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UNIVERSITY OF CALIFORNIA
SANTA CRUZ

PRAGMATIC CONDITIONS ON NON-POLAR RESPONSES

A thesis submitted in partial satisfaction
of the requirements for the degree of
MASTER OF ARTS

in

LINGUISTICS

by

Lauren E. McGarry

June 2017

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Pragmatic conditions on non-polar responses

Lauren E. McGarry

Abstract

This paper discusses the discourse presuppositions of *indeed* and *correct* as response particles. Previous work on responses has focused on *yes* and *no* as polarity particles (e.g., Farkas & Bruce 2010, Farkas & Roelofsen 2016, Krifka 2013); however, the behavior of *indeed* cannot be explained in terms of absolute or relative polarity, because it is compatible with both positive and negative responses, as well as with agreement or disagreement. Rather, I argue that the distribution of *indeed* and *correct* is best explained in terms of relative epistemic authority (REA) (Heritage & Raymond 2005, Northrup 2014): *Indeed* presupposes that the speaker has equal or greater authority over the QUD compared to the addressee; *correct* presupposes that the speaker has greater authority. This is verified through felicity judgments in responses with varying REA configurations in both English and German, as well as their compatibility with rising intonation.

Despite this deviation from the existing response particle literature, work on polar responses provides essential insights into propositional anaphora and the derivation of at-issue content for *indeed* and *correct*.

For Ben Spalding

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1. Introduction

In studies of discourse, it is valuable to consider the roles and effects of response particles, such as those italicized in (1) and (2). Their distributions, interpretations, and context-related restrictions all stand to shed light on the mechanisms behind agreement and disagreement, the effects of various initiative types, the nature of discourse anaphora, and how best to model discourse.

- (1) a. /p/ is a stop.
b. *Yes*, it is.
c. *No*, it isn't.
d. *Indeed*, it is.
e. *Correct* (*it is).
- (2) a. Is /p/ a stop?
b. *Yes*, it is.
c. *No*, it isn't.
d. *Indeed*, it is.
e. #*Correct*.

The polar response particles, *yes* and *no*, are quite well studied. Of the many available analyses (e.g., Krifka 2013, Kramer & Rawlins 2009), I adopt that developed by Farkas and Bruce (2010) and Farkas and Roelofsen (2017). They argue that *yes* and *no* reflect the polarity of their prejacent, that is, the 'it is' or 'it isn't' that accompanies the particles above. The prejacent is anaphoric to the initiative being responded to, in that they necessarily derive their propositional content from that initiative. The particles themselves are not anaphoric, but instead reflect whether the prejacent is positive (*yes*) or negative (*no*), and/or whether it agrees (*yes*) or disagrees (*no*) with the preceding initiative.

Non-polar response particles, on the other hand, have not been extensively studied. This paper is a case study of two such responses, *indeed* and *correct*. As the above examples illustrate, *correct* is quite different in its distribution from the polar response particles. Further differences arise when we consider the felicity of these response particles in a given context, as in (3).

- (3) Context: Participant A is a professor of phonology. She is explaining the manner of articulation of various sounds to her (less knowledgeable) students.
- a. /p/ is a stop.
 - b. Yes (it is).
 - c. #Indeed (it is).
 - d. #Correct.

Clearly, there are factors that influence the felicity of *indeed* and *correct* that do not impact polar responses. The goal of the current paper is to establish the at-issue contribution of *indeed* and *correct* as well as the context-related presuppositions that explain their infelicity in (3). I argue that:

- *indeed* and *correct* are discourse anaphors, deriving their at-issue content from the immediately preceding context; however, their mechanisms for anaphora differ such that *indeed* can agree or disagree with an initiative, while *correct* can only agree (Section 2),
- the infelicity of *correct* in (2) can be attributed to a presupposition that requires the addressee to have expressed bias for the antecedent (Section 3), and
- both particles have presuppositions related to **relative epistemic authority (REA)** that renders them unacceptable in (3) (Sections 4 and 5).

Section 4 provides an overview of REA as it has been discussed in the sociolinguistic and formal pragmatics literature; it concerns how knowledgeable the speaker is about the QUD relative to the addressee (Northrup 2014). In Section 5 I argue that *correct* presupposes that the speaker has **greater** authority over the QUD than the addressee, while *indeed* presupposes that the speaker has **equal or greater** authority. This analysis yields important predictions regarding when *indeed* can bear rising intonation, which I explore in Section 6. Section 7 considers the fact that *indeed* can be used to respond to speech acts, and discusses what consequences this may have for our model of discourse. In Section 8, I explore REA and other presuppositions of two non-polar response particles in German. Section 9 concludes.

2. Anaphora and at-issue content

Farkas and Bruce's (2010) analysis of *yes* and *no* is framed within their Tabletop model of discourse. Assertions constitute proposals for an update to the common ground; in being uttered, they are placed upon the Table, where another participant may accept or reject the proposed update. Questions serve as a request that the addressee decide the issue: They place a set of propositions on the Table, with the expectation that the addressee will accept some subset of them. Responding to an utterance is accomplished through *highlighting* (as defined by Roelofsen & Farkas 2015); a proposition that is overtly expressed in discourse is made available as a discourse referent, such that a discourse anaphor can derive its at-issue content from the highlighted proposition.

- (4) a. /p/ is a stop.
On Table: {*p*}, where *p*=/p/ is a stop.
Highlighted: {*p*}
- b. Yes, it is.
Contribution: Commit speaker B to *p*, where *p*=/p/ is a stop.
- c. No, it is not.
Contribution: Commit speaker B to $\neg p$, where $\neg p$ =/p/ is not a stop.

In their analysis of *yes* and *no*, Farkas and Bruce clarify that it is not the response particles, but their prejacent that are anaphoric. A prejacent is the appositive-like *it is* or *it isn't* shown in the above examples; as (4) shows, their content is derived from the proposition *p* highlighted by Speaker A. *Yes* and *no* signal the relation of the prejacent to the antecedent (relative polarity), as well as the polarity of the prejacent (absolute polarity). With a more complete understanding of discourse anaphora and the means by which polar response particles derive their content, we can examine *indeed* and *correct*.

Based on the standard interpretation of *indeed* and *correct* in their responsive function, we can take them *to* be discourse anaphors; they commit the speaker to some proposition that was highlighted in the immediately preceding context. This is made especially clear by the fact that they are infelicitous without an antecedent (i.e., when uttered out of the blue, rather than as a response):

- (5) Out of the blue context
 - a. #Indeed (it is).
 - b. #Correct.

However, the two particles derive their content in different ways, which yields differences in their range of possible uses: *Indeed* is very much like *yes* and *no*, in that it has a prejacent which is optionally elided in most contexts. *Correct*, on the other hand, does not. Recall from (1), given here as (6):

- (6)
 - a. /p/ is a stop.
 - b. Yes, (it is).
 - c. No, (it isn't).
 - d. Indeed, (it is).
 - e. Correct (*it is).

From this, we can conclude that *indeed* commits the speaker to its prejacent, whose antecedent is a highlighted proposition in context. *Correct*, on the other hand, must commit the speaker to the antecedent itself.¹ This observation yields an important prediction for the two particles. Recall that in the case of polarity particles, the content of the prejacent can be the same as its antecedent's, or the complement; this is a general property of the prejacent, and is not related to the particle that accompanies the prejacent:

¹ See Appendix A for a closer consideration of this claim, and a possible alternative to it.

- (7) a. John is not the murderer.
- b. Yes, he is not.
- c. No, he is not.
- d. **Yes, he is.**²
- e. **No, he is.**

Based on this fact, we would expect *indeed* to be able to agree or disagree with the antecedent, in that it can commit the speaker to the antecedent or its complement via the prejacent. *Correct*, on the other hand, should be limited to agreement by committing the speaker directly to the antecedent. This prediction is in fact borne out, as shown in (8) and (9).

- (8) AGREEMENT WITH ANTECEDENT
 - a. John is not the murderer.
 - b. Indeed (he is not).
 - c. Correct. (He is not.)

- (9) DISAGREEMENT WITH ANTECEDENT
 - a. John is not the murderer.
 - b. **Indeed he is!**³
 - c. **#Correct.** He is!

It is worth noting that in order to disagree with an initiative, *indeed* must bear special intonation (which Krifka 2013 refers to as “rejecting accent”) and the prejacent cannot be elided. This does not imply anything for *indeed*’s semantics, but instead

² Boldface is used to represent what Krifka (2013) calls “rejecting accent,” which may be verum focus.

³ Many consultants have indicated that *indeed* can only be used to disagree with negative initiatives, not positive ones. There are a few potential accounts for this. The first would be to claim that *indeed* is a polarity particle with similar semantics to *yes*; such an account is attempted in Appendix B and found not to be ideal. Another possibility arises from examinations of non-responsive uses of *indeed*, introduced in 0; *indeed* often seems to be used to emphasize positive polarity in conditionals, and it is possible that a similar interpretation limits it to emphatic reversal of negative antecedents to their positive counterparts in responses.

derives from the pragmatics of disagreement. Disagreement is a marked discourse move, and as such must be properly signaled in responses (Farkas & Bruce 2010). Furthermore, disagreement with a negative initiative is among the most marked potential responses (Roelofsen & Farkas 2015), and this intonation is required due to the contrastive nature of the positive polarity in these contexts.

With this confirmation of the facts, I propose, as a first pass, the following as the at-issue content and presuppositional content for *indeed* (10) and *correct* (11). (These definitions will be amended throughout this paper.)

- (10) Contribution of *indeed*[*p*], where *p* is the propositional content of the prejacent: commit the speaker to *p*.

Presupposition: There is a highlighted antecedent that is either *p* or $\neg p$.

- (11) Contribution of *correct*: Affirm the antecedent.

Presupposition: There is a highlighted proposition in the immediately preceding context that is the antecedent.

A question that arises here is what relation *indeed* bears to its prejacent. Per Farkas and Bruce, polar response particles are the realization of features on a high-attaching Polarity head, which reflect the absolute and relative polarity of the prejacent; *yes* can be inserted when the prejacent is positive and/or when its content is the same as the antecedent's (i.e., Pol⁰ bears the features [+] and/or [SAME]), while *no* can be used when the prejacent is negative or is the reverse of the antecedent (i.e., Pol⁰ bears the features [-] and/or [REVERSE]). I do not believe that *indeed* should be considered to behave the same way as polar response particles (see Appendix A for an argument for this); however, that does not mean that it cannot be an exponent of some feature on a

head other than Pol^0 . For now, I remain agnostic as to the actual position and featural origins of *indeed*, as it will not play a critical role in the remainder of my analysis. Instead, I turn to another point at which these particles diverge: their ability to respond to interrogatives.

3. Responding to interrogatives

Recall from (2) that *correct*, unlike *indeed* or the polar response particles, cannot be used to respond to a polar interrogative. We see the same constraint in (12):

- (12) POLAR INTERROGATIVE
- a. Is it cold out today?
 - b. Indeed (it is)./ #Correct.
 - c. Is it not cold out today?
 - d. Indeed (not)./ #Correct.

Roelofsen and Farkas (2015) argue that polar questions place a set of propositions $\{p, \neg p\}$ on the Table. The proposition that reflects the polarity of the interrogative as it was uttered is highlighted (i.e., p is highlighted in (12)a, $\neg p$ in (12)b). In other words, anaphora proceeds as normal in polar interrogatives, which explains how *indeed*, *yes*, and *no* are valid responses in (2) and (12). However, it does not explain why *correct* is ruled out here.

The picture becomes clearer when we look at other interrogative types, which in fact do license *correct* as a response:

- (13) HIGH NEGATION POLAR INTERROGATIVE
- a. Isn't it cold out today?
 - b. Indeed./ Correct.
 - c. Isn't it not cold out today?
 - d. Indeed./ Correct.
- (14) TAG QUESTION
- a. It's cold out today, isn't it?
 - b. Indeed./ Correct.
 - c. It's not cold out today, is it?
 - d. Indeed./ Correct.

- (15) RISING DECLARATIVE
- a. It's cold out today?
 - b. Indeed./ Correct.
 - c. It's not cold out today?
 - d. Indeed./ Correct.

The infelicity of *correct* in (2) and (12) must be attributable to a difference between polar interrogatives and the other interrogative types and rising declaratives. There are many accounts of the marked sentence types in (13)-(15): According to Farkas and Roelofsen (2017), tag questions and rising declaratives constitute biased questions, which require the asker to have some evidence for the highlighted possibility. Gunlogson (2008) treats rising declaratives as weak declaratives, which add a contingent commitment to the speaker's commitment list. Malamud and Stevenson (2015) take a similar approach to rising declaratives, and also consider tag questions to involve contingent commitment. I will argue for Farkas and Roelofsen's bias-based account of rising declaratives in Section 6, and for now stipulate that the concern here is bias, not commitment. (For the current state of my analysis, this decision does not have any significant impact beyond labeling.) It is this bias that distinguishes marked interrogatives and rising declaratives from polar interrogatives: While polar interrogatives are claimed to highlight one possibility, this only serves to make them available as discourse referents—it does not constitute bias or commitment (Farkas and Roelofsen 2017). From this, we can conclude that *correct* requires that the addressee has expressed bias for the highlighted possibility, while *indeed* does not.

3.1. Summary

In this section, I have argued that the presuppositions of *correct* should include addressee bias. This yields the updated contribution in (17).

(16) Contribution of *indeed*[*p*], where *p* is the propositional content of the prejacent: commit the speaker to *p*.

Presupposition: There is a highlighted antecedent that is either *p* or $\neg p$.

(17) Contribution of *correct*: Affirm the antecedent.

Presuppositions:

- There is a highlighted proposition in the immediately preceding context that is the antecedent.
- **The addressee has expressed bias toward the antecedent.**

However, these definitions do not explain the context-based infelicity seen in (3). In the following section, I argue that these particles have additional presuppositions regarding **relative epistemic authority (REA)**. This begins with a discussion of REA's role in the literature so far (Section 4), followed by a series of constructed dialogues illustrating its significance to the distribution of *indeed* and *correct*.

4. Epistemic authority

Relative epistemic authority has been discussed previously in both the socio-linguistic and formal pragmatics literature, but not yet in relation to particular response particles. I will ultimately adopt Northrup's (2014) formal definition, given in (18); however, it is worth it to discuss the functional origins of this concept, which address the need to establish authority in responses. Following this discussion, I will provide further details on Northrup's formal pragmatic implementation of this concept, and how it relates to the current project.

- (18) Relative epistemic authority: “How qualified a participant is [based on his knowledge] to vouch for the truth of the proposition, **compared to his interlocutors.**” (Northrup 2014)

4.1. The sociolinguistic perspective

An important concept within the sociolinguistic literature is *face*, which is a particular image of the self presented to others (Goffman 1967); a particular person may have different faces for different social groups or contexts, but strives to maintain consistent face for a given audience. For this reason, Goffman places great emphasis on the strategies underlying *preservation of face* (1971), whereby people linguistically signal certain traits so as to maintain the desired persona and status within a conversation.

Heritage and Raymond (2005) argue for the inclusion of knowledge and expertise among the areas of concern in preservation of face. That is, they argue that participants in a dialogue feel the need to signal and negotiate their relative epistemic authority over a topic; this signaling allows them to maintain consistent faces with regard to their relationship to the addressee and their right to make certain types of claims. Although

Heritage and Raymond specifically use the term ‘relative epistemic authority,’ they frequently discuss this concept in terms of ‘primary rights,’ i.e., greater claim to authority—and therefore greater right to speak—over a given topic or statement. They specifically examine dialogues in which speakers are making evaluations, and their addressees respond with their own evaluations. As they are most directly relevant to our discussion of *indeed* and *correct*, I will discuss some examples in which the respondent agrees with the initiator, with different claims to authority in each example.

Heritage and Raymond state that making an evaluation before another participant can in itself constitute a claim to primary rights to the evaluation, i.e., a claim to greater REA. However, greater authority is not always compatible with preservation of face; a speaker may wish to downgrade their claim to show deference to a higher authority, or in situations where participants are equal to each other. In the current examples ((19) and (20)), this downgrading is achieved with tag questions.⁴ If a person is speaking second, they must upgrade their claim to establish primary rights, even if the first speaker has downgraded a claim. It is here that their analysis informs my own: They claim that the choice of response particles and the order of the response serves to indicate what type of rights they are asserting; they may confirm their interlocutor’s evaluation while asserting primary rights, or agree while remaining more neutral as to their own rights (resulting in an interpretation of equal or lesser epistemic authority, depending on whether their

⁴ Note that this is quite compatible with the analyses of tag questions mentioned in Section 3; in those cases, a speaker may have a bias toward some possibility, but seeks confirmation from the addressee. Heritage and Raymond’s analysis is simply a different perspective on this: a speaker has an opinion, but makes it clear that they want the addressee to weigh in rather than committing independently.

interlocutor has downgraded or not). (19) exhibits the former strategy; in using the polarity particle *yes* only after providing her own evaluation, Participant B is prioritizing her own evaluation over providing a response to Participant A's tag question; thus she is making a claim to primary rights/greater REA. Heritage and Raymond explain that this aligns with the participants' faces: B is A's mother, and as such would have greater authority in declaring a particular trend among the youths "cheap."

(19) "Confirming" response, > REA

- a. It's very cheap, isn't it.
- b. It's very cheap, yes.

In (20), Participant B prioritizes responding with the agreement particle *yeh*, resulting in a neutral evaluation that does not claim greater REA. Since A downgraded her claim and B did not assert primary rights, this negotiation ends with the participants having equal epistemic authority—which is quite reasonable, considering the two friends are likely to have the same knowledge as to what the day is like, and as to what constitutes a beautiful day.

(20) "Agreeing" response, \leq REA

- a. T's tsuh beautiful day out isn't it?
- b. Yeh it's jus' gorgeous... (Heritage & Raymond 2005)

Now that we see the sociolinguistic roots of this concept, as well as its value in responses, we turn to its role in the formal pragmatics literature.

4.2. The formal pragmatics perspective

In his 2014 dissertation, Northrup studied two Japanese discourse particles, *yo* and *ne*, and their combination *yone*. According to his analysis, *yo* presupposes maximal epistemic authority on the part of the speaker (i.e., no participant has more authority than

the speaker), *ne* presupposes minimal epistemic authority on the part of the speaker (i.e., no participant has less authority than the speaker), and *yone* presupposes equal authority among participants. The latter generates an implicature such that *yo* conveys that the speaker has greater authority than all participants, while *ne* conveys that the speaker has less authority than others.

I hypothesize that *indeed*, like *yo*, presupposes maximal (i.e., equal or greater) authority on the part of the speaker. *Correct*, on the other hand, presupposes that the speaker has greater—but not equal—authority relative to the other participants. One might expect this to result in an implicature, but an examination of the data will reveal this not to be the case. The reason for this remains an open question, but I offer some speculative suggestions: (1) *Indeed* leaves open the possibility that both participants are on a level playing field while also indicating that the speaker should be trusted; *correct* eliminates the possibility of equal authority, necessarily downgrading the addressee's status. There may be a politeness maxim stating that one should not declare higher authority unless it is necessary to do so. (2) There are a great many ways to agree with someone in English; it may be that there is some particle or phrase conveying equal epistemic authority, such that the space of possibilities is fully specified and no implicatures can be generated.⁵ This would require further research to determine, but I leave the discussion here. Instead, I turn to my own analysis of *indeed* and *correct*, which confirms the hypothesis stated above.

⁵ Many thanks to Deniz Rudin for talking me through this second point.

5. Presuppositions of *indeed* and *correct*

5.1. Successful predictions

The hypothesis in the previous section provides very concrete predictions for these particles' acceptability in context, which are schematized in Table 5.1:

Table 5.1: Predictions for REA and acceptability

	SPKR > ADD	SPKR = ADD	SPKR < ADD
<i>Indeed</i>	✓	✓	#
<i>Correct</i>	✓	#	#

Both are projected to be acceptable in situations where the speaker has greater authority, while only *indeed* should be acceptable when speaker and addressee have equal authority. Neither should be acceptable when the speaker has less authority than the addressee. I test these predictions through a series of constructed dialogues, constructed around scenarios in which a particular speaker has a consistent evidential base⁶. The proper REA configurations, and thus the changes in acceptability of *indeed* and *correct*, are achieved by changing her addressee and the issue being discussed.

Scenario, part 1: A boy complains of a sore throat, and his mother measures his temperature at 100°F with a reliable thermometer. His mother has researched the symptoms online and knows the child's classmates have had strep throat recently. She believes her son has strep throat, though she knows the symptoms have other potential causes. She calls the school to report the absence:

(21) SPEAKER > ADDRESSEE⁷

Teacher: He has strep./He has strep, doesn't he?

⁶ Northrup (2014) defines *evidential base* as “the basis that the speaker has for making his contribution to the discourse.” This derives from “the speaker's private beliefs, his interlocutors' discourse commitments, and other contextually-rooted sources.”

⁷ Unless noted, SPEAKER refers to the participant who utters *indeed/correct*.

Mother: Indeed./Correct.

In (21), the teacher may have sufficient evidence to guess the boy's condition, if he remembers him complaining about his throat or knows that other students have been out with strep throat; however, without having seen him recently, taken his temperature, or researched his symptoms, the teacher's evidential base is quite a bit less substantial than the mother's. Therefore, she, as a speaker with greater epistemic authority, is able to say *indeed* or *correct*. This fits my first prediction exactly. To adjust the REA configuration, we must look further in this scenario:

Scenario, part 2: The woman brings her son to the doctor. The doctor takes the boy's temperature with a thermometer that is as reliable as the mother's. This one also measures it at 100°F.

(22) SPEAKER = ADDRESSEE

Doctor: He has a fever.

Mother: Indeed./ #Correct.

Because they used the same methods to gather the same evidence, and no special outside knowledge is needed to determine whether the boy has a fever, the mother and the doctor have equal epistemic authority in (22). As predicted, this licenses *indeed*, but not *correct*, as a response.

Scenario, part 3: The doctor runs a test, which indicates that the boy does have strep.

(23) SPEAKER < ADDRESSEE

Doctor: He has strep throat.

Mother: #Indeed./ #Correct.

In the third part of this scenario, the doctor firmly establishes greater epistemic authority over the mother by running a test for strep throat. Due to her lower authority,

the mother is not able to respond with either *indeed* or *correct* in (23). In all cases, my predictions are confirmed. We must update the contributions of each particle to include their presuppositions for REA:

(24) Contribution of *indeed*[*p*], where *p* is the propositional content of the prejacent: commit the speaker to *p*.

Presuppositions:

- There is a highlighted antecedent that is either *p* or $\neg p$.
- **The speaker has equal or greater epistemic authority over *p* relative to the addressee.**

(25) Contribution of *correct*: Affirm the antecedent.

Presuppositions:

- There is a highlighted proposition in the immediately preceding context that is the antecedent.
- The addressee has expressed bias toward the antecedent.
- **The speaker has greater epistemic authority over *p* than the addressee.**

Here we see a connection between responsive *correct* and adjectival *correct*. The adjective appeals to some objective set of facts, with the primary effect being that the speaker finds the addressee's previous claim, action, decision, etc., to be in accordance with those facts. This presupposes that the speaker has knowledge of those facts (i.e., has high epistemic authority), and that the addressee lacks this knowledge and instead needs the speaker to inform them (i.e., the addressee has less authority over the QUD relative to the speaker).

5.2. A note on arrogance and equal evidence

Although the data above seem to square very neatly with my analysis, there are some complicating factors. The first is that while *indeed* and *correct* are not good

responses in the above examples, they are not actually impossible; they are simply very arrogant. As we might expect from a particle that encodes relative epistemic authority, using *correct* without a proper claim to authority is not infelicitous in the way that we typically interpret it within pragmatics; rather, it paints the speaker as having excessive confidence in his own evidential base or status within the conversation. To more precisely highlight that my predictions are correct, Deniz Rudin (p.c.) provided an example that more effectively rules out such a reading. While it is plausible that the woman in the above scenario could be sufficiently arrogant to think that she knows better than the doctor's tests or even thermometer, Participant B in the following scenario would have to achieve spectacularly delusional levels of confidence to use *correct*:

(26) Context: Paul's mom is coming to town. He told Deniz she's going to be at trivia. Paul shows up at trivia in the company of a woman old enough to be his mother, who Deniz has never seen before.

Woman: Hi, I'm Paul's mom.

Deniz: #Correct.

This quite clearly rules out *correct* as infelicitous, and makes the importance of REA in my analysis much clearer.

A potential problem seems to arise when we consider this same scenario in the context of *indeed*. As illustrated above, *indeed* should be ruled out when the speaker has less epistemic authority than the addressee. However, it seems to be acceptable in the following scenarios:

(27) Context: Paul's mom is coming to town. He told Deniz she's going to be at trivia. Paul shows up at trivia in the company of a woman old enough to be his mother, who Deniz has never seen before.

Woman: Hi, I'm Paul's mom.

- a. Deniz: Indeed.
- b. Deniz: I know.

(28) Context: Mel was outside in freezing weather. Sue has been inside all day, and has not checked the weather or looked out the window. When Mel comes inside, she is very obvious shivering and kicking snow off her boots.

Mel: It's freezing out!

- a. Sue: Indeed.
- b. Sue: Apparently.

Both Deniz in (28) and Sue in (29) have less evidence for the proposition at hand than their addressee. Paul's mom and Mel both have their own lived experiences as evidence; Deniz and Sue each had a small amount of background information and/or observations that allowed them to draw particular inferences. Regardless, they are licensed to use *indeed*. Unfortunately, I do not have a particularly satisfying explanation. I will claim that this is not a case of *indeed* being used despite lower epistemic authority, but instead a demonstration of the fact that "equal epistemic authority" is quite a vague notion. It may be that one only has to get within a certain range of their addressee's knowledge to be considered "equal," such that there is more freedom to use *indeed* than we might expect from the data in the rest of this section. Further work might examine whether evidentiality hierarchies play any role in determining equality of REA (i.e., what types of evidence can be considered "equal" for particular contexts); for now, though, I will stick with more clear-cut cases as I explore further predictions and benefits of an REA-based account of *indeed*.

6. Incompatibility with rising intonation

There is not yet a consensus on the nature of the pragmatic effects of rising declaratives. Gunlogson (2008) and Malamud and Stevenson (2015) propose that rising declaratives signal contingent commitment to a proposition p . The speaker is not licensed as a source, and requires the addressee to commit to p as a source before he himself can fully commit. In other words, the speaker marks himself as dependent, and as having less epistemic authority than the addressee. Farkas and Roelofsen (2017) offer a rather different analysis: In uttering a rising declarative, the speaker does not commit to p . Rather, they signal that they have some evidence for p but that they have at most low credence in p relative to $\neg p$. In most cases, this has the same effect as Gunlogson's account: It cedes epistemic authority to the addressee, such that he is expected to commit to one of the possibilities on the Table as a source. As I claim *indeed* to mark the exact opposite epistemic authority levels as rising declaratives, we would predict *indeed* to be incompatible with rising intonation in most contexts. This prediction seems to be borne out in the data:

(29) Context: A substitute teacher is taking attendance, and consults a student who seems to know everyone in the class.

Teacher: Is that James over there? / That's James over there?

Student (unsure): #Indeed? / Yes? / Yeah?

As Farkas and Roelofsen (2017) point out, though, there are several types of rising declaratives, and not all of them mark the hearer as lacking epistemic authority. There are certain contexts in which the speaker seeks to *emphasize* their greater epistemic authority. When a highly authoritative participant signals low credence in the stated

possibility p , he conveys bias toward $\neg p$, as well as an expectation that the addressee commit to $\neg p$ as well. This accounts for the use of rising declaratives to express disbelief, to correct someone, or as a snide response to some situation or claim. For example:

(30) Context: *Mother asks her child to set the table and he does a particularly bad job of it but appears to consider the chore finished.*

Mother: This table is set? Where are the glasses? Where are the napkins?

Because a disbelieving or snide rising declarative is not only compatible with high authority, but in fact leverages it, we would expect *indeed* to be permitted in such contexts. The data bear this out as well:

(31) Mother: He has strep throat.

Doctor: Indeed? My examination and lab test indicate otherwise.

(32) A: One of the crimes was embezzlement, but that's the lesser offense.

B: Indeed? Embezzlement is quite serious. (COCA)

In (31), the doctor emphasizes her greater knowledge about the child's condition while expressing low credence in his mother's claim; in doing so, the doctor (rather rudely) conveys that she believes the child does not have strep, and that she expects his mother to agree. In (32), B uses *indeed* to emphasize his high epistemic authority regarding the severity of crimes, while the rising intonation signals doubt that embezzlement should be considered a lesser offense. This is a welcome result: This section has demonstrated that, as my analysis predicts, *indeed* cannot be used in rising declaratives intended to signal low speaker authority, but is acceptable in snide or surprised rising declaratives that intentionally emphasize the speaker's high relative authority.

It is also worth noting that these data can serve as evidence in favor of Farkas and Roelofsen's account over Gunlogson's and Malamud and Stevenson's. The latter authors'

proposals, which rely on contingent commitments, would not be easily applied to cases where the speaker is showing bias for the opposite proposition. Furthermore, contingent commitments by their nature request ratification by the addressee; this is quite intuitively problematic for the RD-speaker in (30)-(32), and would also yield the incorrect predictions for *indeed* in these cases.

6.1. Speaker-new information

A corpus search for *indeed* ? revealed several tokens of *indeed* with (presumed) rising intonation in response to speaker-new information. For example:

- (33) A: Leah did mention something about an urgent matter concerning Sarah.
B: Indeed? (Davies 2008)

Such examples, in which *indeed* is being used to mean “Is this a fact?”, are doubly problematic: First, we would reason that *indeed* cannot be used in response to speaker-new information, since it requires that the speaker be at least as authoritative as the addressee; since the addressee is generally the source of that new information in situations like (33). Second, this does not seem to constitute one of the special cases described by Farkas and Roelofsen; B has no claim to authority, and does have the grounds to challenging the information provided by A. Rather, (33) resembles the cases in which the speaker has evidence for a claim, but defers to the addressee as a higher authority. On both fronts we find ourselves at odds with my original claim that *indeed* marks equal or greater epistemic authority.

Fortunately, a closer examination of the data reveals an interesting pattern: COCA’s examples of rising *indeed* without a claim to authority seem to all be from

historical fiction and medieval fantasy novels. I have not yet found a current natural example of this construction. It is possible that these instances of non-authoritative rising indeed are not actually part of modern English, but instead are part of people's attempted recreation of archaic, high-register language. Perhaps indeed is used in these contexts because it is strongly associated with agreement (despite this not being part of its semantics), and it is a higher register than other common agreement particles. In any event, I believe that these data do not need to be accounted for in the same way as naturally-occurring examples; thus, I believe that my original claim still stands.

Throughout this section, I have argued that *indeed* and *correct* each have a presupposition relating to the speaker's epistemic authority relative to the addressee's. Thus far, we have only considered examples in which the REA configuration concerned authority over some proposition; however, the following section will reveal that *indeed* can be used to respond to speech acts, and in this capacity seems to reflect authority over a discourse move.

7. Additional uses of *indeed*

Indeed has several functions beyond the one considered in the majority of this paper. Two will be considered here, and rather different conclusions will be drawn in each case. First I will address *indeed* as it is used to respond to speech acts, and I will argue that with proper modifications to the model of discourse, it can be understood in the same way as *indeed* as a response to propositions. I will then examine a common use of *indeed* in monologue, which bears some resemblance to responsive *indeed* but is ultimately not the same.

7.1. Anaphora to speech acts

In this section, we consider the consequences of (34) and (35), in which *indeed* is being used as a speech act anaphor. That is, it is not committing the speaker to a previously highlighted claim accepting its addition to the common ground, but instead is sanctioning the asking of the question, and accepting its addition to the Table.

- (34) A: Why would John do such a thing?
B: Why indeed. We may never know his motives.
- (35) A: Who could have done this?
B: Who indeed. Let us consider the possibilities...

Intuitively, this requires the same presupposition of equal or greater epistemic authority as the more typical use of *indeed*; in this case, though, the speaker is not deciding the issue or claiming epistemic authority over the answer. Rather, their epistemic authority concerns the conversational context, and what constitutes a suitable discourse move in that context. However, there is a further restriction that can refine our understanding of *indeed* as a speech act anaphor: *Indeed* is only acceptable as a speech

act anaphor when the antecedent question is not easily answered.⁸ As (36) and (37) demonstrate, it is infelicitous to use *indeed* as a speech act response, and then immediately provide the answer:

- (36) A: Why would John do such a thing?
B: #Why indeed. He planned to collect the insurance money.
- (37) A: Who could have done this?
B: #Who indeed. John did it.

This suggests that in each case, B is not merely applauding A's request for information, or touting their own knowledge of appropriate discourse moves. B's contribution is more specifically approving A's proposal to change the topic of conversation/QUD. *Who indeed* does not simply mean "You are right to ask who," it means "We should discuss who." This is an important distinction that must guide the implementation of speech act anaphora in our model of discourse.

Mechanisms for speech act anaphora have been proposed in other discourse models, including Krifka's (2013) proposal of ActP, a level of syntactic structure present in all sentences, which makes the speech act available as a discourse referent. While this

⁸ This may be related to the reason why *indeed* tends to be used as a speech act anaphor with questions like *why*. However, there are contexts in which it may be used with polar questions, which have much smaller sets of possible answers. Sandy Chung (p.c.) has provided the following example:

- (1) Context: A couple is having a serious argument. B acts as though he is leaving, but is continuing to argue.
- A: So are you staying or going?
B: Indeed! (That's the question, isn't it.)

As in (34) and (35), this is acceptable if we believe A's question is difficult to answer. However, I do not consider this case in depth because consultants generally find this example more difficult to interpret.

is a possible way forward, it does not seem to capture the facts above; it allows for commenting on utterances, but does not specifically allow for comments on updates to the QUD. Furthermore, I believe it is worth considering an analysis that is more in keeping with the Tabletop model of discourse, given that I have used this model to explain the anaphoric properties of *indeed*. The Tabletop model itself, as first described by Farkas and Bruce (2010), is a “slowed down” model of discourse: In the classic Stalnakerian model, making an assertion automatically adds its propositional content to the common ground. In proposing the Table, Farkas and Bruce argued that assertions are merely proposals for cg updates, and that a proposition on the Table can be accepted, rejected, or commented on before being added to the common ground (or not). Following this reasoning, we can slow down the discourse further such that speech acts can be accepted, rejected, or commented upon in the same way that propositions can.

Farkas (p.c.) has suggested a modification that would allow for the type of commenting seen in (34) and (35): Rather than propositions themselves being placed on the Table, speech acts are placed there. In making a speech act, one is proposing to address a given issue (i.e., change the QUD). In most cases, the interlocutor tacitly agrees to this change, and the new issue is addressed as cg updates related to it are proposed; however, it is also possible for the interlocutor to reject or comment upon the proposed change. (Note the resemblance to Farkas and Bruce’s original view of the Table: One proposes an update to the cg, and it is typically accepted, though it may be commented upon.) This analysis makes specific reference to speech acts as proposals for a new QUD, and as such are more in line with the data in (34)-(37). We also benefit from an elegant

integration of speech-act-responsive *indeed* and proposition-responsive *indeed*; responsive *indeed* can be understood as affirming whatever is on the Table, whether that be a speech act or its propositional contents.

While this integration into a general-purpose response particle is appealing, there are some questions that have yet to be resolved. Recall that I argued that in propositional cases, responsive *indeed* commits the speaker to the prejacent. In the speech act cases above, it is not clear that *indeed* has a prejacent at all. Prejacentes have thus far been formulated to contain the propositional content of a previous speech act; in cases like (34) and (35), where the contribution of *indeed* is not propositional, we would not necessarily expect a propositional prejacent. One might argue that *why* and *who* are acting as a type of prejacent, restating the question instead of the proposition expressed in the antecedent. If that is the case, then we can understand *indeed* to be signaling the speaker's own utterance of the prejacent; in the case of propositions, the declarative nature of the utterance serves to commit the speaker to p . In the case of questions/speech acts, the speaker is echoing the question so as to sanction the updated QUD. However, the current dataset is small, and so I am not prepared to claim that *why* is necessarily a prejacent.

7.2. Resemblance marking with *indeed*

Indeed is common not only as a response particle, but also in monologue as well. In these cases, it would be quite difficult to account for its distribution in terms of REA; while there is something to be said for knowing one's audience, it seems unlikely that an author would be consistently marking epistemic authority relative to an unknown addressee, and without responding to a given proposition. Still, it is worth examining

these uses of *indeed*, as a thorough understanding of its responsive aspect will surely ignite curiosity in its other guises. Ultimately, I will argue that while these usages seem to be related to the responsive version of *indeed*, they are ultimately different things.

In monologue, *indeed* is often used as a discourse marker (DM) (Blakemore 2004, Brasoveanu p.c.); that is, it is used to indicate how a given sentence is connected to the preceding context. In past work (McGarry 2016), I argued that Kehler’s (2004) theory of coherence relations, and in particular the resemblance relation category, accounts for many of the effects of DM *indeed*. Relations in the resemblance category pair entities across two clauses and establish parallels or contrasts between them. The canonical sub-relation for this category is parallel, defined in (38):

- (38) **PARALLEL:** Infer $p(a_1, a_2, \dots)$ from the assertion of S_1 and $p(b_1, b_2, \dots)$ from the assertion of S_2 , where for some vector of sets of properties q^\rightarrow , $q_i(a_i)$ and $q_i(b_i)$ for all i . (Kehler 2004)

Essentially, the reader picks out a set of entities in each sentence to which a common property applies. q^\rightarrow establishes parallelism between entities from each sentence; that is, it pairs an entity from S_1 with an entity from S_2 based on some similarity between them.

For example:

- (39) Dick is worried about defense spending. George is concerned with education policy. (Kehler 2004)

The sentence-internal groups of entities are $\{\text{Dick, defense spending}\}_{S_1}$ and $\{\text{George, education policy}\}_{S_2}$, p is “x is worried about y,” and q^\rightarrow indicates parallelism between Dick and George as high-ranking officials who are worried about some issue. An example of a parallel relation marked with *indeed* is given in (40):

- (40) Serra almost certainly knew of Rauschenberg's dramatic gesture by the mid-1960s. Indeed, he was probably also familiar with John Cage's reference to the gesture, in his 1961 book *Silence* (Serra would, after all, later dedicate a book of his own to Cage). (Davies 2008)

The parallel entities here are the (identical) subjects, as well as Rauschenberg's gesture and Cage's reference thereto. In this example, the consistent relation between the entities within each sentence p can be thought of as "probable awareness."

Generalization, defined in (41), also established parallel sets of entities under a common property; in this case, though, the entities in the first clause are examples of those in the second:

- (41) **GENERALIZATION:** Infer $p(a_1, a_2, \dots)$ from the assertion of S_1 and $p(b_1, b_2, \dots)$ from the assertion of S_2 , where a_i is a member or subset of b_i for some i . (Kehler 2004)

This relation is exemplified in (42). The *educational policymakers* mentioned in the first sentence are generalized to *all stakeholders*, mentioned in the second sentence, with roughly the same properties holding for these entities:

- (42) Educational policymakers should have realistic perspectives on teaching performances. Indeed, all stakeholders in the school community must call into question the "failure" (Berliner, 2004, p. 15) to provide improvement opportunities and collaborative methods for teachers. (Davies 2008)

Perhaps the most response-like resemblance relation is elaboration, wherein a speaker conveys the same information across two sentences, though generally one sentence is more informative than the other. Elaboration is defined in (43), and exemplified (with *indeed*) in (44) and (45).

- (43) **ELABORATION:** Infer $p(a_1, a_2, \dots)$ from the assertions of S_1 and S_2 . Kehler (2004)

- (44) Yet even in these conditions, most fail to make a year's worth of progress for every year spent in school. Indeed, the participants in this study averaged only five or six months' worth of progress annually across their years of schooling. (Davies 2008)
- (45) He throws his paintings into the river; indeed, he emphasizes that action by repeating it three times. (Davies 2008)

There is an additional resemblance relation, contrast, defined and exemplified in (46)-(49). I have not yet found a case of *indeed* being used to mark this relation; it is possible that there is some additional component to monologic *indeed*'s meaning—related to agreement, expectation, or something else entirely—that rules this out. Further investigation is needed here. Despite this gap, it seems reasonable to treat *indeed* as a resemblance marker, perhaps with additional constraints on its use.

- (46) **CONTRAST (i)**: Infer $p(a_1, a_2, \dots)$ from the assertion of S_1 and $\neg p(b_1, b_2, \dots)$ from the assertion of S_2 , where for some vector of sets of properties $q^{\rightarrow}, q_i(a_i)$ and $q_i(b_i)$ for all i . Kehler (2004)
- (47) Dick supports a raise in defense spending, but George opposes it. Kehler (2004)
- (48) **CONTRAST (ii)**: Infer $p(a_1, a_2, \dots)$ from the assertion of S_1 and $p(b_1, b_2, \dots)$ from the assertion of S_2 , where for some vector of sets of properties $q^{\rightarrow}, q_i(a_i)$ and $\neg q_i(b_i)$ for some i . Kehler (2004)
- (49) Dick supports a raise in defense spending, but George wants a raise in education investment. Kehler (2004)

Having established that *indeed* can be used as a discourse marker in cases where a resemblance relation (and perhaps some further constraint) stands between two sentences, I turn to the question of whether that usage is the same as the responsive one discussed throughout this paper. In other words, I consider whether question-answer pairs can be characterized by a resemblance relation. Intuitively, this does seem to be the case:

Agreeing responses in particular hinge on the fact that the response conveys (some of) the same information as does the initiative. In considering the semantics of questions (Hamblin 1973, Karttunen 1977), it becomes apparent that responses resemble Kehler's elaboration cases: Questions denote the set of propositions that are possible answers to the question. In the Tabletop model, polar questions put two propositions $\{p, \neg p\}$ on the Table; an informative response will have semantic content consisting of either p or $\neg p$. In other words, the information conveyed by an informative response will be the same as some of the information conveyed by a question. This congruence is very much in line with Kehler's definition of elaboration (43).

It is worth noting that responsive *indeed* is not solely used in response to questions; this paper has considered numerous cases in which it is used as a response to declaratives, and in these cases the response cannot in principle be considered a true elaboration. It is true that the same information is conveyed in the antecedent and the response, but in the examples Kehler provides, there is additional information conveyed in S_2 . In other words, sentences characterized by the elaboration relation exhibit an increase in informativeness. Responsive *indeed* with a declarative antecedent typically does not constitute a more informative statement, but rather an identical one. Such a relationship is not felicitous in monologue. Also worth noting are the disagreement cases considered in Section 2; *indeed* can be used to disagree with a negative initiative $\neg p$, resulting in a sentence with the content p . This could be considered a contrast relation, a function that monologic *indeed* may not be compatible with. It is certainly not an

elaboration. This suggests that while responses seem to have many properties of the elaboration relation, we should not consider them to be the same thing.

Further evidence against a claim that monologic *indeed* and responsive *indeed* are one and the same comes from my argument that the latter has presuppositions for REA. Monologic *indeed* as it has been discussed thus far cannot involve relative epistemic authority; since it is used to mark the relationship between two sentences by the same author, it cannot be taken to suggest a comparison of that speaker's authority against itself. This is quite different from responsive *indeed*, which necessarily takes two speakers' evidential bases with regard to some proposition into account. Based on these crucial distinctions, I conclude that monologic and responsive *indeed* be considered separate, if related, entities. In other words, this seems to be a case of polysemy, in which the two functions bear some resemblance to each other.

8. REA in responses cross-linguistically: *Wohl*

It is important to question whether REA is part of responses beyond *indeed* and *correct*—or indeed, beyond English. Toward this end, I examine two German response particles, *wohl* and *richtig*. *Richtig* is generally translated as ‘correct,’ and seems to be more or less identical to English in meaning and in terms of its REA requirements. *Wohl* is a bit more interesting; it is a modal particle that is often associated with expressing probability (or, more precisely, inferential evidentiality) (Kraus 2014). Though it has several uses in monologue, its responsive function is typically translated as ‘probably,’ in that it expresses agreement without certainty. However, when we ensure that the speaker’s response is based on inference alone, we see that *wohl* has the same REA constraints as *indeed*. Consider the following data, which follow the same scenario as Section 5.

Scenario recap: A mother infers that her son has strep throat. She has more knowledge about the illness than her son’s teacher, but less than the doctor who has run a lab test. The mother and the doctor have equal epistemic authority with regard to whether the child has a fever.

(50) SPEAKER > ADDRESSEE

Teacher: He has strep, doesn’t he?

Mother: Wohl./Richtig.

(51) SPEAKER = ADDRESSEE

Doctor: (According to this thermometer,) he has a fever.

Mother: Wohl./ #Richtig.

(52) SPEAKER < ADDRESSEE

Doctor: (According to this test,) he has strep.

Mother: #Wohl./ #Richtig.

These are exactly the results we obtain in Section 5. *Wohl* requires equal or greater speaker epistemic authority, while *richtig* requires greater authority. This supports the cross-linguistic application of relative epistemic authority in responses.

Because *wohl* has additional requirements of inferential evidentiality, it can be thought of as *indeed* with a ceiling on the speaker's epistemic authority: Their evidential base must be stronger than the addressee's, but it must not contain direct evidence. This is illustrated by the contrast between (53) and (54)-(55); though the REA configuration is correct in each example, *wohl*'s felicity changes as the type of evidence becomes stronger than inferential.

(53) SPEAKER > ADDRESSEE, inference from test, uncertainty

Mother: Does he have strep?

Doctor: (Based on this test), *wohl*.

(54) SPEAKER > ADDRESSEE, direct observation, certainty

Mother: Does he have a broken leg?

Doctor: (Based on this x-ray), #*wohl*.

(55) SPEAKER > ADDRESSEE, DIRECT OBSERVATION, CERTAINTY

Doctor: This must be James.

Mother: #*Wohl*.

This combination of evidentiality and REA folds quite nicely into Northrup's (2014) model of discourse. Northrup deviated from Farkas and Roloefsen's proposed system for discourse commitment (DC_X) lists in arguing that it does not contain a simple set of propositions; rather, commitments "are pairs of a proposition and the evidential base that supports it" (2014:54). In unmarked cases, a proposition is paired with a default evidential base; however, it may be weakened, strengthened, or more specifically

characterized if evidential markers are used, or if one uses evidentially meaningful intonation or sentence types (i.e., a rising declarative). In the case of *wohl*, an utterance is marked as having a weak evidential base (in that inference is weaker than direct observation (e.g., Faller 2002)), which is also maximal (i.e., greater than the other participant's evidential base). This is in contrast with *indeed*, which simply marks a maximal evidential base, without any weakening or strengthening beyond the default.⁹

Wohl provides further evidence in favor of REA-based analyses of response particles. Furthermore, it shows REA combining with evidentiality to constrain the speaker's evidential base along two metrics; this is very much in line with Northrup's analysis of Japanese discourse particles and similar phenomena, and further supports his argument that one's authority to commit to a proposition is necessarily tied to, and tracked alongside, one's evidential base.

⁹ It is worth noting that *indeed* does not have such strict evidential limitations. It is compatible with answers derived from direct evidence (b), inference (c), and reported evidence (d):

- (2) a. Paul is the murderer, isn't he?
- b. Indeed he is. I saw him do it.
- c. Indeed he is. All of the forensic evidence points to him.
- d. Indeed he is. Mary says that she saw him do it.

9. Conclusion

This paper has been a case study of two non-polar response particles, a category that has not yet received much attention in the pragmatic literature. *Indeed* works very similarly to *yes* and *no*, in that it commits the speaker to a prejacent whose content may be the same or the opposite of its antecedent's; however, *indeed*'s relationship to its prejacent is not mediated by polarity. Rather, it requires that the speaker have equal or greater epistemic authority over the prejacent relative to the addressee. *Correct* is quite different in its anaphoric mechanisms, which results in a more limited distribution. It lacks a prejacent, and so is itself anaphoric. *Correct* affirms the antecedent, over which the speaker must have greater epistemic authority than the addressee.

Going forward, this project will flesh out the analysis of *indeed* as a speech act anaphor, which will hopefully result in an updated model of discourse and a more concrete description of *indeed*'s semantics. I also hope to further explore the link between REA and the evidentiality hierarchy, in part by examining a wider range of non-English response particles.

Appendix A The *correct* approach to anaphora

Rawlins (p.c.) has rightly pointed out that *correct* is not necessarily an anaphor *per se*, as one can conceive of an alternate analysis of responsive *correct*: It is possible that responses such as (6)e originate as *That's correct*, with *that* being the anaphoric element which is subsequently elided. This analysis is appealing in that we do not have to grant anaphoric powers to *correct*, and we can treat responsive *correct* as just a particular usage of the adjective *correct*. However, it has certain disadvantages. First, consider the anaphoric properties of *that*: as (56) shows, it has the ability to refer not only to the previous utterance, but also to an embedded sentence:

- (56) a. Mel said that Sue is quitting.
b. That's correct. It was indeed Mel who told us.
c. That's correct. Friday is her last day.
- that* = Mel said that Sue is quitting.
that = Sue is quitting.

As (57) illustrates, responsive *correct* does not share this ability. It cannot refer to the embedded clause:

- (57) a. Mel said that Sue is quitting.
b. Correct. It was indeed Mel who told us.
c. #Correct. Friday is her last day.
- correct* = Mel said that Sue is quitting.
correct = Sue is quitting.

This may simply indicate that there are cases in which *that's* cannot be deleted; there are certainly cases in which the prejacent of *yes*, *no*, and *indeed* cannot be elided. And so I turn to another problem with an ellipsis account, which is the fact that not all adjectives have responsive functions. As (58) shows, a variety of adjectives can be used independently to express acceptance or rejection of some initiative, while also providing

some commentary on it. However, there are other evaluative adjectives ((58)i-j) that cannot be used in responses without *that*:

- (58)
- | | |
|---------------------------|-----------------------------|
| a. Sue is quitting. | |
| b. (That's) true. | f. *(That's) silly. |
| c. (That's) interesting. | g. *(That's) upsetting. |
| d. (That's) unbelievable. | h. *(That's) (un)fortunate. |
| e. (That's) fine. | i. *(That's) expected. |

It would not be unreasonable to claim that a handful of adjectives have acquired the anaphoric properties necessary to act as response particles. It is not clear, however, whether this option is more appealing than claiming that some deletion process is used only when certain adjectives are used as a response. It is also worth noting that some acceptable adjectives (particularly *unbelievable*) are commonly used in exclamatives, and it is not clear whether this enables a responsive use, or whether it would be a confound in one's attempt to determine which adjectives can be used responsively.

Though the evidence remains rather murky, I will retain my original claim that *correct* is anaphoric, and that it commits the speaker to its antecedent. The interested reader is encouraged to pursue a *that*-deletion hypothesis, and to further consider which adjectives permit a responsive usage. Note that my claim is not crucial to the vast majority of claims made beyond this section of my paper.

Appendix B Polarity-based accounts of *indeed*

This appendix addresses an alternative account of *indeed* based on the semantics of polar response particles. Although certain aspects of this literature will shed light on the anaphoric properties of *indeed*, I will ultimately conclude that *indeed* should not be treated as a polar response particle.

B.1. *Indeed* and *yes*

As discussed in Section 2, there might appear to be justification for treating *indeed* like a response particle. It has an extremely similar distribution to *yes*, in that it is licensed in responses that agree with some initiative, or in positive disagreeing responses. This data is presented again in (59)-(62). (Though I will consider another account, I include Farkas and Roelofsen's polarity features here because they provide a clear characterization of the response and its relation to the initiative.)

(59) *INDEED*: POSITIVE INITIATIVE

- a. It's cold out today./Is it cold out today?
- b. **Indeed** (it is). [+]/[AGREE]
- c. #Indeed (it is not). [-]/[REVERSE]

(60) *INDEED*: NEGATIVE INITIATIVE

- a. It's not cold out today./Is it not cold out today?
- b. **Indeed** (it is). [+]/[REVERSE]
- c. Indeed (it is not). [-]/[AGREE]

(61) *YES*: POSITIVE INITIATIVE

- a. It's cold out today./Is it cold out today?
- b. **Yes** (it is). [+]/[AGREE]
- c. #Yes (it is not). [-]/[REVERSE]

(62) *YES*: NEGATIVE INITIATIVE

- a. It's not cold out today./Is it not cold out today?
- b. **Yes** (it is). [+]/[REVERSE]
- c. Yes (it is not). [-]/[AGREE]

For this reason, it is tempting to pursue a polarity-based account in which *indeed* shares properties with *yes*, with *indeed* having additional authority-related conditions in its semantics.

B.2. Farkas and Roelofsen’s polarity features

Farkas and Roelofsen characterize polar responses according to both absolute and relative polarity. Absolute polarity features reflect whether the response is positive [+] or negative [-]. Relative polarity features reflect whether the response has the same ([AGREE]) polarity as the possibility highlighted by the initiative, or the opposite ([REVERSE]). They argue that both [+] and [AGREE] are realized as *yes*. Such an analysis seems possible for *indeed*, given the distribution shown above. However, there is data that suggests that *indeed* does not have the same absolute polarity features as *yes*:

- (63) ALTERNATIVE POLAR INTERROGATIVE
- a. Is it cold out today, or not?
 - b. #Indeed.
 - c. Yes.

As previously mentioned, *indeed* is an infelicitous response to alternative polar questions. It is ambiguous, as it can be interpreted as referring to either highlighted possibility. We can disambiguate the response by including a prejacent, but this does not change the fact that *indeed* seems to be blind to the absolute polarity of the initiative. In this way it contrasts with *yes*, which is able to fall back on its unambiguous positive interpretation when relative polarity fails (Roelofsen & Farkas 2015). It is also worth mentioning that we cannot consider *indeed* to be an exponent of only [AGREE]—that is, it cannot simply

A closer look at the details of Krifka’s account cast doubt on the value of extending it to *indeed*. To support his analysis, Krifka addresses the fact that the various possible responses to a negative initiative have different degrees of markedness. He presents (66), the potential responses to (64), and notes the ways in which the responses (other than (66)c) are marked:

- (66) a. Yes. ASSERT(d') ‘**Yes**, he **did!**’ Rejecting accent, with clause.
 b. Yes. ASSERT(d) ‘Yes, he didn’t.’ Natural, but with clause.
 c. No. ASSERT(¬d') ‘No (he didn’t).’ Natural, clause not necessary.
 d. No. ASSERT(¬d) ‘**No**, he **did!**’ Rejecting accent, with clause.
 (Krifka 2013:(50))

He claims that two pragmatic constraints create a ranking of the possible responses, such that suboptimal responses must be marked with an appositive clause and/or special intonation. There is a constraint against disagreeing with one’s addressee (*DISAGR) and another against referring to the negative discourse referent (*NEGDR). The following tableau reflects his evaluations of *yes* and *no* (Krifka 2013:(52)), and I have added *indeed* to show the predictions of this account:

Table B.1: Ranking of potential responses to (64)

	Expression	Reference	Resulting meaning	*DISAGR	*NEGDR	Favorite
a	<i>yes</i>	d'	‘He did.’	*		((←))
b	<i>yes</i>	d	‘He didn’t.’		*	(←)
c	<i>no</i>	d'	‘He didn’t.’			←
d	<i>no</i>	d	‘He did.’	*	*	
e	<i>indeed</i>	d'	‘He did.’	*		((←))
f	<i>indeed</i>	d	‘He didn’t.’		*	(←)

Parentheses around an arrow indicate greater markedness; because an agreeing response with *yes* (B.1.b) has one set of parentheses, it is marked with an appositive clause.

Disagreeing *yes* (B.1.a) is marked with an appositive and rejecting intonation. Disagreeing *no* is similarly marked because it is the least optimal candidate. This correctly predicts a disagreeing response with *indeed* to be marked with intonation and a clause. However, it also predicts an agreeing *indeed* response to a negative initiative to be marked with a clause. However, *indeed* is not a marked response to a negative initiative, and it does not require an appositive:

(67) Teacher: He doesn't have strep.
Mother: Indeed (he does not).

(68) Doctor: He doesn't have a fever.
Mother: Indeed (he does not).

There is no reason to believe that *indeed* is subject to a *NEGDR constraint. While this does not mean that we should reject Krifka's account of *yes* and *no*, it does give us good reason to avoid applying such an account to *indeed*. However, I will briefly address an aspect of Krifka's work that seems applicable to another usage of *indeed*: reference to speech acts.

While NegP and TP are claimed to generate propositional discourse referents, Krifka proposes that the category ActP generates a speech act discourse referent. This is available to adverbs such as *maybe* and *right*, and there is reason to suspect that it is also available to *indeed*:

(69) A: Why would John do such a thing?
B: Why indeed. We may never know his motives.

(70) Context: A couple is having a serious argument. B acts as though he is leaving, but is continuing to argue.
A: So are you staying or going?

B: Indeed!¹⁰

In both of these cases, B means to convey that A has asked the right question—that is, that he was correct to produce that particular speech act. This is in line with an epistemic authority account, in that B may be claiming sourcehood and at least equal knowledge of the situation and of which questions are appropriate in a particular scenario. However, we cannot claim that *indeed* always functions as a speech act anaphor, as (12) in Section 3 (given again in (71)) illustrated that *indeed* is licensed not simply to affirm questions, but to answer them:

(71) POLAR INTERROGATIVE

A: Is it cold out today?

B: Indeed. (= It is cold. ≠That question is the correct discourse move.)

If we are to integrate speech act anaphora into an authority-based account of *indeed*, we must account for the fact that its use as a speech act anaphor is limited. We must also determine whether *indeed* in cases like (71) is anaphoric as well, perhaps to propositions. I leave this issue for future drafts, and for now conclude that *indeed* cannot easily be accounted for as a polar response particle.

¹⁰ Thanks to Sandy Chung for thinking of this example.

Appendix C *Indeed* and emphatic positive polarity

As was briefly mentioned above, there is some question as to whether *indeed* can be used in a disagreeing response to any antecedent, or whether it is reserved for disagreeing with negative antecedents:

- (72) DISAGREEMENT WITH NEGATIVE ANTECEDENT
 - a. John is not the murderer.
 - b. **Indeed** he **is**!

- (73) DISAGREEMENT WITH POSITIVE ANTECEDENT
 - a. John is the murderer.
 - b. ?**Indeed** he is **not**!

The tendency to prefer (72) over (73) may be attributable to an association between *indeed* and an emphasis on positive polarity. In the previous section, I rejected an analysis of responsive *indeed* as an exponent of positive polarity; here I explore the use of *indeed* sentence medially (i.e., not as a response particle) in rejections, as well as its use in conditionals. It seems that *indeed* can function as an emphatic marker of positive polarity in certain syntactic contexts, and this usage has implications for its acceptability in disagreeing responses.

McGarry (2015) investigated the syntactic properties of clause-medial *indeed*, with the intention of determining its syntactic category. I found that it shared many properties with the polarity heads *not*, *so*, and *too*, and was completely unlike the various adverbs considered:

- (74) a. He *(does) not/too/so want to go.
b. He *(does) indeed want to go.
c. He (*does) totally/always/probably wants to go.

- (75) a. I will not/too/so (turn my draft in on time)!
b. I will indeed (turn my draft in on time)!

- c. I will totally/always/probably/simple *(turn my draft in on time)!
- (76)
- a. *I not/too/so will (turn my draft in on time).
 - b. *I indeed will (turn my draft in on time).
 - c. I totally/always/probably will (turn my draft in on time).

Clause-medial *indeed*, like *not/too/so*, blocks T-lowering and licenses VP ellipsis. This suggests that it occupies the same syntactic position as *not*, i.e., the head of PolP. As such, we would predict it to be unable to co-occur with *not*, thus ruling out disagreement with positive antecedents. Thus we can understand the contrast between (72) and (73) as being related to the starker contrast between (77) and (78):

- (77) DISAGREEMENT WITH NEGATIVE ANTECEDENT
- a. John is not the murderer.
 - b. He is **indeed** the murderer!
- (78) DISAGREEMENT WITH POSITIVE ANTECEDENT
- a. John is the murderer.
 - b. *He is **indeed not** the murderer!

As I argue in my Section 7.2 discussion of monologic *indeed*, this is a case of polysemy. Due to its position in the clause, it is necessarily different from responsive *indeed* (which occurs sentence-initially and has a preajacent). One might argue that it is still a responsive use, in that utterances containing clause-medial *indeed* may be infelicitous without an antecedent (out of the blue). However, this may just as easily be attributed to the nature of contrastive focus; there must be sufficient pragmatic grounds for emphasizing the positive polarity, which in most cases necessitates a negated antecedent; this also explains why using *so* or *too* as a polarity head is most acceptable in response to a negative antecedent. In any event, it is possible that this emphatic polarity

usage influences people's interpretation of the responsive *indeed*, such that reversal of positive initiatives is degraded.

Indeed can also appear in a different position in monologue, with similar effects of emphasizing positive polarity. It is commonly used in conditionals:

(79) If indeed this hypothesis is correct, we expect the following effects...

(80) The Giants second-half demise—if indeed it is a demise—is reminiscent of a meltdown. (Davies 2008)

Once again, it is worth pointing out how this usage differs from a responsive one: Perhaps the most notable distinction is that responsive *indeed* commits the speaker to its prejacent, while conditional *indeed* do not. Given the presence of the conditional, speaker of *indeed* may have low credence in a proposition (80), or may totally lack knowledge as to which possibility is correct, as in discussing future possibilities (81):

(81) A dominant SNP, if indeed they wipe the floor with Labour, as the polls predict, will be ideally placed either to torture a minority Miliband government, or to cast any Conservative administration as illegitimate. (Davies 2008)

As in the above cases, conditional *indeed* seems to be marking positive polarity contrastively: It presupposes the possibility that the hypothesis is not correct in (79), or that it is not a demise in (80), but is primarily concerned with the consequent of the positive alternative. At this time, I do not have an analysis of *indeed* in conditionals. However, it seems that *indeed* serves a similar function here as it does in the clause-medial cases discussed in this appendix. While these functions are different from responsive *indeed*, the polarity-contrasting property may influence the acceptability of *indeed* as a disagreeing response to positive initiatives.

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