

“No, I AM”: What are you saying “no” to?¹

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Abstract

The English particle “no” can be used in a variety of contexts. We propose that “no” is three ways ambiguous, distinguished by the type of antecedent utilized: explicit, implicit and exophoric. The second type—“no” with an implicit antecedent addresses a grounding misalignment caused by sources such as speaker’s bias. This type of “no” cannot be used bare. The current semantic theories on “no” as an answer particle to negative polar questions and assertions claim that “no” is ambiguous between confirming and rejecting the polar question or assertion. The preceding negative polar question or assertion licenses and therefore provides the content for “no” in answers like “No, I AM”. We argue instead that the ambiguity arises from whether “no” is picking an explicit antecedent—the queried proposition—or an implicit one—the questioner’s bias. We offer three predictions and show that even positive antecedents with implied bias may license the “No, I AM” type of answer; in dialogue, bare “no”s only pick up explicit antecedents; the strength of the bias in a negative question influences the rate of the second type of “no” uses. We formalize our account in the KoS framework (Ginzburg, 2012). Our analysis highlights the importance of potential mismatches between the information states of different conversational participants in meaning resolution.

Keywords:

No, negation, dialogue, non-sentential utterance, polarity particle, KoS

1. Introduction

The English polarity particle “no” has several uses: to reject a positive assertion or polar question (example (1)), and to confirm a negative assertion or polar question (example (2)); it can correct a misinterpretation (example (4)); it can be used in the context of agreement (example (5)); and it can be used as a “stop” interjection (example (6)).

- (1) -A: John likes chocolate. / Does John like chocolate?
-B: No, he doesn’t.
- (2) -A: John doesn’t like chocolate. / Does John not like chocolate?
-B: No, he doesn’t.

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- (3) -A: You don't use any credit cards, I don't imagine.
 -B: No, of course I use [them].
 (Switchboard sw3332A-ms98)
- (4) -A: How's your girlfriend?
 -B: she is no longer my girlfriend.
 -A: Ah, I'm so sorry.
 -B: No. She is my wife now.
- (5) -A: I think they should also respect the sanctity of the American home, whether it be in a house or in an apartment.
 -B: Yeah, yeah, no, I agree with you there.
 (Switchboard sw-058-2015)
- (6) (A child is about to touch the socket) Adult: No!

The multiple facets of “no” are seldom addressed together. The literature coverage is split between the answer particle uses of “no”, addressing examples (1), (2) and (3), and the “discourse marker” uses of “no”, addressing examples (4) and (5).

1.1. “No” as an answer particle

Data like examples (1), (2) and (3) are of interest to semanticists who try to account for the ambiguity of “no” as an answer particle. It has been observed that in English, “no” appears in both responses that confirm a negative assertion or polar question, and those that reject one. Some languages have an unambiguous negative particle. For example, the French particle “non” can only be used to refer to a negative situation, thus confirming a negative question or rejecting a positive one. A separate particle, “si” takes care of rejecting negative assertions/polar questions (Roelofsen and Farkas (2015)). In line with the proposal of Pope and Katz (1976), Roelofsen and Farkas propose that polar particles have two types of features, ABSOLUTE and RELATIVE. ABSOLUTE features ([+]/[-]) mark a response clause as positive or negative. [-] is marked compared to [+]. RELATIVE features ([AGREE]/[REVERSE]) mark a response as agreeing with or reversing the antecedent. [REVERSE] is more marked than [AGREE]. When “no” answers a negative polar question, the ABSOLUTE feature confirms the queried negative proposition, while the RELATIVE feature rejects the queried negative proposition. Both possibilities can be realized but the latter (rejection) is more marked.

Krifka (2013) proposes that polar questions are anaphors that pick up a salient propositional discourse referent (propDR), introduced by the antecedent. “Yes” asserts a propDR and “no” asserts its negation. A negative assertion or polar question introduces two propDRs: a positive one (more salient) and a negative one. For example, the utterance “Two plus two isn't five.” introduces the propDRs “Two plus two is five” and “Two plus two isn't five”. Thus, when the antecedent is negative, “no” can negate the positive propDR and therefore confirm it, or negate the negative propDR and therefore reject it. The former is preferred as the positive propDR is more salient. Under the theories of both Krifka (2013) and Roelofsen and Farkas (2015), the

content of “no” is provided by the preceding negative assertion or polar question.

1.2. “No” as a discourse marker

A separate set of studies on “no” come from the field of Conversational Analysis, which analyzes the “discourse marker” uses of “no”, aiming at explaining examples like (4) and (5). Lee-Goldman (2011) proposes that “no” can be used as a discourse marker to mark topic shift, to correct misunderstanding and to manage disagreement. Schegloff (2001) proposed a specific use of “no”: to mark the transition from non-serious to serious talk. Burrige and Florey (2002) study the uses of “yeah-no” in Australian English, and propose that “yeah-no” is a discourse marker with three functions propositional, textual and expressive. Propositional “yeah no” indicates both assent and dissent; textual “yeah no” provides cohesion, and expressive “yeah no” is used to express politeness. These Conversational Analysis approaches to “no” list its functions, but do not propose any underlying mechanism linking these uses.

2. Our proposal: argumentation

Building on earlier proposals (Ginzburg and Sag, 2000; Cooper and Ginzburg, 2011), we propose that “no” can be ambiguous because it can pick up different types of antecedents—explicit, implicit or exophoric:

1. **“No” with an explicit antecedent, can be used as a bare particle:** used to respond to an explicit polar question or assertion (Ginzburg and Sag, 2000; Cooper and Ginzburg, 2011). When the antecedent is positive, “no” negates it, as in (1). When the antecedent is negative, “no” reaffirms it, as in (2). In English, “nope” is a specialized lexical item with this meaning.
2. **“No” with an implicit antecedent, cannot be used as a bare particle:** used to correct a **grounding misalignment** between the interlocutors. In such situations, speaker A assumes that a proposition p is in the common ground or can enter the common ground. Speaker B disagrees with this assumption, detects the grounding misalignment, and uses “no” to reject that p is in the common ground. The source of the grounding misalignment is implicit, such as an epistemic bias (example (3)), an interpretation (example (4)), an expectation (example (5), more details on this later). Note that “no” does not assert the negation of the misaligned proposition p , but merely asserts that p should not be in the common ground. Therefore, speaker B must provide extra information to fix the misalignment in a complement clause.
3. **“No” with exophoric antecedent, can be used as a bare particle:** used as an interjection to address an exophoric event with a potential outcome, as in example (6) (Cooper and Ginzburg, 2011).

Importantly, we argue that the ambiguity of “no” as an answer to negation assertions or polar questions lies in the types of the antecedent it picks up. “No” in answers like “No, I’m not.”

(or the “ABSOLUTE” feature in Roelofsen and Farkas (2015)) refers to an explicit antecedent introduced by the preceding negative assertion or polar question, while those in answers like “No, I AM” (the “RELATIVE” feature in Roelofsen and Farkas (2015)) refers to an implicit antecedent: the bias of the question poser. This analysis resembles Krifka (2013)’s analysis of the meaning of “wrong”. He proposes that the particles “right” and “wrong” do not pick up a propositional discourse referent, but a discourse referent introduced by a speech act. The words “right” and “wrong” evaluate this referent as being justified or not. Like “no” with an implicit referent, “right” and “wrong” can only answer biased questions.

We argue that the “No, I AM” uses as in example (3) is not licensed by the preceding negative assertion or polar question, but by a bias of the question poser, grouped together with the “discourse marker” uses such as (4) and (5). In (3), “no” is licensed by speaker bias. A expects that B does not use credit cards, and proposes to enter this proposition into the common ground. B uses “no” to reject this expectation. In (4), “no” is licensed by implied misunderstanding. A’s utterance “Ah, I’m so sorry” implies an interpretation that B has split up with his girlfriend. B uses “no” to reject this interpretation, and then corrects the misalignment with the clause “she is my wife now”. In (5), what “no” rejects is more elusive. In this example, A implies that her opinion regarding the “American home” is exclusive to herself. B uses “yeah” to agree with the content of A’s utterance, and then uses “no” to cancel the assumption that the belief is exclusive to A, communicating that in fact the opinion is shared.² In all these cases, the first speaker (speaker A) implies that there is a proposition p which A believes is in, or can enter the common ground. The interlocutor B uses “no” to assert that p cannot enter the common ground. Thus this type of “no” does not pick up the proposition introduced by the immediate preceding utterance itself, but addresses a piece of belief of the interlocutor which causes a grounding misalignment. Due to the implicitness of the antecedent, the second type of “no” cannot be used bare, but must be followed by a clause that corrects the misalignment.

Let us analyse another example³. Context: A and B submitted a paper to a journal. After they submitted, they found a big mistake in the argument. They expect that the reviewers will catch the mistake and that the paper will be rejected. Then they get an notification from the journal. A reads the email, which includes a summary of the reviewer reports, and then tells B that the paper has been accepted with minor revisions.

- (7) -B: Did none of the reviewers spot our mistake?
-A: No, some of them DID, but the editor still decided to accept the paper with minor revisions.

One might argue that in this example, B’s bias/expectation was that some of the reviewers did spot the mistake, so by uttering “no”, A did not reject this expectation, but rather confirmed it.

²We do not claim that this is the meaning of “no” in all “yeah-no” sequences, nor do we claim that “yeah-no” somehow functions together as a discourse marker, countering Burridge and Florey (2002) We believe that the antecedents of “yeah” and “no” are resolved independently. Often, “yeah” expresses agreement/ compliance, but “no” can be used to refer to an explicit antecedent, for example “(SP:PS0FP) Jonathan. Don’t keep doing that. (SP:PS0FR) (unclear) (SP:PS0FX) Yeah (unclear) (SP:PS0FP) (shouting) Yeah no don’t.” (BNC KCT); or to an implicit antecedent like (5).

³We thank an anonymous reviewer of SuB21 for suggesting this example.

So it cannot be that "no" is used here to signal rejection of an implicit bias. Still, it is licensed. Therefore, the fact that the preceding polar question provides a negative explicit antecedent seems crucial.

We argue that in this example, "no" still picks up an implicit antecedent. It illustrates that a speaker's biases can have different sources. Sudo (2013) discusses two sources of biases associated with polar questions: epistemic and evidential. An epistemic bias is one where the question poser has a prior expectation towards a proposition, but there is no immediate evidence in the common ground supporting this proposition. In English, the profile of the presence of a positive epistemic bias and the absence of an evidential bias is often communicated using high-negation polar questions, such as "Won't the reviewers spot our mistake?", implying that the speaker expects that reviewers will spot their mistake. On the other hand, an evidential bias is one where there is immediate evidence in the common ground (available to both conversational participants) which supports a proposition. The profile of the presence of a negative evidential bias and presence or absence of a clashing epistemic bias is often communicated using low-negation polar questions, such as "The reviewers didn't spot our mistake?/ Did they not spot our mistake?". (7) communicates a negative evidential bias that "the reviewers did not spot our mistake" and a clashing positive epistemic bias that the speaker previously expected otherwise. The evidential bias (that no one spotted the mistake) was indirectly supported by the fact that the paper was accepted. Speaker A's response "No, some of them DID" corrects B's evidential bias.

3. Our proposal: Formalization

To formalize our proposal, let us first review the features that need to be captured. We have proposed three types of "no"s, distinguished by the type of contextual antecedent they utilize. As a novel contribution, we propose a type of "no" used when there is a *grounding misalignment*, referring to a belief proposition of the interlocutor. To capture this, we need a semantic framework that (a) centralizes the role of context, as the meaning of "no" is partially supplied (and disambiguated) by the context; (b) represents *separate* contexts for each conversation participant; and (c) has significant internal structure by means of which it represents content other than the illocutionary content of the utterance. These features are best handled by semantic theories rooted in dialogue.

3.1. KoS

KoS—a toponym, not an acronym—for recent surveys, see Ginzburg and Fernández (2010); Ginzburg (2012, 2016), for motivation of its view of grammar, see Ginzburg and Poesio (2016)) is a theory that combines an approach to semantics inspired by situation semantics and dynamic semantics with a view of interaction influenced by Conversational Analysis. On the approach developed in KoS, there is actually no single context — instead of a single context, analysis is formulated at a level of information states, one per conversational participant. Each information state consists of two 'parts', a private part and the dialogue gameboard that represents information that arises from publicized interactions. We focus on the dialogue gameboard. For

current purposes, it will be sufficient to assume a simplified specification of its *type* as given in (8)⁴—the *spkr,addr* fields allow one to track turn ownership, *Facts* represents conversationally shared assumptions, *Moves* represents the contents of moves that have been grounded, *QUD* tracks the questions currently under discussion:

(8) DGBType =_{def}

$$\left[\begin{array}{l} \text{spkr} : \text{Ind} \\ \text{addr} : \text{Ind} \\ \text{utt-time} : \text{Time} \\ \text{c-utt} : \text{addressing}(\text{spkr}, \text{addr}, \text{utt-time}) \\ \text{Facts} : \text{Set}(\text{Proposition}) \\ \text{Moves} : \text{list}(\text{illocutionaryProposition}) \\ \text{QUD} : \text{poset}(\text{Question}) \end{array} \right]$$

Lexical entries and grammar rules interface with the DGB by specifying values that the latter needs to instantiate via a field ‘dgb-params’. Thus, for instance, a lexical entry for a greeting word such as ‘hi’ involves a specification for the initial context of a conversation, one in which no moves have been made and no issues introduced:

(9)
$$\left[\begin{array}{l} \text{phon} : \text{hi} \\ \text{cat.head} = \text{interj} : \text{syncat} \\ \text{dgb-params} : \left[\begin{array}{l} \text{spkr} : \text{IND} \\ \text{addr} : \text{IND} \\ \text{utt-time} : \text{TIME} \\ \text{Moves} = \langle \rangle : \text{list}(\text{LocProp}) \\ \text{qud} = \{ \} : \text{set}(\text{Question}) \end{array} \right] \\ \text{cont} = \text{Greet}(\text{spkr}, \text{ind}, \text{utt-time}) : \text{IllocProp} \end{array} \right]$$

3.2. Three times ‘no’

Working backwards from the last example we discussed in Section 1, we first specify the type of “no” used as an interjection (the third type in Section 2). This type of ‘no’, arguably, has ontogenetic priority. The context is one in which there is a potential state of affairs or *outcome* (in example (6), the potential outcome would be the child touching the socket). “No” expresses a negative volition to this *outcome*. It is both used in addressing young children and by young children gesturally (Morgenstern et al. (2016)). Cooper and Ginzburg (2011) propose the following lexical entry for this use:

⁴The relevant notion of ‘type’ is drawn from Type Theory with Records, for which see Cooper and Ginzburg (2015).

(10) **“No” with exophoric antecedent**

$$\left[\begin{array}{l} \text{phon} : \text{no} \\ \text{cat.head} = \text{interjection} : \text{syncat} \\ \text{dgb-params} = \left[\begin{array}{l} \text{o} : \text{Outcome} \\ \text{spkr} : \text{Ind} \end{array} \right] : \text{RecType} \\ \text{cont} = \neg \text{Want}(\text{spkr}, \text{o}) : \text{Prop} \end{array} \right]$$

Now to address the “discourse marker” uses and “no” used to reject negative assertions or polar questions, “no” with implicit antecedent presupposes that there is a misalignment between the Dialogue Gameboards of the two conversational participants. One participant believes (or has high confidence) that a proposition r should be in the common ground, but the other participant believes otherwise. The belief proposition r can be introduced by biased question forms (example (3)), implicatures (example (4)), attitude verbs, e.g. “I think” (example (5)), prosody or even nonverbal means like facial expressions. The meaning of this type of “no” is represented as follows. The addressee (previous speaker) believes r , and the current speaker uses “no” to assert that r is not true.

(11) **“No” with implicit antecedent**

$$\left[\begin{array}{l} \text{phon} : \text{no} \\ \text{cat.head} = \text{interjection} : \text{syncat} \\ \text{dgb-params} : \left[\begin{array}{l} \text{spkr} : \text{Ind} \\ \text{addr} : \text{Ind} \\ \text{c} : \text{addressing}(\text{spkr}, \text{addr}) \\ \text{r} : \text{Prop} \\ \text{c1} : \text{Believe}(\text{addr}, \text{r}) \end{array} \right] \\ \text{content} = \neg \text{r} \end{array} \right]$$

Lastly, we address the examples of “no” used as an answer particle that rejects a positive question or confirms a negative one. The context of this use of “no” is its most ubiquitous in adult use, namely bare, as a response particle. It presupposes that in the context, the current Question Under Discussion (max-QUD) is a polar question.⁵ “No” always denotes a negative proposition: it negates the queried proposition if the max-QUD is positive, and is identical to the queried proposition if the max-QUD is negative. We propose the following lexical entry for this use, which refines earlier proposals in (Ginzburg and Sag, 2000; Cooper and Ginzburg, 2011).

⁵Ginzburg (2012) proposes that an assertion p gives rise to the QUD *whether p*. Therefore, this account assumes that the max-QUD after both a polar question and an assertion is a PolQuestion.

(12) “No” with explicit antecedent

$$\left[\begin{array}{l} \text{phon : no} \\ \text{cat.head = interjection : syncat} \\ \text{ARG-ST = } \langle \rangle \text{: elist(synsem)} \\ \text{dgb-params.max-qud : PolQuestion} \\ \text{cont : NegProp} \\ \text{c1: (cont = maxqud(\langle \rangle) \vee} \\ \text{maxqud(\langle \rangle) : NegProp} \wedge \text{cont = } \neg \text{maxqud(\langle \rangle)} \end{array} \right]$$

4. Three predictions and their evaluation

Our theory makes three predictions:

Prediction I: Even positive assertions (p) or polar questions ($p?$) can license the “No, I Am” type of answers, as long as the speaker implies a bias that is different from p .

Consider this example, a group of friends are talking about who should cook for the party. Most of them eat meat, and they each propose what they would cook. Amie, who is vegetarian, says “well I can do tofu burgers and soya pudding. I bet you are all excited about that!”. In this context, one can say “No, I AM. That will be interesting!”. Here, “no” is used with a positive clause, as a response to a positive antecedent. This is not allowed under current semantic theories⁶.

Prediction II: Without the help of prosody, when “no” is used as a bare particle following a negative assertion or polar question, it can only pick up an explicit antecedent (interpreted as confirmation).

To evaluate this prediction, we conducted a corpus study, looking at responses to negative polar questions in the Switchboard Dialogue Act Corpus (Jurafsky et al., 1997). Negative polar questions are rare compared to positive ones, at a ratio of 1:13. Looking at answers to negative polar questions (summarized in Table 1), we found that confirming answers out-ratios rejecting answers at 5.8:1, higher than the ratio of 2:1 following positive questions, suggesting that negative questions are more biased. When a negative question *is* rejected, most often no particle was used at all. In such cases answers containing “no” are much more likely to be a confirmation than a rejection. Bare “no”s are used only to confirm (as seen in examples (13) and (14)). They do not seem to cause confusion, as we found no clarification questions following bare “no”s. The corpus data supports our prediction that bare “no”s follow negative assertions or polar questions can only pick an explicit antecedent.

- (13) -A: Didn’t like it?
-B. No.

⁶It has been pointed out to us that this example is compatible with Krifka (2013), if we assume that an ironic utterance p introduces *not p* as a discourse referent. This argument does not contradict our analysis that here “no” picks up an implicit antecedent.

(Switchboard sw_0143_2290)

(14) A: But, I mean, it doesn't give you trouble?

-B: No.

(Switchboard sw_0762_3371)

Answer	Confirmation	Rejection	Not answered
"No" with clause	84	3	
Bare "No"	28	0	
"Yes"	13	4	
Answers without polar particle	31	15	
Total	128 (76%)	22 (13%)	19 (11%)

Table 1: Distributions of "No" and "Yes" particles used in confirming or rejecting answers to negative polar questions - data from Switchboard

A similar point was made by Roelofsen and Farkas (2015), who noticed that when answering negative assertions or polar questions, bare particle responses are considerably less felicitous than ones accompanied by an answer clause (illustrated in example (15)). Kramer and Rawlins (2012) tested the interpretation of bare particle responses in different contexts, and found that in response to a negative polar question, both bare "yes" and bare "no" are more often interpreted as confirming the negative question than rejecting it.

(15) -A: Did Peter not pass the text? / Peter didn't pass the test.

-B: ?No. /no, he didn't pass. / no, he DID pass.

Prediction III: Biased negative polar questions can license the "No, I AM" type of answers (the "RELATIVE" use), but neutral questions cannot.

Under our theory, in answers to negative polar questions, the second type of "no" (the "RELATIVE" feature under Roelofsen and Farkas (2015)) is licensed not by the explicit question itself, but by the speaker bias that is often present when a negative question is posed. Therefore, in contexts where the question poser is neutral, we should not expect this type of answer. We ran a production experiment testing whether the strength of the speaker bias in a negative polar question influences the ratio of "RELATIVE" use of "no". The prediction is that the weaker the speaker bias, the fewer the "No, I AM" type answers.

Participants: 50 participants were recruited via Amazon Mechanical Turk. We did not specify any native language requirements, but instead asked them to say what their native language(s) is/are. In this experiments, all 50 participants indicated that English was their native language. There were 28 females and 22 males. The average age was 33 years.

Design and materials: We constructed two dialogues, each containing two negative polar questions and three positive polar questions as fillers. The following turn of these questions is left empty, and participants are asked to freely fill the empty lines so that the dialogue sounds coherent and natural. The first dialogue is between the character Charlotte and a health worker who is conducting a survey in the community. The second dialogue is between Charlotte and

a newly acquainted friend. In each dialogue, we tried to make one negative question weakly biased/neutral, while the other strongly biased. To create the context for a weakly biased question, we made the negative proposition salient in the context, but imply that the questioner is genuinely ignorant of the answer. To create the context for a strongly biased question, we planted indirect and insufficient evidence which suggest that the queried negative proposition might be true. The experimental questions are:

- (16) Dialogue 1 background information: A health worker came to the community to talk to the residents because there is a worry concerning a minor infectious disease. However people who have had chickenpox have a reduced chance of contracting it.
(The health worker introduces herself and the purpose of the survey, then asks a question about where they lived and whether they have young children.)
-Health worker: You probably have heard that, if you have never had chickenpox, you are more likely to get infected. **Have you not had chickenpox before?** *(weakly biased question)*
-Charlotte: *(answer to be filled by participant)*.
...
-Health worker: Ah you guys just moved here, I see. **So is your nationality not American?** *(strongly biased question)*
-Charlotte: *(answer to be filled by participant)*.
...
- (17) Dialogue 2 background information: You are chatting with a new friend who you recently met in the local market. Her name is Sarah, and she is an American woman with a young child.
(The two characters first exchange greetings.)
-Sarah: Oh, I took my baby to the nursery this morning, and guess what I saw, a kid with chickenpox! And the child rubbed his face all over me!
-Charlotte: Haha, that's not nice. Now you stay away from me!
-Sarah: Oh my god, **have you not had chickenpox before?** *(strongly biased question)*
-Charlotte: *(answer to be filled by participant)*.
-Sarah: Then you are safe! You won't get it again.
...
(The two characters chat about childcare and then start chatting about housing)
-Sarah: We don't own our apartment and our landlord is sometimes too strict about what I can and cannot do. What about you? Do you own your apartment? **Do you not own your apartment ?** *(weakly biased question)*
-Charlotte: *(answer to be filled by participant)*.
-Sarah: Ah that makes life easier.
...

Results: we counted answers containing the second type of “no” (the “RELATIVE” uses), for example “No, I am American”, “No, I have!”, “No, I’ve gotten it before but I was really

young.”. When the bias is weak, there were 5 such answers, constituting 5.2% of all answers; when the bias is strong, there were 32 such answers, constituting 32.7% of all answers. The difference is significant under a χ^2 test: $\chi^2 = 272.15$, $p < 2.2e-16$, suggesting that the strength of epistemic bias influences the licensing of the second type (the “RELATIVE” use) of “no”.

5. Conclusions

The English particle “no” can be used in a variety of conversational contexts. So far, no analyses have been offered that cover all uses of “no”. We propose that “no” is ambiguous with three meanings, distinguished by the type of antecedent utilized: explicit, implicit and exophoric. The second type—“no” with an implicit antecedent—addresses a grounding misalignment caused by sources such as speaker’s bias. This type of “no” cannot be used bare. The current semantic theories on “no” as an answer particle to negative polar questions and assertions claim that “no” is ambiguous between confirming and rejecting the polar question or assertion. The preceding negative polar question or assertion licenses and therefore provides the content for “no” in answers like “No, I AM”. We argue instead that the ambiguity arises from whether “no” picks up an explicit antecedent—the queried proposition—or an implicit one—the questioner’s bias. We formalize our account in the KoS framework (Ginzburg, 2012). We offer three predictions and show that even positive antecedents with implied bias may license the “No, I AM” type of answer; in dialogue, bare “no”s only pick up explicit antecedents; the strength of the bias in a negative question influences the rate of the second type of “no” uses. Our analysis highlights the importance of potential mismatches between the information states of different conversational participants in meaning resolution.

Important future work involves a comprehensive corpus study to test the coverage of our account and for the implicit antecedent use—a characterization of how such antecedents can be detected.

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