt-for-modification rule is implicitly restricted to modification that is grammatically permitted for parentheticals.

6.1 Intentional demarcation

Many demarcate the mere use of a declarative from an assertion with speaker intention.[22] The account of assertion in Bach and Harnish (1979, 42) illustrates:

> In uttering e, [a speaker] $\mathcal{S}$ asserts that p if $\mathcal{S}$ expresses: (i) the belief that p and (ii) the intention that [a hearer] $\mathcal{H}$ believes p.

Though their account makes belief as opposed to knowledge the position expressed in a context, their account is easily modified to accommodate KRE. We merely adjust condition (i) to state that knowledge is the attitude expressed through a speaker's act of assertion.

A benefit of an intention-based demarcation is the ease with which it answers IEQ: KRE is caused in a context when a speaker's belief and intention are expressed. But the informativeness of an intentional answer to both questions then depends on an account of the expression-relation. Some never explain the expression-relation. Others give a psychological account. Bach and Harnish (1979, 17) take this route. Their account explains the expression-relation as a reflexive intention or $\mathcal{R}$-INTENTION. An $\mathcal{R}$-intention is an intention had by a speaker to get the hearer to respond in a particular way by means of recognizing the speaker's intention to get the hearer to respond in that way.

An intention-based demarcation underpredicts KRE. The view of Bach and Harnish (1979) still illustrates. Without difficulty, we can imagine situations where one or more of the two intentions required in conditions (i) and (ii) are absent. Maybe the speaker has the first intention but not the second because they want to state for the record what their position is inside a room of people who vehemently disagree. Or, maybe they have neither intention. Borrowing an example from Alston (2000, 48), perhaps the speaker does not have hearer-directed intentions because their job is to announce train departures in a busy station where people are rapidly coming and going. In these settings, KRE is predicted to not occur because an assertion did not happen. And yet, the declaratives are M-extendible. By not underpredicting, parentheticalism therefore outperforms any explanation of KRE that demarcates declaratives with speaker intention.

[22] See Grice (1989), Strawson (1964), Schiffer (1972), Bach and Harnish (1979), and Loar (1981) for such a view. When the going gets tough, Davidson (1984), Searle and Vanderveken (1985), and Dummett (1996) fall back on intention. They merit mention because they are often misinterpreted as maintaining that the link between a declarative and the act-type of assertion is entirely conventional.

6.2 Default demarcation

Another demarcation holds that a subset of declaratives can or do token assertion by means of some default.[23] Accordingly, the use of a declarative in a context generates KRE unless the default is overridden. The attraction of a default-based demarcation is that one can add to their open-ended list of default overrides anytime an instance of a declarative that does not generate KRE is encountered in the conversational wild.

Default demarcations have two defects. The first is that it does not provide a predictive answer to ICQ as long as the list of overrides remains open-ended. For those who explain KRE as a byproduct of assertion, the default demarcation therefore ensures that the locutionary/illocutionary interface remains mysterious. Each use of a declarative needs to be individually considered to decide whether it belongs on the override list. By not answering ICQ, IEQ remains unanswered as well. We cannot inquire about the source of KRE under certain conditions if those conditions have not been identified. In contrast, parentheticalism dispels mystery. It predicts without any exceptions that only unqualified declaratives and conjunctions thereof generate KRE in a context.

The second problem is that many methods for adding a declarative to the list of exceptions are unreliable at demarcating declaratives generating KRE from those that do not. It is instructive to consider examples. Jary (2010, 161) assumes that it is essential to assertion that the speaker is presented as the source of evidence. As a result, he maintains that an assertion is not tokened when "witnessing the act itself either is, or is presented as, sufficient grounds for accepting the proposition expressed." He provides (55) and (56) as examples. However, each is M-extendible.

(55) I hereby offer my resignation.

(56) On my word, I'll never speak to Mark again.

(57) #I hereby offer my resignation. But I do not know that I hereby offer my resignation.

(58) #On my word, I'll never speak to Mark again. But I do not know that, on my word, I'll never speak to Mark again.

Another example is Garcia-Carpintero (2004, 153-154). He provides a short list of overrides that includes declaratives prefaced with *once upon a time*, *let me*

[23] Consider Williamson (2000, 258) with his frequently quoted line: "In natural language, the default use of declarative sentences is to make assertions." Among others, he is followed by Williams (2002), Weiner (2005), and Garcia-Carpintero (2004). Roberts (2018, 349) articulates a variant where assertion is linked to the declarative clause by a norm that can be "overridden when other general pragmatic considerations or other linguistic conventions indicate a different intended interpretation."

remind you of the following, or *therefore*, declaratives used in a classroom during a test, and declaratives with parentheticals. What appears to motivate inclusion on his list are judgments about what act-type is tokened. Declaratives prefaced with *Let me remind you of the following*, for example, appear to be acts of reminding as opposed to acts of asserting. Though qualified declaratives belong on such a list, the declaratives remain M-extendible for every other override mentioned. Consider (59) through (61).

(59) #Let me remind you of the following: Mueller investigated. But I do not know that Mueller investigated.

(60) #Once upon a time, Mueller investigated. But I do not know that.[24]

(61) #Either Mueller or Comey investigated. Comey did not. Therefore Mueller investigated. But I do not know that Mueller investigated.

The extra linguistic material even boosts the felt absurdity in (61). Since the speaker is represented as knowing that Mueller investigated on the basis of an argument by elimination where each premise they also represented themselves as knowing, the disavowal conflicts with the knowledge represented in the argument's conclusion and premises.

A final example of a commonly held override involves elicited declaratives. Sometimes speakers are prompted to use an unqualified declarative in a context where there is no expectation that they know the proposition expressed. Instead, they are requested to occupy a weaker epistemic position. Exchanges (62) and (63) illustrate.

(62) (A) If you had to guess, did Mueller investigate?
(B) ?Mueller investigated.

(63) (A) Did Mueller investigate, do you think?
(B) ?Mueller investigated.

Adding elicited declaratives to the open-ended list is an intuitive suggestion, especially when the position requested corresponds to a traditional speech act-type like guessing. However, what is intuitive does not always track when KRE is generated. Both elicited declaratives are M-extendible.

[24] A non-absurd interpretation of (60) is available if the anchor identity condition is violated. If the speaker is breaking from their perspective as the narrator to tell the audience what they know in another perspective, (60) can be felicitous. Discourses like these are known as FREE INDIRECT DISCOURSES. For more on how such discourses shift the meanings of context-sensitive expressions like *I*, see Schlenker (2004) and Sharvit (2008).

(64) (A) If you had to guess, did Mueller investigate?
(B) #Mueller investigated. But I don't know that.

(65) (A) Did Mueller investigate, do you think?
(B) #Mueller investigated. But I don't know that.

Additionally, many of my informants volunteered that the initial unqualified declaratives in (62B) and (63B) are dispreferred. This is why I annotated them with a '?'. What is preferred is that the elicited declarative be qualified to specify the position requested like (66B) and (67B).

(66) (A) If you had to guess, did Mueller investigate?
(B) I guess that Mueller investigated.

(67) (A) Did Mueller investigate, do you think?
(B) Mueller, I think, investigated.

Such a preference is easily explained by parentheticalism. Since the unqualified declaratives in (62B) and (63B) represent the speaker as knowing, the speaker is not fulfilling the request to answer the question with a weaker position. Only declaratives hosting the matching parenthetical do.[25]

Though there are undoubtedly other overrides to consider, I take these six to be representative. Parentheticalism better explains KRE than an assertoric explanation that demarcates with a default by fully resolving the interface questions and by not relying on a case-by-case method for predicting KRE that is unreliable.

6.3 Mood alternative

Let's turn to semantic explanations that do not posit a *know*-parenthetical. Sentences sort into clausal types that are individuated differently from one language to the next. We can theorize about what instances of a type have in common by hypothesizing that there is a dedicated MOOD MORPHEME that appears in every sentence of that type. The place to slot these morphemes into a sentence is somewhere in the LEFT PERIPHERY, the region in a syntactic tree that, for a declarative, mediates how an underlying proposition relates to a broader discourse or a bigger clause in which the declarative is embedded as a constituent

[25] Such a preference is to be expected if parentheticals are English's way of compensating for a lack of evidentials as I suggested in *fn.*13. Some languages with evidentials allow polar interrogatives like *Did Mueller investigate?* to host an evidential. Instead of being anchored to the speaker's source of evidence, evidentials in polar interrogatives are anchored to the addressee's (Speas and Tenny 2003). The semantic effect, described by Murray (2017, 44), is that "the evidential indicates the expected source of evidence for the requested answer." This is what the preference reflects. For a syntax of interrogative parentheticals like *do you think?* where they occupy an evidential projection, see Haddican et al. (2014).

(Rizzi 1997). Let's therefore assume that a declarative clause contains a mood morpheme.

What is the meaning of this morpheme? Some might suggest that the semantic contribution of the morpheme in a context is KRE. But this suggestion is a non-starter. A reason why Frege (1879, 1892) distinguished illocutionary force and content was that declaratives can be dependent clauses in a variety of syntactic configurations. Sentences (68) through (71) illustrate. Each contains a dependent occurrence of *(that) Mueller investigated*. None represent the speaker as knowing as much.[26] A mood-based alternative therefore overpredicts the presence of KRE for dependent declaratives.

(68) I do not know that Mueller investigated.

(69) Suppose that Mueller investigated.

(70) If Mueller investigated, then Comey did not.

(71) Either Mueller investigated or Mueller didn't investigate.

To drive the point home, consider (68). It should be a contradiction given the mood-based alternative. The mood morpheme in the dependent declarative would convey that the speaker knows and that would contradict the proposition expressed by the independent declarative that the speaker does not know. But it does not ring contradictory.

Parentheticalism does not overpredict. Kept on target by the overt constraint, it predicts that KRE is absent from the dependent declaratives in (68) through (71). In response to an overprediction problem, some who opt for a mood-based explanation of assertoric force stipulate that the element responsible for force disappears in dependent declaratives.[27] A defender of the mood-based alternative might follow suit. But stipulation fails to answer IEQ. Without independent evidence corroborating that the mood morpheme is missing in the examples, no theory-neutral explanation is available. In contrast, parentheticalism can answer IEQ by citing distribution data.

6.4 Performative alternative

The Performative Hypothesis or PH attempted to explain away speech acts by positing a covert performative verb in the main clause of every declarative (Ross 1970; Sadock 1974). According to PH, declaratives like *Mueller investigated* are elliptical for *I (hereby) say/assert that Mueller investigated*. Act-types like assertion

[26] Geach (1965) calls this THE FREGE POINT. See Stenius (1967), Searle (1969), Hare (1970), Dummett (1973), Zimmerman (1980), and Pendlebury (1986) for early discussion. See Green (2000) and Starr (2014) for more recent discussion. [27] For example, see Bierwisch (1980) and Krifka (2001).

were no longer regarded as necessary, given PH, because the grammar did the explanatory work instead.

The hypothesis is worth mentioning because it has two problems that reappear for proposals I discuss shortly. The first is a well-known problem (Lycan and Boër 1980; Levinson 1983). (73) but not (72) can be true when nobody investigated. By regarding (72) as elliptical for (73), PH cannot explain the difference in meaning.

(72) Mueller investigated.

(73) I say that Mueller investigated.

The second problem is new and involves M-extendibility. A declarative with a performative verb like *say* is not M-extendible. But, as we have seen, unqualified declaratives are.

(74) I say that Mueller investigated. But I don't know that.

Therefore PH is ill-suited to facilitate the elimination of speech act-types from linguistic theorizing. The failure to assign proper meanings is generally fatal. When it comes to eliminating the assertion, PH is useless because it bizarrely predicts that no unqualified declarative is M-extendible.

Though PH is accepted by few, many posit a covert assert operator. The motivation is often the same: a linguistic phenomenon is being explained that is easier to account for in an embedded environment than an unembedded environment. To ease explanation, the unembedded is assimilated to the embedded by positing a covert operator.[28] The view of Hacquard (2006, 2010) illustrates. To explain the difference between epistemic and root modals, she makes modals relative to an event and has a sentence host a variety of event binders. Then the difference between modal flavors is a product of which event binder restricts a modal. In handling epistemic modals not embedded under an attitude, she assumes that the left periphery possesses an additional syntactic projection representing the speech event. That projection hosts an assert operator as the topmost event binder. According to Hacquard (2010, 103), the assert operator influences the at-issue proposition expressed by a declarative such that she glosses an unqualified declarative like *Mueller investigated* as *Mueller investigated in all of the speaker's doxastic alternatives*.

An assert operator inherits the problems of PH. An initial choice is what it takes to be a doxastic alternative. Many who posit the operator waffle on whether

[28] Kratzer and Shimoyama (2002), Chierchia (2006), and Alonso-Ovalle and Menéndez-Benito (2010) make this maneuver in explaining the semantics and pragmatics of indefinite descriptions. Similarly, Hacquard (2006, 2010) does in explaining the semantics of epistemic and root modals.

being an alternative requires knowledge or mere belief. If it requires mere belief, then no unqualified declarative is predicted to be M-extendible. As (75) makes clear, there is nothing defective about disavowing knowledge of what one merely believes.

(75) I believe that Mueller investigated. But I don't know that.

Let's assume that being a doxastic alternative requires knowledge. Then an unqualified declarative can generate KRE. But now the assert operator does so at the expense of assigning accurate meanings. Though the factivity of knowledge ensures that *p* is true if the speaker knows *p*, the speaker can fail to know *p* while *p* is true. Presume whatever condition on knowledge you like. That condition can fail to obtain while *p* remains true.

Parentheticalism sails past both problems. The first problem is avoided because the semantic contribution of parentheticals is not-at-issue. In the multidimensional semantics proposed, the not-at-issue status results from the fact that they only have *u*-meaning. Unlike the assert operator, parentheticals can never alter the at-issue proposition expressed. The second problem is solved because the covert element is a *know*-parenthetical as opposed to a weak assert operator requiring mere belief.

Maybe a way around the inherited problems can be found. Even so, parentheticalism remains preferable. First, the operator's distribution needs to be identified for ICQ to be answered. Absent an identification that handles embedding like (68) through (71) without stipulation, parentheticalism outperforms. Second, the assert operator has no overt form in English. It is an entirely theoretical posit that complicates the syntax of the left periphery. Parentheticalism is different. A *know*-parenthetical is not a theoretical posit. It can be overt. Beyond what the syntax of parentheticals already demands, no extra complications are required either.

Let's take a step back and recall the Austinian distinction between the locutionary and illocutionary levels of a linguistic action. Assertion is what allegedly happens at the illocutionary level. However, operators are components of a sentence's compositional semantics that contribute to the content expressed by that sentence in a context. Accordingly, operators only make a difference at the locutionary level. Assert operators are thus a category mistake. What is illocutionary is not semantic, and what is semantic is not illocutionary. A charitable reframing of assert operators is that they are placeholders. The left periphery is taken to host an element that explains data like KRE, which is traditionally thought to require an illocutionary explanation. However, we need more than a placeholder to answer the interface questions. Parentheticalism provides what is required.

6.5 Epistemic alternative

It is occasionally hypothesized that unqualified declaratives host a covert epistemic modal. Though this hypothesis is not advanced to explain KRE, one may wonder whether the hypothesized modal can serve double-duty by playing the role it was initially slated for and explaining KRE too.[29] The final alternative fits this description. It starts with a proposal that posits a covert modal and amends that proposal to explain KRE.

To illustrate, consider a recent proposal by Giannakidou and Mari (2018). They aim to explain how two epistemic modals can have a unified interpretation in declaratives like *Mueller probably must have investigated* as opposed to an interpretation where the higher modal embeds the lower. A component of their proposal is that auxiliary modals like *must* are accompanied by a higher projection contributing an element $\mathcal{O}$. This element is often covert and specifies the speaker's confidence towards the proposition in a modal's scope. Their proposal can be amended with the assumption that $\mathcal{O}$ is present in a declarative even when a modal is not. Then $\mathcal{O}$ would specify the speaker's confidence in the proposition that is the declarative's meaning in a context, and might be available to explain KRE.

Another component of their proposal is that the adverb *probably* is the overt realization of $\mathcal{O}$. This extra commitment enables Giannakidou and Mari (2018, 649) to explain the unified interpretation of two modals by assigning the same meanings to *Mueller probably must have investigated* and *Mueller must have investigated*. They have a unified interpretation because the overt *probably* does not make a contribution that is not already made by $\mathcal{O}$ covertly. Amending their proposal with the assumption $\mathcal{O}$ is present in unqualified declaratives yields a similar consequence. *Mueller probably investigated* and *Mueller investigated* become equivalent with $\mathcal{O}$ just being covert in the latter.

This consequence ensures that the amendation faces many problems. The first few mirror the problems of PH. First, the meanings of two different declaratives are mistakenly equated. *Mueller investigated* and *Mueller probably investigated* are plainly different in meanings. Second, the presence of KRE is underpredicted. Declaratives with an overt *probably* are not M-extendible.

(76) Mueller probably investigated. But I don't know that.

The suggestion that $\mathcal{O}$ explains KRE therefore misfires by underpredicting which declaratives generate KRE. Third, even if the suggestion that $\mathcal{O}$ generates KRE does

[29] I thank a referee for this suggestion. Giannakidou and Mari (2018) and Kratzer (1986) hypothesize as much. Kratzer maintains that the main clause of a declarative like *If Rosenstein appointed him, Mueller investigated* hosts a covert epistemic modal like *must* that gets restricted by the *if*-clause. That covert modal might be available to explain KRE. Note that neither suggestion is the stated view of the author(s) whose proposal it is based upon.

not underpredict, it would overpredict because epistemic modals like *probably* can appear in dependent declaratives. To illustrate, focus on attitude verbs for which the embedding of epistemic modals is well-studied (Anand and Hacquard 2013).

(77) Suppose that Mueller probably investigated.

If $\mathcal{O}$ realized as *probably* was KRE's source, (77) would represent the speaker as knowing that Mueller investigated. But it does not.

Though my focus has been on a particular proposal that posited a covert modal and how that modal could serve double-duty, the problems identified generalize. Epistemic modals differ from parentheticals in that they can contribute to the at-issue content of a declarative in a context.[30] Any modal explanation of KRE therefore risks mispredicting the at-issue meaning of an unqualified declarative. Unless the modal is one that entails the proposition in its scope, a modal explanation will underpredict KRE because the modal is too weak to render a declarative M-extendible. Finally, a modal explanation is fated to overpredict, if it does not underpredict, because modals surfaces in dependent declaratives that do not generate KRE. Since these problems are version of the same problems faced by performative and mood-based explanations of KRE, parentheticalism outperforms a modal alternative for the reasons already provided.

7 Without assertion?

A consequence of parentheticalism is that explanatory labor does not need to be divided between a theory of meaning and a theory of action. That parentheticalism provides a unified, semantic explanation is made clear by the multidimensional semantics. A multidimensional semantics, in the words of Kaplan (1999, 18), "extend[s]... formal model-theoretic semantics to" phenomena "that have been regarded as falling outside semantics." To translate back into Austinian terminology, we can now distinguish between two locutionary acts: the $\mathcal{T}$-MEANING ACT and the $\mathcal{U}$-MEANING ACT.

[30] Their at-issue status is clearest in two situations. First, modals can be outscoped by tense and quantifiers (von Fintel and Gillies 2007; Swanson 2010). When outscoped, the modal is always at-issue. Second, the modal is at-issue whenever the question under discussion is about the speaker's epistemic position. See the Mastermind case in von Fintel and Gillies (2007) for an example. The diagnostics of Tonhauser (2012) readily confirm the modal is at-issue in these situations.

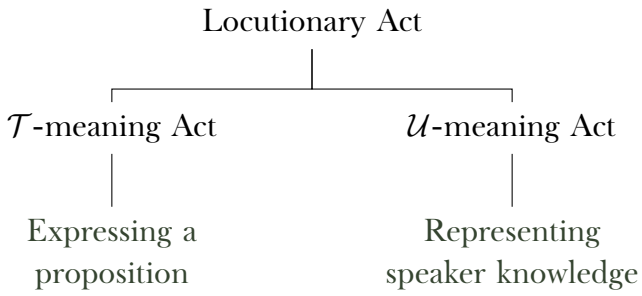

Figure 3: Labor divided differently

Parentheticalism locates the two effects in different locutionary acts. Accordingly, no illocutionary act need apply for the job. KRE traces back to a declarative's meaning in a context.

Though I have presented parentheticalism as an explanation of KRE, the hypothesis generalizes to other alleged representation effects. For example, many maintain that it is belief as opposed knowledge that the use of a declarative represents in a context.[31] The reasons given in §6 for why a covert parenthetical better explains KRE than act-based or semantic alternatives apply to belief representation as well. The difference is that it is a covert *believe*-parenthetical doing the explanatory work. In this way, parentheticalism plausibly outperforms alternative explanations of position representation regardless of what position is represented.

Is assertion now eliminable? Not yet. Assertion may be needed to explain more than how a KRE is generated. A complete argument for elimination needs to yield the conclusion that there is no phenomena that that act-type must explain. The arguments for eliminativism given by Cappelen (2011, 2018) are incomplete in this regard. This essay has not provided a complete argument either. Nevertheless, let me conclude by expressing optimism about eliminativism's prospects.

Three jobs potentially remain for assertion. First, there are acts performed with non-declaratives that are allegedly assertions (*e.g.* indirection, rhetorical questions, subsentential utterances, gestures). Parentheticalism does not extend straightforwardly to these acts. Assertion may be required to explain why declaratives and non-declaratives alike can perform the same action. However, I am optimistic that a divide-and-conquer strategy can be taken to show either that a particular non-declarative does not generate KRE or, if it does, that the effect can be explained locutionarily.[32]

[31] See Frege (1892), Austin (1962), Searle (1969), Bach and Harnish (1979), Grice (1989), McDowell (1980), Davidson (1984), Brandom (1994), Alston (2000), Williams (2002), Owens (2006), Green (2013), and Hindriks (2007).

[32] In the literature, only rhetorical questions or figurative language are mentioned as examples of indirection (Garcia-Carpintero 2016). The latter are indirections only if one assumes that a

Next, there is normative data consisting in generalizations about when a speaker is liable to censure or blame after using an unqualified declarative. As a linguistic hypothesis, parentheticalism is ill-equipped. But, again, I am optimistic that we can get by without assertion. Any explanatory limitation of a hypothesis can be overcome by supplementation. So parentheticalism can always be paired with an additional account of how speakers incur liability.[33] There could be an epistemic norm governing both qualified and unqualified declaratives alike that requires speakers to occupy the position represented. Applied to unqualified declaratives, this norm would be almost indistinguishable from a knowledge norm on assertion.

Finally, there are declaratives in other languages that generate KRE and this essay only developed parentheticalism to account for KRE in English. However, the hypothesis plausibly applies elsewhere. Consider Italian. Italian declaratives are unqualified or qualified with parenthetical verbs that behave similarly to English parentheticals. They cannot embed, they weaken the strength with which a proposition is expressed, and *know*-parentheticals are usually infelicitous (Giorgi 2010). Adjusting for the relevant differences, parentheticalism may apply to Italian complete with the overt-for-modification rule. Nevertheless, parentheticalism fails to extend to some languages. Languages lacking parentheticals are an obvious example. Assuming the act-type of assertion can be tokened in any language, assertion might therefore remain necessary to explain KRE where parentheticalism cannot. This is a possibility. Another possibility to consider is that the grammar of such a language enables a different semantic explanation of KRE.[34]

A theme running through the preceding is that parentheticalism facilitates assertion's elimination from linguistic theorizing only in concert with other hypotheses. Some will see this as a limitation of the alternative approach that

proposition with figurative content is expressed after a proposition with literal content. However, that assumption is a minority view (Stern 2000; Bezuidenhout 2001; Wearing 2006; Camp 2006; Carston 2012). Most explanations for why rhetorical questions have assertion-like effects are already semantics (Han 2002; van Rooy 2003). Subsentential utterances can either be regarded as elliptical for a full declarative (Merchant 2001, 2004), or pragmatically enriched into the content of one (Stainton 1995, 2006). The added twist required by parentheticalism is that the elided declarative hosts the *know*-parenthetical, or the enriched meaning is multidimensional as if it contained one. Finally, gestures can be given a multidimensional semantics wherein they express a proposition and require speaker knowledge (van Elswyk 2018).

[33] Cappelen (2011) and Pagin (2016) make related suggestions.

[34] Languages with evidentials are a prime candidate. Evidentials in declaratives contribute a not-at-issue proposition specifying the speaker's source of evidence for the at-issue proposition. Specifying a direct source is interpreted as stronger than an indirect source like hearsay (Willett 1988; Aikhenvald 2004). Differences thereby result in which declaratives are M-extendible. Surveying existing fieldwork, Murray (2017) notes that every known direct and inferential evidential is M-extendible. However, evidentials specifying hearsay are not. It is therefore plausible that stronger evidentials represent knowledge as part of their meaning.

parentheticalism exemplifies. I encourage that it be regarded as an invitation. For awhile, assertion has been the one-stop-shop for explaining data surrounding what the use of an unqualified declarative does in a context. It is time, I believe, to explore an alternative approach to theorizing that divides the data to better explain the data.

A Appendix

A.1 Multidimensional $\mathcal{L}_{\text{TU}}$

The system $\mathcal{L}_{\text{TU}}$ is owed to Gutzmann (2015) and builds upon the multidimensional semantic theories of Kaplan (1999), Potts (2004), and McCready (2010). In what follows, I offer a truncated exposition. The types of $\mathcal{L}_{\text{TU}}$ are the usual suspects plus use-conditional types.

(A1) TRUTH-CONDITIONAL TYPES
(A) e, t, s are basic truth-conditional types.
(B) If σ and τ are truth-conditional types, then $\langle\sigma,\tau\rangle$ is a truth-conditional type.

(A2) USE-CONDITIONAL TYPES
(A) u is the basic use-conditional type.
(B) If σ is any type and τ is a use-conditional type, then $\langle\sigma,\tau\rangle$ is a use-conditional type.

The vocabulary of $\mathcal{L}_{\text{TU}}$ consists of the truth-conditional connectives like $\neg$, $\vee$, $\wedge$, and a few special elements.

(A3) MULTIDIMENSIONAL VOCABULARY
(A) Use-conditional conjunction: $\odot$
(B) Triviality elements: $T_{\langle s,t\rangle}$, U_u

Use-conditional conjunction coordinates only expressions of type u. The purpose of the triviality elements is to provide trivial content to expressions that have non-trivial content in only one dimension.

The interpretation function is $[\![\cdot]\!]^c$, where c is the index for context. The interpretations of the new vocabulary elements is provided in (A4). As expected, T and C receive trivial interpretations from $[\![\cdot]\!]^c$. T denotes the set of worlds and C denotes the set of contexts.

(A4) (A) $[\![\phi \odot \psi]\!]^c = [\![\phi]\!]^c \cap [\![\psi]\!]^c$.
(B) $[\![T]\!]^c = W$.
(C) $[\![U]\!]^c = C$.

Use-conditional conjunction is merely set intersection. Given that expressions of type u denote sets of contexts, $\odot$ forms a set of contexts that have the conditions from the two use-conditional meanings.

The semantic value of a expression is three-dimensional. Between the t-dimension and u-dimension lies the s-dimension. The s-dimension is needed to facilitate compositional interaction between the other two dimensions. It stores content that is still active for the calculation of use-conditional content. As (A5) displays, the t-dimension and the s-dimension are separated by '$\blacklozenge$' while the s-dimension and u-dimension are separated by '$\bullet$.'

(A5) $\underbrace{t\text{-dimension}}_{t\text{-content}} \blacklozenge \underbrace{s\text{-dimension}}_{u\text{-active content}} \bullet \underbrace{u\text{-dimension}}_{u\text{-saturated content}}$

The dedicated interpretation functions introduced in §5.1 just give the interpretation of a single dimension for a semantic value. Their relation to the general interpretation function is this: $[\![\cdot]\!]^c = \|\cdot\|^t \blacklozenge \|\cdot\|^s \bullet \|\cdot\|^u$.

To simplify the lexicon by not giving every expression a three-dimensional meaning, Gutzmann (2015) opts for LEXICAL INSERTION RULES. These rules are a principled means of extending lexical entires into three-dimensional meanings. I detail two insertion rules.

(A6) RULE FOR PURE TRUTH-CONDITIONAL EXPRESSIONS
$\alpha \Rightarrow \alpha \blacklozenge \alpha \bullet U$, if α is a truth-conditional type.

(A7) RULE FOR FUNCTIONAL SHUNTING EXPRESSIONS
$\alpha \blacklozenge \beta \Rightarrow \alpha \blacklozenge \beta \bullet U$, if α is of truth-conditional type and β is a non-basic use-conditional type.

Consider (A6). It grows entries specifying only content in the t-dimension into three-dimensional meanings with trivial u-meaning. Note also that what is in the t-dimension is duplicated into the s-dimension. As Gutzmann (2015, §4.4) discusses, duplication in the s-dimension enables simpler composition rules. (A7) adds trivial content to the u-dimension for lexical entries which specify non-trivial content only in the t and s-dimensions.

While Gutzmann (2015) has a handful of composition rules, we again only need two. In (A8), composition in the t and s-dimension is type-driven function application. What happens in the u-domain is different. Application there is always use-conditional conjunction.

(A8) MULTIDIMENSIONAL APPLICATION
$$\frac{\alpha_1 : \langle \sigma, \tau \rangle \blacklozenge \alpha_2 : \langle \rho, \nu \rangle \bullet \alpha_3 \qquad \beta_1 : \sigma \blacklozenge \beta_2 : \rho \bullet \beta_3}{\alpha_1(\beta_1) : \tau \blacklozenge \alpha_2(\beta_2) : \nu \bullet \alpha_3 \odot \beta_3}\text{MA}$$

(A9) USE-CONDITIONAL ELIMINATION
$$\frac{\alpha_1 : \langle \sigma, \tau \rangle \blacklozenge \alpha_2 : \langle \rho, u \rangle \bullet \alpha_3 \qquad \beta_1 : \sigma \blacklozenge \beta_2 : \rho \bullet \beta_3}{\alpha_1(\beta_1) : \tau \blacklozenge \alpha_1(\beta_1) : \tau \bullet \alpha_3 \odot \beta_3 \odot \alpha_2(\beta_2) : u}\text{UE}$$

Next up is (A9). In the t-dimension, business is usual. But when all of the arguments of a complex expression are saturated in the s-dimension to produce a meaning of type u, that use-conditional content is shuttled to the u-dimension where it is conjoined with the other use-conditional content.

A.2 Lexical entries

Our goal is to derive the use-conditional meaning of a parenthetical verb from its syntactic position. To do that, we start off with a relational semantics for an attitude like *think* that is non-committal on the details.

(A10) $[\![\text{think}]\!]^c = \lambda x.\lambda p.\mathcal{T}(x)(p) : \langle e, \langle\langle s,t\rangle, \langle s,t\rangle\rangle\rangle$

Assuming the semantics for indexicals of Kaplan (1989), $[\![I]\!]^c = c_S$, where c_S is the speaker of c. Then the semantic value of the complex parenthetical by MA is $\lambda p.\mathcal{T}(c_S)(p)$ and of type $\langle\langle s,t\rangle, \langle s,t\rangle\rangle$. That meaning needs to be fleshed out as a three-dimensional meaning. By (A6), the attitude grows into (A11).

(A11) $[\![\text{I think}]\!]^c = \lambda p.\mathcal{T}(c_S)(p) : \langle\langle s,t\rangle, \langle s,t\rangle\rangle \blacklozenge \lambda p.\mathcal{T}(c_S)(p) : \langle\langle s,t\rangle, \langle s,t\rangle\rangle \bullet U$

Now, as foreshadowed, we introduce '⊗' as a DIMENSION SHIFTER that lives in the parenthetical position. It belongs to the family of shunting operators that are standard to multidimensional theories that facilitate compositional interaction between dimensions (McCready 2010; Gutzmann 2015). Two important jobs are performed by ⊗: it erases content from the t-dimension and introduces unsaturated u-content into the s-dimension. Where $\mathcal{E}$ is a variable for expressions of type $\langle\langle s,t\rangle, \langle s,t\rangle\rangle$, ⊗ receives this semantics.

(A12) $[\![\otimes]\!]^c = \lambda\mathcal{E}.T : \langle\langle\langle s,t\rangle, \langle s,t\rangle\rangle, \langle s,t\rangle\rangle \blacklozenge \lambda\mathcal{E}.\lambda p.\{c \mid c_w \in \mathcal{E}p\} : \langle\langle\langle s,t\rangle, \langle s,t\rangle\rangle, \langle\langle s,t\rangle, u\rangle\rangle \bullet U$

In the t-dimension, ⊗ is a constant function from any $\langle\langle s,t\rangle, \langle s,t\rangle\rangle$ expression to the trivial content. But in the s-dimension, it takes a $\langle\langle s,t\rangle, \langle s,t\rangle\rangle$ expression into a function from a proposition to a use-conditional content. The combined meaning of (A11) and (A12) is (A13).

(A13) $[\![\otimes \text{ I think}]\!]^c = T \blacklozenge \lambda p.\{c \mid c_w \in \mathcal{T}(c_S)(p)\} : \langle s,t\rangle, u\rangle \bullet U$

From here, the multidimensional meaning stated in §5.1 is delivered by the lexical insertion and composition rules. Suppose a proposition like $\{w \mid$ Mueller investigated in $w\}$ is the truth-conditional meaning of the main clause underneath the parenthetical. Then by lexical insertion rule (A6), the meaning of the tense phrase is filled out thusly.

(A14) $[\![\text{Mueller investigated}]\!]^c = \{w \mid \text{Mueller investigated in } w\} \blacklozenge \{w \mid \text{Mueller investigated in } w\} \bullet U$

From there, (A14) composes by MA with the shifted parenthetical (A13) to yield the following.

(A15) $[\![\text{Mueller investigated, } \otimes \text{ I think}]\!]^c =$
$\{w \mid \text{Mueller investigated in } w\} \blacklozenge \{c \mid c_w \in \mathcal{T}(c_S)(\{w \mid \text{Mueller investigated in } w\})\} \bullet U$

We are now in a position to use UE because we have a fully saturated use-conditional content in the *s*-dimension. By UE, (A15) becomes (A16).

(A16) $[\![\text{Mueller investigated, } \otimes \text{ I think}]\!]^c =$
$\{w \mid \text{Mueller investigated in } w\} \blacklozenge \{w \mid \text{Mueller investigated in } w\}$
$\bullet \{c \mid c_w \in \mathcal{T}(c_S)(\{w \mid \text{Mueller investigated in } w\})\} \odot U$

(A16) differs from (A15) in that the content of the *t*-dimension is duplicated in the *s*-dimension and the use-conditional content is shuttled from the *s*-dimension to the *u*-dimension. Since use-conditional conjunction with U simplifies to $\{c \mid c_w \in \mathcal{T}(c_S)(\{w \mid \text{Mueller investigated in } w\})\}$, the result is the advertised interpretation.

References

Adler, Jonathan. 2002. *Belief's Own Ethics*. MIT Press.

Aikhenvald, Alexandra. 2004. *Evidentiality*. Oxford University Press.

Albritton, Rogers. 1995. "Comments on Moore's Paradox and Self-Knowledge." *Philosophical Studies* 77:229–239.

Alonso-Ovalle, Luis and Menéndez-Benito, Paula. 2010. "Modal indefinites." *Natural Language Semantics* 18:1–31.

Alston, William P. 2000. *Illocutionary Acts and Sentence Meaning*. Cornell University Press.

Anand, Pranav and Hacquard, Valentine. 2013. "Epistemics and attitudes." *Semantics and Pragmatics* 6:1–59.

Atlas, Jay David. 2007. "What Reflexive Pronouns Tell Us About Belief: A New Moore's Paradox *De Se*, Rationality, and Privileged Access." In Mitchell Green and John Williams (eds.), *Moore's Paradox: New Essays on Belief, Rationality, and the First Person*, 117–145. Oxford University Press.

Austin, J.L. 1962. *How To Do Things With Words*. Harvard University Press.

Bach, Kent and Harnish, R. 1979. *Linguistic Communication and Speech Acts*. MIT Press.

Beaver, David. 2001. *Presupposition and Assertion in Dynamic Semantics*. CSLI.

Benton, Mathew and van Elswyk, Peter. 2018. "Hedged Assertion." In Sandy Goldberg (ed.), *Oxford Handbook of Assertion*. Oxford University Press.

Benton, Matthew. 2011. "Two More for Knowledge Account of Assertion." *Analysis* 71:684–687.

—. 2012. "Assertion, Knowledge, and Predictions." *Analysis* 72:102–105.

—. 2016a. "Expert Opinion and Second-Hand Knowledge." *Philosophy and Phenomenological Research* 92:492–508.

—. 2016b. "Gricean Quality." *Nous* 50:689–703.

Bezuidenhout, A. 2001. "Metaphor and What is said: A defense of a direct expression view of metaphor." *Midwest Studies in Philosophy* 25:156–186.

Bhatt, Rajesh and Pancheva, Roumyana. 2006. "Conditionals." In M. Everaert and H. van Riemsdijk (eds.), *The Blackwell Companion to Syntax*. Blackwell.

Bierwisch, M. 1980. "Semantic structure and illocutionary force." In John Searle, F. Kiefer, and M. Bierwsich (eds.), *Speech Act Theory and Pragmatics*, 1–35. Reidel.

Blaauw, Martijn. 2012. "Reinforcing the Knowledge Account of Assertion." *Analysis* 72:105–108.

Black, Max. 1952. "Saying and Disbelieving." *Analysis* 13:25–33.

Brandom, Robert. 1994. *Making It Explicit: Reasoning, Representing, and Discursive Commitment*. Harvard University Press.

Bromberger, Sylvain. 1966. "Why-questions." In R. Colodny (ed.), *Mind and Cosmos: Essays in Contemporary Science and Philosophy*, 68–111. University of Pittsburgh Press.

Brown, Penelope and Levinson, Stephen. 1987. *Politeness: Some Universals in Language Usage*. Cambridge University Press.

Camp, Elisabeth. 2006. "Contextualism, Metaphor, and What is Said." *Mind and Language* 21:280–309.

Cappelen, Herman. 2011. "Against Assertion." In Jessica Brown and Herman Cappelen (eds.), *Assertion*. Oxford: Oxford University Press.

—. 2018. "Assertion: A Defective Theoretical Category." In Sanford Goldberg (ed.), *Oxford Handbook of Assertion*. Oxford University Press.

Carston, R. 2012. "Metaphor and the literal/non-literal distinction." In K. Allan and K.M. Jaszczolt (eds.), *The Cambridge Handbook of Pragmatics*. Cambridge: Cambridge University Press.

Chierchia, Gennaro. 2006. "Broaden your views. Implicatures of domain widening and the 'logicality' of language." *Linguistic Inquiry* 37:535–590.

Chierchia, Gennaro and McConnell-Ginet, S. 2000. *Meaning and Grammar: An Introduction ot Semantics*. MIT Press, 2nd edition.

Coliva, Annalisa. 2015. "How to Commit Moore's Paradox." *Journal of Philosophy* 112:169–192.

Crimmins, Michael. 1992. "I falsely believe that *p*." *Analysis* 52:191.

Davidson, Donald. 1984. "Communication and convention." *Synthese* 1:3–17.

DeRose, Keith. 2002. "Assertion, Knowledge, and Context." *Philosophical Review* 111:167–203.

—. 2009. *The Case for Contextualism: Knowledge, Skepticism, and Context*, volume 1. Oxford University Press.

Douven, Igor. 2006. "Assertion, Knowledge, and Rational Credibility." *Philosophical Review* 115:449–485.

—. 2009. "Assertion, Moore, and Bayes." *Philosophical Studies* 144.

Dummett, Michael. 1973. *Frege: Philosophy of Language*. Duckworth.

—. 1996. *The Seas of Language*. Oxford: Clarendon Press.

Fara, Delia Graff. 2015. "Names Are Predicates." *The Philosophical Review* 124:59–117.

Fileva, Iskra and Brakel, Linda A.W. forthcoming. "Just another article on Moore's paradox, but we don't believe that." *Synthese* .

Fleisher, Willi. forthcoming. "Endorsement and assertion." *Nous* .

Frege, Gottlob. 1879. "Befriffschrift, a formula language, modeled upon that of arithmetic, for pure thought." In Jean van Heijenoort (ed.), *Frege and G odel*. Harvard University Press.

—. 1892. "Über Sinn und Bedeutung." *Zeitschrift für Philosophie und philosophische Kritik* 100:25–50.

Garcia-Carpintero, Manuel. 2004. "Assertion and the semantics of force-markers." In C. Bianchi (ed.), *The semantics/pragmatics distinction*. CSLI.

—. 2016. "Indirect Assertions." *Polish Journal of Philosophy* 10:13–49.

—. forthcoming. "On the Nature of Presupposition: A Normative Speech Act Account." *Erkenntnis* .

Geach, Peter. 1965. "Assertion." *The Philosophical Review* 74:449–465.

Giannakidou, Anastasia and Mari, Alda. 2018. "The semantic roots of positive polarity: epistemic modal verbs and adverbs in English, Greek, and Italian." *Linguistics and Philosophy* 41:623–664.

Giorgi, Alessandra. 2010. *About the Speaker: Towards a Syntax of Indexicality*. Oxford University Press.

Goldberg, Sandy. 2015. *Assertion: On The Philosophical Significance of Assertoric Speech*. Oxford University Press.

Green, Mitchell. 2000. "Illocutionary Force and Semantic Content." *Linguistics and Philosophy* 23:435–473.

—. 2013. "Assertions." In M. Sbisa and K. Turner (eds.), *Pragmatics of Speech Actions, Vol. II of the Handbook of Pragmatics*. Mouton de Gruyter.

Green, Mitchell and Williams, J.N. (eds.). 2007. *Moore's Paradox: New Essays on Belief, Rationality, and the First Person*. Oxford University Press.

Grice, Paul. 1989. *Studies in the Way of Words*. Harvard University Press.

Gutzmann, Daniel. 2015. *Use-conditional meaning*. Oxford University Press.

Hacquard, Valentine. 2006. *Aspects of modality*. Ph.D. thesis, Massachusetts Institute of Technology.

—. 2010. "On the event relativity of modal auxiliries." *Natural Language Semantics* 18:79–114.

Haddican, Bill, Holmberg, Anders, Tanaka, Hidekazu, and Tsoulas, George. 2014. "Interrogative slifting in English." *Lingua* 138:86–106.

Han, Chunghye. 2002. "Interpreting interrogatives as rhetorical questions." *Lingua* 112:201–229.

Hare, R.M. 1970. "Meaning and Speech Acts." *Philosophical Review* 79:3–24.

Hedberg, N. and Elouazizi, N. 2015. "Epistemic Parenthetical Verb Phrases: C-command, semantic scope and prosodic phrasing." In S. Scheider, J. Glikman, and M. Avanzi (eds.), *Parenthetical Verbs*, 225–256. De Gruyter.

Heim, Irene. 1982. *The semantics of definite and indefinite noun phrases*. Ph.D. thesis, University of Masschusetts.

—. 1992. "Presupposition Projection and the Semantics of Attitude Verbs." *Journal of Semantics* 9:183–221.

Hinchman, Edward. 2013. "Assertion, Sincerity, and Knowledge." *Nous* 4.

Hindriks, Frank. 2007. "The status of the knowledge account of assertion." *Linguistics and Philosophy* 30:393–406.

Hooper, Joan B. 1975. "On Assertive Predicates." In John P. Kimball (ed.), *Syntax and Semantics 4*, 91–123. Academic Press.

Ifantidou, Elly. 1993. "Parentheticals and relevance." *Lingua* 90:69–90.

Jary, Mark. 2010. *Assertion*. Palgrave Macmillan.

Kaplan, David. 1989. "Demonstratives." In J. Almong, J. Perry, and H. Wettstein (eds.), *Themes from Kaplan*, 481–563. Oxford University Press.

—. 1999. "The meaning of *ouch* and *oops*: Explorations in the theory of meaning as use." Howison Lecture at U.C. Berkeley. Transcribed by Elizabeth Coppock.

Kartunnen, Lauri. 1974. "Presuppositions and linguistic context." *Theoretical Linguistics* 1.

Kelp, Christopher. 2016. "Assertion, A Function First Account." *Nous* .

Kratzer, Angelika. 1986. "Conditionals." *Chicago Linguistics Society* 22:1–15.

Kratzer, Angelika and Shimoyama, Junko. 2002. "Indeterminate pronouns: The view from Japanese." In Yukio Otsu (ed.), *Proceedings of the Third Tokyo Conference on Psycholinguistics*. Hituzi Syobo.

Krifka, Manfred. 2001. "Quantifying into Question Acts." *Natural Language Semantics* 9:1–40.

Kvanvig, Jonathan. 2009. "Assertion, Knowledge, and Lotteries." In Patrick Greenough and Duncan Pritchard (eds.), *Williamson on Knowledge*. Oxford University Press.

—. 2011. "Norms of Assertion." In Jessica Brown and Herman Cappelen (eds.), *Assertion*. Oxford: Oxford University Press.

Lackey, Jennifer. 2007. "Norms of Assertion." *Nous* 41:594–626.

—. 2008. *Learning from Words: Testimony as a Source of Knowledge*. Oxford University Press.

Larkin, William. 1999. "Shoemaker on Moore's Paradox and Self-Knowledge." *Philosophical Studies* 96:239–252.

Levinson, Stephen. 1983. *Pragmatics*. Cambridge University Press.

Loar, Brian. 1981. *Mind and Meaning*. Cambridge: Cambridge University Press.

Lycan, William and Boër, Steven. 1980. "A performadox in truth-conditional semantics." *Linguistics and Philosophy* 4:71–100.

McCready, Elin. 2010. "Varieties of Conventional Implicature." *Semantics and Pragmatics* 3:1–57.

McDowell, John. 1980. "Meaning, Communication, and Knowledge." In Z. van Straaten (ed.), *Philosophical Subjects: Essays Presented to P.F. Strawson*. Oxford: Clarendon Press.

McGlynn, Aidan. 2014. *Knowledge First?* Palgrave Macmillan.

McKinnon, Rachel. 2012. "How Do You Know that 'How do you know?' challenges a speaker's knowledge?" *Pacific Philosophical Quarterly* 93:65–83.

McKinnon, Rachel and Turri, John. 2013. "Irksome assertions." *Philosophical Studies* 166:123–128.

Merchant, Jason. 2001. *The Syntax of Silence*. Oxford University Press.

—. 2004. "Fragments and Ellipsis." *Linguistics and Philosophy* 27:661–738.

Moore, G.E. 1942. "A Reply to My Critics." In Paul Schilpp (ed.), *The Philosophy of G.E. Moore*. La Salle: Open Court Press, 3rd edition.

—. 1962. *Commonplace Book: 1919-1953*. London: George Allen and Unwin.

Murray, Sarah. 2017. *The Semantics of Evidentials*. Oxford: Oxford University Press.

Owens, David. 2006. "Testimony and assertion." *Philosophical Studies* 130:105–129.

Pagin, Peter. 2016. "Problems with Norms of Assertion." *Philosophy and Phenomenological Research* .

Pendlebury, Michael. 1986. "Against the Power of Force: Reflections on the Meaning of Mood." *Mind* 95:361–372.

Pietroski, Paul. 2002. *Causing actions*. Oxford University Press.

Potts, Christopher. 2004. *The Logic of Conventional Implicatures*. Oxford University Press.

Predelli, Stefano. 2013. *Meaning without truth*. Oxford University Press.

Reynolds, Stephen. 2002. "Testimony, knowledge, and epistemic goals." *Philosophical Studies* 110:139–161.

Rizzi, Luigi. 1997. "The Fine Structure of the Left Periphery." In Liliane Haegerman (ed.), *Elements of Grammar*, 281–337. Kluwer.

Roberts, Craige. 2018. "Speech Acts in Discourse Context." In Dan Fogal, Daniel Harris, and Matt Moss (eds.), *New Work On Speech Acts*. Oxford University Press.

Rooryck, Johan. 2001a. "Evidentiality, Part I." *Glot International* 5:125–133.

—. 2001b. "Evidentiality, Part II." *Glot International* 5:161–168.

Rosenthal, David. 1995. "Moore's Paradox and Consciousness." *Philosophical Perspectives* 9:313–333.

Ross, John. 1970. "On declarative sentences." In Roderick Jacobs and Peter Rosenbaum (eds.), *Readings in English transformational grammar*, 222–272. Ginn & Co.

Sadock, Jerrold. 1974. *Towards a Linguistic Theory of Speech Acts*. Academic Press.

Schaffer, Jonathan. 2008. "Knowledge in the Image of Assertion." *Philosophical Issues* 18:1–19.

Schiffer, Stephen. 1972. *Meaning*. Oxford: Clarendon Press.

Schlenker, Philippe. 2004. "Context of thought and context of utterance." *Mind and Language* 19:279–304.

Searle, John. 1969. *Speech Acts*. Cambridge: Cambridge University Press.

Searle, John and Vanderveken, David. 1985. *Foundations of Illocutionary Logic*. Cambridge: Cambridge University Press.

Sharvit, Yael. 2008. "The puzzle of free indirect discourse." *Linguistics and Philosophy* 31.

Shoemaker, Sydney. 1995. "Moore's Paradox and Self-Knowledge." *Philosophical Studies* 77:211–228.

Simion, Mona. 2016. "Assertion: knowledge is enough." *Synthese* 193:3041–3056.

Simons, Mandy. 2007. "Observations on embedding verbs, evidentiality, and presupposition." *Lingua* 117:1034–1056.

Slote, M.A. 1979. "Assertion and belief." In J. Dancy (ed.), *Papers on Language and Logic*. Keele: Keele University Library.

Sorensen, Roy. 1988. *Blindspots*. Oxford: Clarendon Press.

Speas, Margaret and Tenny, Carol. 2003. "Configurational properties of point of view roles." In Anna Maria Di Scuillo (ed.), *Asymmetry in grammar*, 315–344. John Benjamins.

Stainton, Robert. 1995. "Non-Sentential Assertions and Semantic Ellipsis." *Linguistics and Philosophy* 18:281–296.

—. 2006. *Words and Thoughts: Subsentences, Ellipsis, and the Philosophy of Language*. Oxford.

Stalnaker, Robert. 1973. "Presuppositions." *Journal of Philosophical Logic* 2:447–457.

Starr, William B. 2014. "Mood, Force, and Truth." *ProtoSociology* 31:160–181.

Stenius, Erik. 1967. "Mood and language game." *Synthese* 17:254–274.

Stern, J. 2000. *Metaphor in Context*. MIT Press.

Strawson, P.F. 1964. "Intention and Convention in Speech Acts." *Philosophical Review* 73:439–460.

Sutton, Jonathan. 2005. "Stick to What You Know." *Nous* 39:359–396.

Swanson, Eric. 2010. "Structurally defined alternatives and lexicalizationsi of XOR." *Linguistics and Philosophy* 33:31–36.

Tonhauser, Judith. 2012. "Diagnosing (not-)at-issue content." *Proceedings of Semantics of Under-represented Languages of the Americas* 6:239–254.

Turri, John. 2010. "Prompting Challenges." *Analysis* 70:456–462.

—. 2011. "The Express Knowledge Account of Assertion." *Australasian Journal of Philosophy* 89:37–45.

—. 2013. "Knowledge Guaranteed." *Nous* 47:602–612.

Unger, Peter. 1975. *Ignorance: The Case for Skepticism*. Oxford: Clarendon Press.

Urmson, J.O. 1952. "Parenthetical Verbs." *Mind* 61:480–496.

van Elswyk, Peter. 2018. *Un/qualified declaratives*. Ph.D. thesis, Rutgers University, New Brunswick.

van Rooy, Robert. 2003. "Negative polarity items in questions: strength as relevance." *Journal of Semantics* 20:239–273.

von Fintel, Kai and Gillies, Thony. 2007. "An opinionated guide to epistemic modality." *Oxford Studies in Epistemology* 2:32–62.

Wearing, Catherine. 2006. "Metaphor and What is Said." *Mind and Language* 21:310–332.

Weiner, Matthew. 2005. "Must we Know What we Say." *Philosophical Review* 114:227–251.

Willett, Thomas. 1988. "A Cross-linguistic survey of the grammaticization of evidentiality." *Studies in Language* 12:51–97.

Williams, Bernard. 2002. *Truth and truthfulness: an essay in genealogy*. Princeton: Princeton University Press.

Williams, John N. 2013. "Moore's Paradox and The Priority of Belief Thesis." *Philosophical Studies* 165:1117–1138.

Williamson, Timothy. 2000. *Knowledge and Its Limits*. Oxford University Press.

Wittgenstein, Ludwig. 1980. *Remarks on the Philosophy of Psychology*, volume I. Chicago University Press.

Woods, Jack. 2018. "A Commitment-Theoretic Account of Moore's Paradox." In Ken Turner and Laurence Horn (eds.), *Pragmatics, Truth and Underspecification: Towards An Atlas of Meaning*, 323–348. Brill.

Yalcin, Seth. 2007. "Epistemic Modals." *Mind* 116:983–1026.

Zimmerman, David. 1980. "Force and Sense." *Mind* 89:214–233.