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FROM *I DON'T KNOW* TO *ABSOLUTELY*: EXPRESSIONS OF NEGOTIATION IN DIALOGUE

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by

Allison Nguyen

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The Dissertation of Allison Nguyen is approved:

_____
Professor Jean E. Fox Tree, chair

_____
Professor Pranav Anand

_____
Professor Benjamin C. Storm

_____

Peter Biehl
Vice Provost and Dean of Graduate Studies

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Abstract

From *I don't know* to *absolutely*:

Expressions of Negotiation in Dialogue

By

Allison Nguyen

In this dissertation I investigate the process of negotiation in conversation through the use of hedging words. My focus is on the ways we enter into and exit negotiation processes during conversations, and how we can explicitly signal this to our partners. I also examine the degree to which speaker perception is affected by the use of negotiation words. I propose that words that signal negotiation can be measured on two scales (correction and telling), and that there are words that signal more or less negotiation depending on context, conversational medium, and personal relationship.

Experiments 1 and 2 are focused on identifying the scales upon which 13 words of negotiation fall. In Experiment 1, I investigate the words in isolation, asking participants to rate the words on a scale of telling-negotiation and correction-negotiation. In Experiment 2, I investigate the words in context, asking participants to read carrier scenarios and answer questions. I found that these words fall in roughly two groups - one that indicates high-telling low negotiation, and one that indicates low-telling high negotiation.

Study 1 is a corpus analysis with the goal of investigating the use of *I don't know* as well as *absolutely*, *totally*, *kinda* and *sorta*. I examine these words across different conversational settings (face to face, audiovisual, and text-only), different

conversational types (chit-chat versus task), and different relationships (friends versus strangers) in order to build an account of how these words are used in various situations. *I don't know* is most often used to indicate a lack of knowledge, and differs in forms across corpora - *idk* is more often used in the text-based corpus, compared to *I dunno* and *I don't know* in the spoken corpora.

Experiment 3 investigates how perceptions of the speaker change when negotiation words are used. Authority is manipulated using a *professor - TA - student* manipulation, and perceptions of knowledgeability, politeness, friendliness, and professionalism are probed. When looking at knowledge, the words that are low-telling high negotiation lower the perceived knowledge of the speaker, but the words that are high-telling low negotiation do not boost the perceived knowledge of the speaker. For friendliness and professionalism, *clearly* and *obviously* emerge as markers of speaker feeling, and for professionalism, peers are given more leeway than those with higher perceived authority.

Understanding how we signal negotiation to our conversational partners, as well as what social effects these cues might have, has implications for understanding not just human interaction but human-computer and artificial agent interaction as well. Boosters and hedges, long examined as separate phenomena, can be categorized based on the negotiation functions they serve and the social effects they have.

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many more years of building up a life together and doing all the things that make life worth living.

not an end, but a start of all the things that are left to do

(*wasteland baby* // hozier)

From *I don't know* to *absolutely*: Expressions of negotiation in dialogue

When we converse, we make deliberate choices about whether to be straightforward, vague, or somewhere in between. Hedging, or using deliberately vague language, is a choice to modify what we are saying. This is to say that conversations operate on multiple levels, relying on speaker-addressee knowledge, context, and other salient information to convey not only literal meanings but contextually-situated (and vague) meanings as well. This is fundamental to human communication — we are endlessly committing more or less to what we are saying, generating implicatures, and saying not quite what we mean. The ability to ground on both what is actually said and what is implied is of utmost importance when we think about how conversations function on multiple levels. When we ground on what we have said, we are working with our partners to establish what we mean. I aim to understand and explore how the grounding process might be shaped by using explicit cues to enter and exit the grounding process.

In this introduction, I will first discuss how the structure of conversations work, and how people in conversations are constantly engaging in the negotiation process. Then, I will explore how negotiations might be explicitly cued — how people can choose certain words to indicate that mutual understanding has not been reached. Finally, I will talk about how social features of language, such as authority, might affect how and why we engage in the negotiation process.

Conversations as negotiations

Conversations are negotiations. This is undeniable — because conversations are joint actions (Clark, 1996), we are constantly negotiating common ground between

ourselves and our conversational partners (Clark, 1996; Clark & Brennan, 1991; Stalnaker, 2002). Participants in a conversation must have at least some shared knowledge of the thing being referred to, and some knowledge of their partners' knowledge as well (Clark & Marshall, 1981; Jucker & Smith, 1996) in order to be successful. It is important to note that people in conversations do not need to have *complete* shared knowledge, and in fact, almost never do. But participants do have shared knowledge, and use this shared knowledge to reach mutual understanding through small negotiations. *Conceptual pacts*, agreements about how to identify things in the environment, are the results of these small negotiations we make each utterance (Brennan & Clark, 1996). We carry out these negotiations through grounding and the feedback we provide.

Negotiation affects conceptual pacts. An example of a traditional conceptual pact is the following (from Brennan & Clark, 1996, p. 1487):

1. A: another fish, the most realistic looking one…

   B: a rainbow trout?

   A: yeah, yeah

Here, communicators agree on the label *rainbow trout*, but there is no explicit marking - speaker B does not hedge or otherwise suggest vagueness in their description. An example of a conceptual pact being negotiated with an explicit hedge in the description is the following (from Brennan & Clark, 1996, p. 1488):

2. A: a car, sort of silvery purple colored

Here, *sort of* describes the color of the car, with the idea that the addressee and speaker must negotiate on whether or not they'll agree to call the car purple or silver, or both. These negotiations are common in conversation, and people must resolve these negotiations to some satisfactory degree in order to come to mutual understanding.

As these examples show, one way conversational partners negotiate meaning is through impreciseness. This delicate negotiation is part of achieving joint actions — actions carried out by people coordinating with each other (Clark, 1991). When all goes well, people negotiate meaning (and joint actions) with precision: one person contributes something to the common ground and the other person accepts it immediately, as in the rainbow trout example above. Clearly signaling negotiation is potentially part of the way in which people can resolve these negotiations quickly, and it's likely that people do this through the use of explicit markers of negotiation, such as *negotiation words*. This can be seen in the *sort of* example above. In the set of negotiation words, I also include negotiation phrases like *kind of* and *I don't know*. Because it is an expression of a lack of knowledge, *I don't know* has a special status and I will discuss it separately in a section below, as well as investigate it further in my corpus analysis.

Negotiation words

While these words have been looked at in academic writing, and considered in isolation, no attempts have been made to understand and categorize words considered *boosters* and *hedges*, as well as other related words, as belonging to a class of words that can signal entering or exiting a negotiation period.

One overt way we negotiate common ground is through hedges, words or short phrases like *sort of* and *kind of* that communicate to our partner that we may not be sure about the information we are presenting. A brief corpus analysis of mostly spoken communication suggests that the frequency of these words is not very high: common hedges (*sorta, sort of, kinda, kind of, you know, I mean, usually, probably, I think*) make up .02% of the Corpus of Contemporary American English (COCA; Davies, 2008) and .01% of the Corpus of Global Web-Based English (GloWbe; Davies, 2013). In academic writing, and possibly in other collected corpora, however, hedges are more commonplace, occurring 2% of the time in marketing papers, 1% in biology papers, and .07% of the time in engineering papers (Vasquez & Giner, 2008). This may be due to the desire to keep alternate explanations salient, or because data is not always conclusive, but it is interesting to note that in disciplines where data tends to have one explanation (mechanical engineering), there are fewer hedges, but not none (Vasquez & Giner, 2008). Even though the data may be immutable, the desire to not commit fully to the utterance is still shown.

In speech, people tend to think of hedges as undesirable. However, there is evidence that hedges provide meaningful information, such as marking information as unsure (Anderson, 2013; Jucker & Smith, 1996). Hedges also affect language processing, such as by increasing memory for items (Liu & Fox Tree, 2012). Liu and Fox Tree (2012) found that in storytelling contexts, hedged information was more likely to be omitted in a retelling, but retained better in recall tests. In addition, these words might signal levels of certainty/telling, correctness, and sureness to the

addressee. Hedges were selected based on previous literature, and the list of hedges investigated in this dissertation are *kind of, kinda, sort of, sorta, basically,* and *partially*.

In contrast, boosters are words that are canonically considered to mark conviction and knowledge on a stance (Hyland, 2000; Waksler, 2012), such as *obviously, absolutely,* and *clearly*. The list of boosters were also selected based on previous literature, and the ones investigated in this dissertation are *absolutely*, *obviously*, *clearly*, *certainly*, and *very*.

Thinking about negotiation as a *spectrum*, we identify points upon which words can fall. On one endpoint, there are words that imply no negotiation - that is, they are responsible for communicating absolute certainty or for communicating that the speaker is informing the addressee. On the other, there are words that imply negotiation is required - the speaker and addressee *must* negotiate in order to ground. However, it is not all or nothing - it is very likely that words that require negotiation require *different* amounts of negotiation, and thus would fall on different points along the spectrum of negotiation.

We propose that there are two types of negotiation spectrum, one from more certain to more negotiating, and a second from more corrective to more negotiating. Words may fall in different locations on these two scales. An additional issue is the sureness felt when a particular modifier is used. We now turn to discussion of certainty/telling, correction, negotiation, and sureness.

Certainty/Telling

Words of negotiation might suggest different levels of certainty/telling - that is, by choosing to use a modifier that is high in certainty or telling over a modifier that is lower in certainty and more of a negotiation than a telling, the speaker is *informing* their addressee about an issue. The speaker is presenting information as facts that should be added to the common ground immediately rather than as something to be negotiated on before being added to the common ground. Words of negotiation that might cluster around *certainty* or *telling* include *absolutely, obviously, certainly, clearly, very,* and *totally*. Those that cluster around *uncertainty* or *negotiation* might include *I don't know*, *kind of*, and *sorta*. "The door is absolutely open" would be more certain than "The door is kinda open." It would also be more telling than negotiation.

Correction

Correction involves the speaker correcting the addressee. Thus, correction words might appear in the conclusion of negotiation, or in responses to addressees, whereas sureness and certainty/telling words may not.

Words of negotiation that might cluster around *less-correction* include *obviously* and *clearly* which suggest that an addressee can also see the correct interpretation.

For example, consider the case where Jack and Lalitha are trying to determine if the new coffee shop is open.

(3)

Jack: That new coffee shop downtown is open.

Lalitha: It's certainly open. They had a soft opening last weekend.

In contrast, modifiers that may cluster around *more-correction* may include *basically* and *pretty* which may have more of an explanatory quality where the conversational participants may not see things the same way as each other.

Returning to the coffee shop example:

(4)

Jack: That new coffee shop downtown is open.

Lalitha: It's basically open. They had a soft opening last weekend.

Here, we can see that *basically* is doing more corrective work (the coffee shop isn't open, but it has started opening) in contrast to *certainly* (the coffeeshop is and has been open since last weekend.

Negotiation

Negotiation can be thought of as the opposite end of certainty/telling and of correction. Words indicating high amounts of negotiation possibly include: *sorta, kinda, sort of, kind of, partially, basically,* and *pretty.* These words leave space for the addressee and speaker to jointly arrive at common ground through a series of negotiations. However, as previously stated, it is likely that these words might imply different amounts of negotiation.

Sureness

Related to certainty, correction, and negotiation is the concept of *sureness*. When addressees hear words that are high on the sureness dimension, they interpret the

speaker being sure about their negotiation status — regardless of its uncertainty or corrective status. For example, in "the food is kinda bland," choosing *kinda* might imply some uncertainty or willingness to correct the claim of blandness while at the same time implying sureness that *kinda* is the appropriate modifier. I predicted that the words that are more certain and less corrective (*absolutely, obviously, certainly, clearly, very,* and *totally*) will indicate more *sureness* than other words on the curve. But it's not clear what will happen with words that imply less certainty and more correction (*sorta, kinda, sort of, kind of, partially, basically,* and *pretty*).

I don't know

I don't know (sometimes appearing as *I dunno* or *idk* in speech and text, respectively) has multiple uses in conversation. People use *I don't know* to mean they both they don't know and that they don't want to say (Pichler & Hesson, 2016; Grant, 2010; Brennan & Williams, 1995). *I don't know* can also function as a marker of epistemic certainty and as a discourse marker (Grant, 2010; Kärkkäinen, 2010; Doehler, 2016). In addition, *I don't know* can also be used to steer speakers away from a topic (Doehler, 2016).

As an epistemic marker, *I don't know* can indicate things about the speaker's state of mind, such as whether they want to avoid disagreement, to avoid committing to an answer, or to express some form of uncertainty (Grant, 2010). In a comprehensive analysis of spoken British and New Zealand English, the most common function for *I don't know*s was to express epistemic stance (Grant, 2010).

As a discourse marker, *I don't know* can serve to organize turns, indicating that the speaker is planning to add additional information or marking the turn as containing non-standard information (Doehler, 2016). *I don't know* also allows the speaker to exit a turn, even when the turn is not complete (Doehler, 2016).

I don't know is analyzed separately from the other negotiation words due to its position on the scale. *I don't know* occupies the endpoint of the negotiation scale — it is predicted to be the highest in negotiation. Saying *I don't know* throws the ball into the addressees' court in a way that no other negotiation word does.

Friends and strangers may use negotiation words differently. Within close social relationships, it might be more acceptable to be vague (which would minimize the use of *I don't know* as a marker of lacking knowledge), a behavior that might be considered to be rude with casual acquaintances (Bristol & Rossano, 2020). It might, however, be less acceptable for a stranger to be vague (which would increase the use of *I don't know* as a marker of lacking knowledge). I assessed this with a close examination of the negotiation expression of least certainty, *I don't know*. Because there are social benefits for strangers to say *I don't know* when it means that they don't have the information, I predicted more *I don't know*s will be said with strangers. While a lot of work has been done on *I don't know*, its use has not been studied across friends and strangers.

I also examined *I don't know* across communication modalities and settings. I predicted that *I don't know* will be said more often in face-to -face storytelling contexts than in non-story-telling conversation over the phone because the addressee will be

able to indicate lack of knowledge or willingness to answer without seeming rude. In a conversation where the speakers have access to other non-verbal cues, using a vague expression *can* be just as informative as using a non-vague one, but when there are only voice cues, it may not be, appearing rude. In addition, I predicted that uses will vary across storytelling versus task contexts. In the story-telling context, *I don't know* is more likely to mean "I don't want to talk about it" than "I don't have the information". In written instant messages, where people are working together to solve a task, I predicted that there will be fewer *I don't know*s than in spoken task-based conversation. This is because it is likely that over instant messenger, participants are working to deliver as much information as possible to their participants due to the lack of grounding cues that occur, so *I don't know* would be uninformative. Furthermore, in instant messaging, there is a start-up cost to sending a message, so people are more likely to send informative messages rather than messages like *I don't know* (unless they truly do not know!). Thus, I further predicted that the *I don't know*s that do appear will mean that the speaker does not have access to the information. This is due to the fact that the speaker is working to complete a task with their addressee - the task likely affords the "I don't have access to the information" meaning over the "I don't want to talk about it" meaning.

Sources influence interpretations

It has been shown that sources can influence interpretations of articles (Hovland & Weiss, 1951). People who read articles they attributed to a trustworthy source changed their opinion to reflect the source's, yet gained the same amount of

information from sources deemed untrustworthy and trustworthy. Additionally, perceived high credibility of sources from in-groups, such as peers or celebrities, can affect opinions (Pornpitakpan, 2004). In-groups are both more influential and more favorable. A similar effect is found with trusted newspapers and magazines; in fact, it does not seem to matter whether the author is an expert, merely that they are trusted by the addressee (Pornpitakpan, 2004).

Language also plays a role in how sources are interpreted. Scientific or news articles written in language that is too technical or overtly positive are seen as less trustworthy than articles written in standard language or with a neutral tone (König & Jucks, 2019). Likewise, aggressive language can decrease trust in a source (König & Jucks, 2019). Thus, it seems likely that hedges can affect how trustworthy a source is perceived to be: News reports on scientific findings are perceived as more trustworthy when they include them (Jensen, 2008), but it is also possible that different words of negotiation might act differently. *Sorta* might make a scientific article seem more trustworthy, but *absolutely* might feel aggressive or overtly positive and reduce trust in the source. It is possible that in addition to affecting perceived trustworthiness, modifiers appearing in a source already confirmed to be trustworthy will change how the *source* is interpreted in regards to other speaker characteristics.

In a series of four studies, I explore how negotiation cues can be categorized and whether social cues, like authority, interact with negotiation cues. By understanding how these words work in and out of context, we can further understand how people within conversations can explicitly shape the conversational structure.

Current studies

In Experiments 1 and 2, we looked at negotiation words in isolation and in context. In Experiment 1, we tested the points along the negotiation-certainty scale and the negotiation-certainty scale. In Experiment 2, we followed up on the results of Experiment 1 by placing the words in context as well as examining the amount of sureness each word implies. It is clear that speakers choose words deliberately, in order to communicate different things to their addressees. Words of negotiation are no different — it is likely that speakers choose specific words for specific reasons, including to indicate the amount of negotiation needed to agree with a claim presented, how sure they are about something, and whether or not they are informing their addressee.

In Study 1, I carried out an in-depth examination of *I don't know*, through analyzing 3 corpora that vary across conversation types (chit-chat, task), communication mediums (Roommates - audiovisual, Artwalk - audio only, IM Reciprocity - written) and relationships (Artwalk - friends versus strangers). *I don't know* was coded using a scale adopted from Grant (2010). Four other words (*kinda, sorta, absolutely, totally*) were coded in addition. We hypothesized that *I don't know* would vary based on relationship as well as conversation type (chit-chat compared to task).

In Experiment 3, I examined how social features, such as authority, might interact with words of negotiation in order to affect perceptions of the speaker. There were three conditions, representing different levels of assumed social authority (high

authority, mid authority, and low authority). Once sorted into a condition, participants judged character traits of the speaker after reading dialogue that contained either words of negotiation or no modification. We expected that the perceived authority of the speaker and the words of negotiation would affect how people's character traits were judged.

Experiment 1: Rate some words

Because these words have rarely been examined outside of academic writing, it is important to understand what assumptions people have around these words. By looking at these words out of context, we can get ratings without interference from other parts of communication.

In Experiment 1, we tested 14 words (*I don't know, basically, kinda, pretty, absolutely, kind of, totally, sorta, very, clearly, sort of, partially, obviously, certainly*) in isolation on the amount of negotiation versus certainty and the amount of negotiation versus correction each word implies.

Method

Participants

We recruited 76 participants from a West Coast research university subject pool. Participants ranged in age from 18 to 35 (mean age = 21.22) and received course credit for participating. A power analysis was carried out to determine the number of participants based on an effect size of .01, suggesting 67 participants.

Materials

The experiment was run using Qualtrics. There were 2 blocks of questions, each asking about 14 words of negotiation. In one block, participants were probed on negotiation versus certainty. Participants were given the following instructions:

1. *Please read each word or phrase and think about whether it implies either of the*

   following:

   negotiation between speaker and listener regarding how much the speaker knows

   OR

   the speaker is telling the listener and there is no doubt about what the speaker

   knows.

Each word was presented in isolation and was followed by a 7-point scale with negotiation on one end and certainty on the other. Participants were asked "How much does *[target word]* imply negotiation (1) versus telling (7)?". Questions were randomly shuffled.

In the other block, participants were probed on negotiation versus correction. Participants were given the following instructions:

2. *Please read each word or phrase and think about whether it implies either of the*

   following:

negotiation between speaker and listener regarding how much the speaker knows

OR

the speaker is correcting the listener.

Again, each word was presented in isolation and was followed by a 7-point scale with negotiation on one end and correction on the other. Participants were asked "How much does *[target word]* imply negotiation (1) versus correction (7)?" See Figure 1.

Figure 1. Sample scale participants saw

Questions were randomly shuffled, and participants saw all words.

Procedure

This study was conducted using a hybrid experimental format on Qualtrics and Zoom. Participants were sent a link to the study and entered a Zoom room where a researcher was waiting to give them instructions for the study. Once they entered the Zoom room, the researcher sent them the link to the study and asked them to return to the Zoom room once they had completed the study.

When the participants clicked the link to the study, they were presented with two blocks of questions, one testing negotiation versus correction and the other testing negotiation versus certainty. Blocks were randomly shuffled, so participants saw blocks in either order. In both blocks, participants answered questions about the words of negotiation, randomly presented.

Results

I don't know was the most negotiation-like word of negotiation: It was the least telling and the least corrective. O*bviously* was the least negotiation-like: It was the most telling and the most corrective, contrary to expectations about correctiveness. *Pretty* fell in the middle of the scales: It was mid-way on telling and mid-way on correction. Participants rated *sort of* and *kind of* as more negotiating than telling and more correcting than negotiating. On the opposite end of the scale, they rated *certainly* and *absolutely* as more telling than negotiating, but with similar correction levels as *sort of* and *kind of*. See Figure 2.

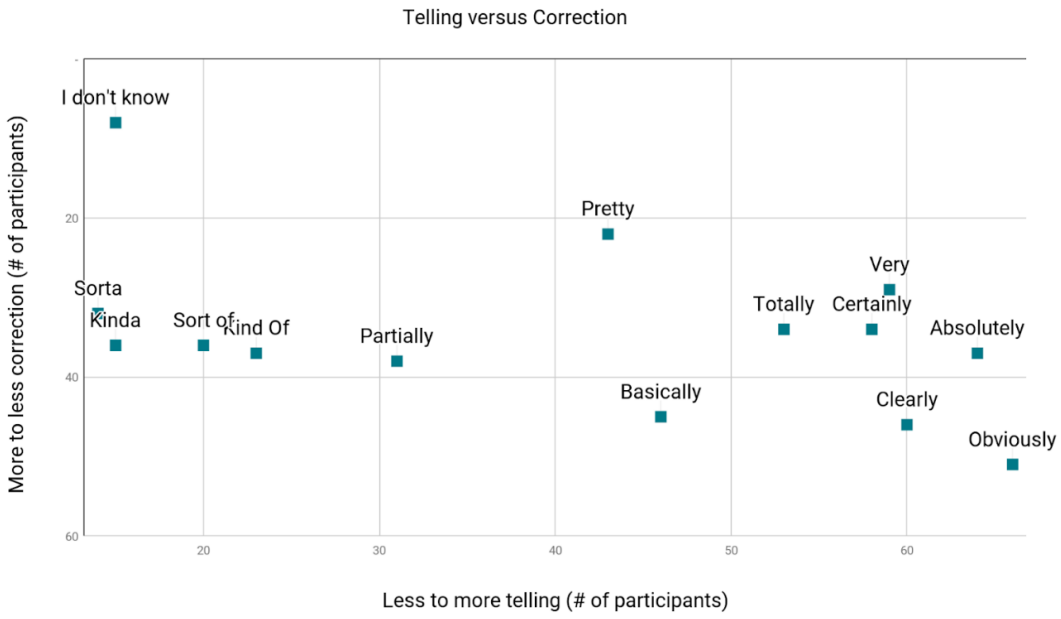

Figure 2: Correction Versus Telling. Top left corner (I don't know) is equal to high negotiation-low correction, low telling. Bottom right corner (obviously) is equal to low negotiation, high telling-low correction.

Telling

To score the data for Figure 2, we removed all scores of 4 (the *neither* score). To calculate negotiation scores, we counted the number of participants who rated each word as *definitely, slightly,* and *somewhat negotiation*. We did the same to calculate telling scores. We also averaged the ratings for each word (excluding the 4 responses) across all participants. This gave us the number of participants per word who thought that the word implied any amount of negotiation or telling. See Table 1 for the median and mode ratings of each word, as well as the total number of "negotiation" and "telling" responses (all responses except 4 - neither).

Table 1: Breakdown of responses for all words on the negotiation-telling scale.

Word	Median	Mean (SD)	Mode	Number of responses excluding "neither" Negotiation	Number of responses excluding "neither" Telling	Number of responses of "neither"
Absolutely	7	6 (1.77)	7	8	63	3
Clearly	6	6 (1.97)	7	13	58	3
Obviously	6	6 (1.56)	7	6	64	4
Certainly	6	5 (1.84)	7	15	57	2
Very	6	5 (1.30)	6	6	58	10
Pretty	5	5 (1.36)	5	17	42	15

Basically	5	5 (1.63)	5	21	44	9
Totally	6	5 (1.79	7	17	52	5
Partially	4	4 (1.53)	5	33	30	11
I don't know	4	3 (1.84)	4	31	14	29
Kind of	3	3 (1.46)	3	45	21	8
Kinda	3	3 (1.35)	3	51	14	9
Sort of	3	3 (1.42)	2	44	18	12
Sorta	3	3 (1.48)	3	51	13	10

A nonparametric Friedman's test was also conducted to determine whether telling-negotiation ratings differed significantly for each word, χ^2 (13) = 358, $p < .001$. All datapoints were included. Pairwise comparisons between groups (Wilcoxon signed rank tests with Bonferroni corrections applied) revealed statistically significant differences. See Table 2 for details.

Table 2: Pairwise comparisons. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Significant comparisons**
Absolutely	Pretty***, Basically***, Totally*, Partially****, I don't know****, Kind of****, Kinda****, Sort of****, Sorta****

Clearly	Pretty*, Partially***, I don't know***, Kind of****, Kinda****, Sort of****, Sorta****
Obviously	Pretty***, Basically***, Partially****, I don't know****, Kind of****, Kinda****, Sort of****, Sorta****
Certainly	Pretty*, Partially***, I don't know***, Kind of****, Kinda****, Sort of****, Sorta****
Very	Pretty**, Partially****, I don't know****, Kind of****, Kinda****, Sort of****, Sorta****
Pretty	Absolutely***, Clearly*, Obviously***, Certainly*, Very**, I don't know*, Kind of***, Kinda****, Sort of****, Sorta****
Basically	Absolutely***, Obviously***, I don't know*, Kind of**, Kinda****, Sort of****, Sorta****
Totally	Absolutely*, Partially*, I don't know***, Kind of****, Kinda****, Sort of****, Sorta****
Partially	Absolutely****, Clearly***, Obviously****, Certainly***, Very****, Totally*, Kinda*, Sorta**
I don't know	Absolutely****, Clearly***, Obviously****, Certainly***, Very****, Pretty*, Basically*, Totally***
Kind of	Absolutely****, Clearly****, Obviously****, Certainly***, Very****, Pretty***, Basically**, Totally****
Kinda	Absolutely****, Clearly****, Obviously****, Certainly, Very****, Pretty****, Basically****, Totally****, Partially*
Sort of	Absolutely****, Clearly****, Obviously****, Certainly, Very****, Pretty****, Basically****
Sorta	Absolutely****, Clearly****, Obviously****, Certainly****, Very****, Pretty****, Basically****, Totally****, Partially**

Correction

Similar statistics were carried out for the correction - negotiation scale. To score the data, we removed all scores of 4 (the *neither* score). To calculate negotiation scores,

we counted the number of participants who rated each word as *definitely*, *slightly*, and *somewhat correction*. We did the same to calculate correction scores. We also averaged the ratings for each word (excluding the 4 response) across all participants. This gave us the number of participants per word who thought that the word implied any amount of negotiation or correction.

Table 3: Breakdown of responses for all words on the negotiation-correction scale.

Word	Median	Mean (SD)	Mode	Number of responses excluding "neither" Negotiation	Number of responses excluding "neither" Correction	Number of responses of "neither"
Clearly	5	5 (1.94)	6	21	44	9
Obviously	6	5 (1.91)	7	15	49	10
Kinda	4	5 (1.47)	4	29	34	11
Absolutely	4	4 (2.06)	7	25	36	13
Certainly	4	4 (1.88)	4	25	33	16
Very	4	4 (1.35)	4	19	28	27
Pretty	4	4 (1.34)	4	27	20	27
Basically	5	4 (1.45)	5	21	44	9

Totally	4	4 (1.78)	4	20	33	21
Partially	5	4 (1.52)	5	38	27	9
Kind of	4	4 (1.49)	5	32	36	6
Sort of	4	4 (1.49)	5	28	35	11
Sorta	4	4 (1.45)	5	34	31	9
I don't know	4	3 (1.42)	4	37	4	33

A nonparametric Friedman's test was also conducted to determine whether telling-correction ratings differed significantly for each word, χ^2 (13) = 75.2, $p < .001$. All datapoints were included. Pairwise comparisons between groups (Wilcoxon signed rank tests) revealed statistically significant differences. See Table 4 for details.

Table 4: Pairwise comparisons. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Significant comparisons**
Absolutely	I don't know*
Clearly	I don't know**
Obviously	Very*, Pretty***, I don't know*, Sorta*
Certainly	I don't know*
Very	Obviously*, I don't know**
Pretty	Obviously***
Basically	I don't know***

Totally	I don't know**
Partially	I don't know*
I don't know	Absolutely*, Clearly**, Obviously*, Certainly*, Very**, Basically***, Totally** Partially*, Kinda*, Sort of*
Kind of	-
Kinda	I don't know*
Sort of	I don't know*
Sorta	Obviously*

Discussion

In Experiment 1, we tested each word in isolation, and found that these words differ in the amount of negotiation, telling, and correction that they imply.

For the telling-negotiation scale, we found that these words grouped into two — words of high telling-low negotiation, and words of low telling-high negotiation.

For the telling-correction scale, the results are harder to interpret — *I don't know* differed from all the other words (and on average, was rated as *slightly negotiation*), but it is unclear why. I carried out a follow-up (Study 1) into *I don't know* as an attempt to tease apart what exactly is going on in the *I don't know* cases. Setting this aside, it appears that there are words that, on average, imply correction (*clearly, obviously, absolutely*), and words that do not.

Due to the fact that these words were presented in isolation, it is possible that these interpretations change when in carrier sentences, more similar to how they would be encountered in naturalistic speech. In Experiment 2, the phrases were set in carrier

sentences. *I don't know* was excluded due to the difficulty of constructing grammatical sentences with the phrase included. *I don't know* is looked at explicitly in Study 1.

Experiment 2: Would your friend like this?

In this study, we tested 13 words (*basically, kinda, pretty, absolutely, kind of, totally, sorta, very, clearly, sort of, partially, obviously, certainly*) in context on the amount of certainty, sureness, and similarity each word implies.

Method

Participants

We recruited 187 participants from a West Coast research university subject pool. Participants ranged in age from 18 to 33 (mean age = 19) and received course credit for participation.

Materials

Participants were given these words embedded in scenarios like the following (target word bolded here, it was not bold in the experiment):

1. You're at a music festival with your friends. Your friend only likes indie pop and asks you to choose an act to see. The festival employee says "this music act is **totally** indie pop".

Then participants were asked "How much will your friend like this music act" and were given a scale of 1 - 7 (1 being *like a great deal* and 7 being *dislike a great deal)*. They were also asked "How similar to indie pop is the music act the employee recommended?" and provided a sliding scale from *not at all similar* (0) to *identical* (100). Finally they were asked how sure the festival employee was about the act, from

a scale of 1 - 7 (1 being *very sure* and 7 being *very unsure*). There were 14 scenarios prepared, one for each word. Words and scenarios were counterbalanced.

Procedure

Experimentation took place over Zoom. Participants were given the survey link and directed to go through the study at their own pace. Participants saw each scenario and its related questions grouped together on a single page, and each scenario and question bundle was presented individually. After completing the Scenarios section, participants also completed demographic information.

Results

How much will your friends like this?

For the 13 scenarios that probed *liking*, Cronbach's alpha was high ($\alpha = .80$). Words clustered into two groups (*Like a lot* and *like a little*), with *basically* and *pretty* falling between the two groups. See Figure 3 for details.

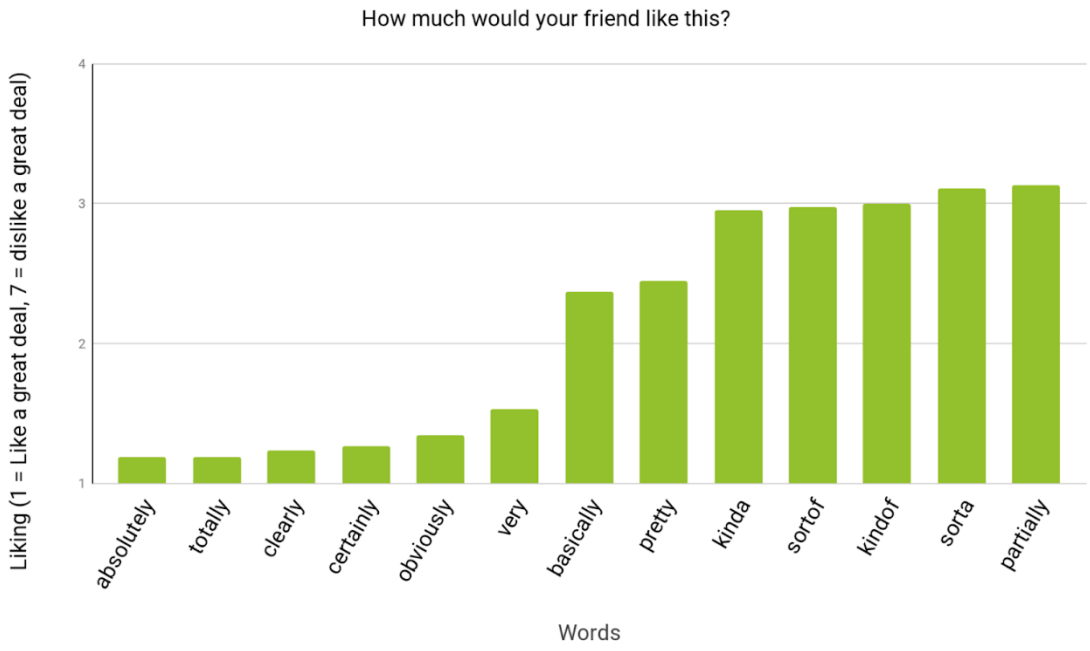

Figure 3: Participants' ratings of how much they thought their friend would like the object. Ratings are from 1 to 7 (1 being Like a great deal, 4 being Neither like nor dislike, and 7 being Dislike a great deal).

A non-parametric Friedman's test was carried out. There were significant differences between the ratings of the words, ($\chi^2(12) = 289.79$, $p < .001$). Bonferroni-corrected pairwise comparisons were carried out to investigate which words significantly differed from one another. See Table 5 for results.

Table 5: Pairwise Bonferroni-corrected comparisons for liking. Asterisks indicate significance level (= .0006)*

Word	**Significant comparisons**
Absolutely	Basically****, Pretty****, Kinda****, Sort of****, Kind of****, Sorta****, Partially****

Totally	Basically****, Pretty****, Kinda****, Sort of****, Kind of****, Sorta****, Partially****
Clearly	Basically****, Pretty****, Kinda****, Sort of****, Kind of****, Sorta****, Partially****
Certainly	Basically****, Pretty****, Kinda****, Sort of****, Kind of****, Sorta****, Partially****
Obviously	Basically***, Pretty***, Kinda****, Sort of****, Kind of****, Sorta****, Partially****
Very	Basically*, Pretty**, Kinda****, Sort of, Kind of****, Sorta****, Partially****
Basically	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very**, Kind of**, Sorta*
Pretty	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very**
Kinda	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****
Sort of	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****
Kind of	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****, Basically**
Sorta	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****, Basically*
Partially	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****,

In Table 5, two groups seem to emerge. The first group consists of *absolutely, totally, clearly, certainly, obviously* and *very*. These words do not significantly differ from each other, but seem to differ from the group consisting of *basically, pretty, kinda, kind of, sorta,* and *sort of. Basically* is unusual in that it seems to differ from both sets of words.

How similar is this?

Across the 13 questions that probed similarity, Cronbach's alpha was high (α = .90). Words formed two clusters in the Similarity question as well - words that denoted things that were "good enough" (from 50 - 75 on the slider scale) and words that denoted that things were "extremely similar" (75 - 100 on the slider scale). *Partially* was closest to 50 on the sliding scale, suggesting that participants thought that something described as *partially* was the most dissimilar from the item in question, whereas something described as *absolutely* was incredibly similar to the item in question. See Figure 4 for details.

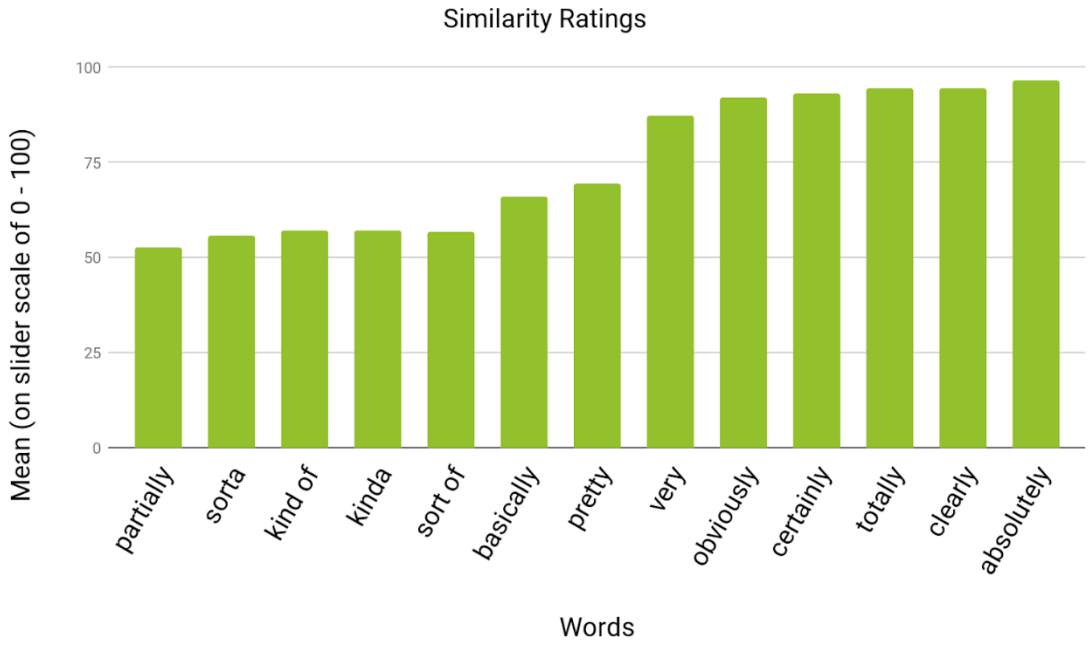

Figure 4: Participants' ratings of how similar the compared object is on a slider scale from 0 - 100. 0 was labeled as "not at all similar" and 100 was labeled as "identical".

A non-parametric Friedman's test was carried out. There were significant differences between the ratings of the words for similarity, ($\chi^2(12) = 317.47$, $p < .001$). Bonferroni-corrected pairwise comparisons were carried out to investigate which words significantly differed from one another. See Table 6 for results.

Table 6:Pairwise Bonferroni-corrected comparisons for similarity. Asterisks indicate significance level (= .0006).*

Word	**Significant comparisons**
Absolutely	Basically****, Pretty****, Sort of****, Kinda****, Kind of****, Partially****, Sorta****
Totally	Basically****, Pretty****, Sort of****, Kinda****, Kind of****, Partially****, Sorta****
Clearly	Basically****, Pretty****, Sort of****, Kinda****, Kind of****, Partially****, Sorta****
Certainly	Basically****, Pretty****, Sort of****, Kinda****, Kind of****, Partially****, Sorta****
Obviously	Basically****, Pretty***, Sort of****, Kinda****, Kind of****, Partially****, Sorta****
Very	Basically***, Pretty**, Sort of****, Kinda****, Kind of****, Partially****, Sorta****
Basically	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very***, Kind of*, Partially**
Pretty	Absolutely****, Totally****, Clearly****, Certainly****, Obviously***, Very**, Kinda*, Kind of**, Partially***
Sort of	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****
Kinda	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****, Pretty*

Kind of	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****, Basically*, Pretty**
Sorta	Absolutely****, Totally****, Clearly****, Certainly****, Obviously***, Very****
Partially	Absolutely****, Totally****, Clearly****, Certainly***, Obviously****, Very****, Pretty***

In Table 6, we see the *high-telling low negotiation* group as well as the *low-telling high negotiation group* emerge. The *high-telling low negotiation* group raised similarity above 50% - indicating that the comparison was over 50% similar, whereas the *low-telling high negotiation* group kept similarity for comparisons at around 50%. When thinking about comparisons of similarity, this suggests that especially good comparisons are marked with words like *absolutely*.

How sure is the employee?

Words also differed in their interpretation of sureness on the part of the speaker, ($\chi^2(11) = 305.323$, $p < .001$). Cronbach's alpha was acceptable ($\alpha = .74$). Words clustered into two groups, *sure* and *somewhat sure*. No words were interpreted as *neither sure nor unsure* (4) or unsure (5 and up on the scale). See Figure 5.

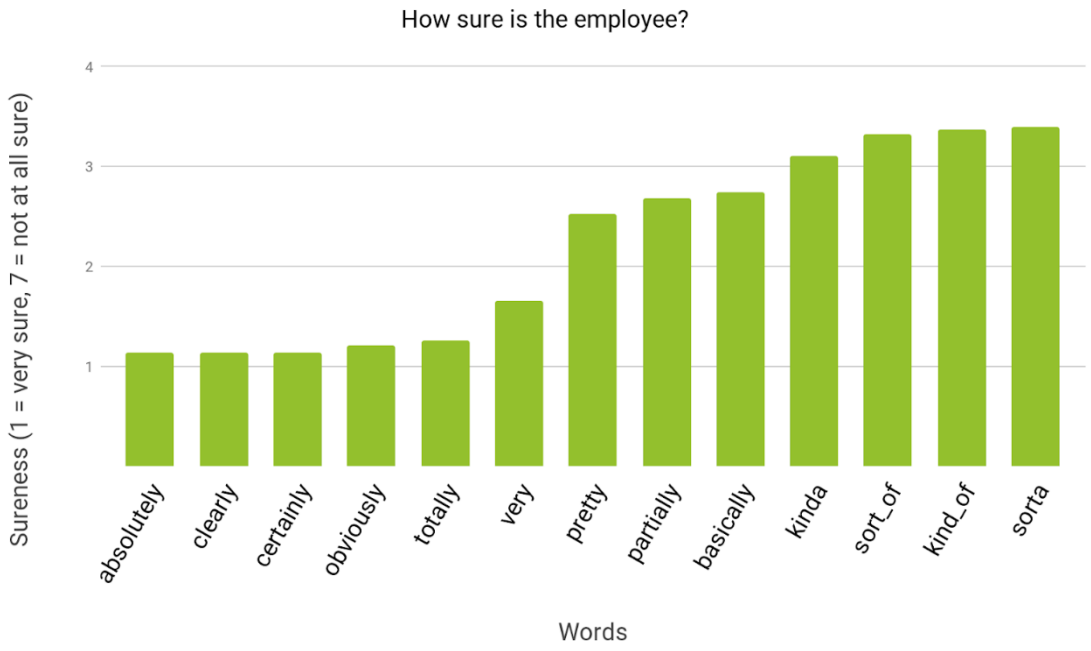

Figure 5: Participants' ratings of how sure they thought the employee was about the comparison. Ratings are from 1 to 7, with 1 being "Very Sure", 4 being "Neither sure nor unsure", and 7 being "Very Unsure".

Pairwise Bonferroni-corrected tests were carried out to examine exactly which words differed. See Table 7 for details.

Table 7: Pairwise Bonferroni-corrected comparisons. Asterisks indicate significance level (= .0006).*

Word	**Significant comparisons**
Absolutely	Basically****, Pretty****, Sort of****, Kinda****, Kind of****, Partially****, Sorta****
Totally	Basically****, Pretty**, Sort of****, Kinda****, Kind of****, Partially**, Sorta****
Clearly	Basically****, Pretty****, Sort of****, Kinda****, Kind of****, Partially****, Sorta****

Certainly	Basically****, Pretty****, Sort of**** Kinda****, Kind of****, Partially****, Sorta****
Obviously	Basically****, Pretty***, Sort of****, Kinda****, Kind of****, Partially***, Sorta****
Very	Basically***, Sort of****, Kinda***, Kind of****, Partially**, Sorta****
Basically	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very***
Pretty	Absolutely****, Totally**, Clearly****, Certainly****, Obviously***, Kind of*, Sorta*
Sort of	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****
Kinda	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very***
Kind of	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****, Pretty*
Partially	Absolutely****, Totally**, Clearly****, Certainly****, Obviously***, Very**
Sorta	Absolutely****, Totally****, Clearly****, Certainly****, Obviously****, Very****,Pretty*

Two groups again seem to loosely form - one suggesting *high sureness* (the *high-telling low negotiation* words) and one suggesting *low sureness* (the *low-telling high negotiation* words).

Discussion

In Experiment 2, we tested these words in context to confirm the results of Experiment 1. We found that, in accordance with Experiment 1, participants did in fact view these words as falling along a negotiation continuum. In particular, words clustered loosely into two groupings - one corresponding to indicating that the item

being asked about was very similar to the stated item and that their friend would definitely like it (*absolutely, clearly, certainly, obviously, totally, very*), and one corresponding to indicating that the item wasn't that similar and their friend might like it (*pretty, partially, basically, kind of, kinda, sorta, sort of*). Within each group, words did not differ significantly, except for *basically*, which differed from *kind of* and *sorta*.

The addressee's perception of the speaker's sureness also reflects this loose grouping. Participants evaluating a speaker felt that words either conveyed a strong level of sureness (*absolutely, clearly, certainly, obviously, totally, very*) or a weak level of sureness (*pretty, partially, basically, kind of, kinda, sorta, sort of*). Within each group, words did not differ significantly, except for *pretty*, which did differ from *kind of* and *sorta*.

In summary, in Experiment 2, we tested 13 words of negotiation in context. We found that these words cluster similarly to Experiment 1. Words that indicated negotiation also indicated unsureness and a lack of similarity, whereas words that indicated no negotiation indicated sureness and similarity. It is likely that sureness and certainty are the same thing — words that fell in the middle of the certainty scale also fell in the middle of the sureness scale.

In Study 3, I followed up more thoroughly on the expression of negotiation *I don't know*. In Experiment 1 we observed that *I don't know* was perceived as the most negotiation-like of all the negotiation words. *I don't know* was not studied in

Experiment 2 because it did not make sense in a scenario. In Study 1, *I don't know* is looked at in depth, along with *absolutely*, *totally*, *sorta,* and *kinda*.

Study 1: I don't know, in depth

I don't know has the ability to convey a literal meaning - "I don't have the requested information or knowledge", but it can also convey pragmatic meanings, such as "I don't want to say". Like a discourse marker, *I don't know* can manage turns, express attitudes, and reduce commitment to statements. In Study 1, I examined how *I don't know* uses of all types - literal and non-literal - vary across conversation mode (audiovisual, text-only, and face to face), relationship type (friends and strangers) and conversation type (chit-chat and task), as well as where it appears and what it co-occurs with. I also examined some comparison markers - *absolutely*, *totally*, *sorta* and *kinda* - as well as their locations and co-occurrences.

Earlier researchers observed that the main function of *I don't know* is to express "I am unable to provide the requested information". Grant (2010) examined the difference in *I don't know* between British and New Zealand English across different conversational settings, and found that *I don't know* is used more often than the abbreviated form *I dunno,* and that when able to be coded, the most common use of *I don't know* was expressing lack of informational informativeness. Additionally, *I don't know* is used (albeit less commonly) to avoid disagreements, to function as a hedge, and to soften disagreements when they do occur. Differences in New Zealand English use compared to British English use was also found, with New Zealand English speakers tending to use *I don't know* to avoid disagreement more often than British

English speakers, and British English speakers using *I don't know* to avoid making a commitment more often than New Zealand speakers (page 9).

Additionally, discourse markers such as *well*, *oh*, *I mean* and *you know* appear frequently with *I don't know* (Grant, 2010, see also Diani, 2004). This is possibly because they serve similar purposes (softening disagreement, preserving politeness), and so people might use them in conjunction to emphasize this. In particular, previous research has suggested that *well* and *oh* commonly appear before disagreements or before expressing hesitation and that *I mean* and *you know* increase tentativeness and distance the speaker from the opinion (Grant, 2010). Alternatively, *I don't know* might co-occur with other discourse markers because that part of the communication requires more negotiation. For example, an *oh* might indicate information that was forgotten but now needs to be used in the conversation, and the *I don't know* might distance the speaker from this newly-recalled information.

Use of *I don't know* was assessed in already-collected corpora. There are two main ways to interpret *I don't know*: as a lack of knowledge or as a lack of willingness to talk. What interpretation we go with might depend on many contextual factors, including what we know about our addressee and our relationship with them. By looking at how people negotiate during tasks that involve joint referential activities, such as tangram identification or art identification, we can look at what role *I don't know* plays in the process of coming to agreement.

Method

The analyses are on three separate corpora: Artwalk, IM Reciprocity, and Zoom Reciprocity. These corpora are all stored at UC Santa Cruz.

Artwalk is a corpus of conversations between two interlocutors that occur via telephone (Liu, et al., 2016). One participant was in the lab (the "director") and the other was in downtown Santa Cruz (the "follower"). The director was responsible for giving the follower directions to different artworks installed downtown. Thus, Artwalk has task-oriented conversation. Artwalk also, importantly, has spontaneously generated off-task conversation as well (see Nguyen, et al., in press, for an argument as to why these sections of conversation should be considered naturalistic). Artwalk also has dyads comprised of friends, and dyads comprised of strangers.

IM Reciprocity is an internet messaging-based corpus that has both on-task and off-task sections between two interlocutors (see Guydish & Fox Tree, 2022). Participants engaged in a referential task matching activity, where they had to identify abstract shapes together. Participants also had sections where they could have conversations unrelated to the task - these conversations are analogous to the *chat* portions of Artwalk. All conversations in IM Reciprocity took place between strangers.

Roommates is an in-person, storytelling corpus (see Bryant, 2010; laboratory corpus). Participants were brought into the lab in pairs and asked to tell a story about an experience they had had with a roommate, face to face with their conversational partner. While this is more of a lab task than a true chat task (see Nguyen, et al., in press for more details), it is likely that storytelling might mimic more closely

naturalistic conversation (the *chit-chat* portions of Artwalk and IM Reciprocity) than task conversation (the *task* portions of Artwalk and IM Reciprocity). Please see Table 8 for a breakdown of the corpora.

Table 8: The three corpora used in this experiment.

Corpus	Word Count	Dyad Type	Conversation Type	Modality
Artwalk	236,629	Friends / Strangers	Task / Chit-chat	Audio-only
IM Reciprocity	82,691	Strangers	Task / Chit-chat	Text-only
Roommates	58,441	Strangers	Storytelling	Face to face

For all three corpora, I extracted *I don't know*s and their surrounding contexts using an automated method. A research assistant double checked the automated method. I examined occurrence (how often the phrase occurs) and co-occurrence (what it occurs with), categorizing uses found across the three corpora through a coding schema developed based on Grant (2010). All coding was done by two research assistants with an IRR measure calculated.

Additionally, I pulled out and examined *absolutely, totally, sorta,* and *kinda* - these four words were, in Experiments 1 and 2, at the extremes of the scales. The extraction and double check method was the same for these words as *I don't know*. These were coded using an adapted schema based on Grant (2010), with two researchers coding for an IRR measure. Location and co-location information was also coded for these words.

Predictions

We predict that usage varies across corpora - across task-based and off-task conversation. For Artwalk (spoken audio-only corpus), we predict that *I don't know* will be more common in the task-based conversation compared to the chit-chat due to the literal use function of *I don't know*. We also predict that there will be more *I don't knows* in task-based Artwalk compared to IM Reciprocity (text-only), due to the start-up costs associated with typing compared to speaking. In both corpora, in the task-based portions, we predict that *I don't know* will more often mean "I don't have information".

In both Artwalk chit-chat and IM Reciprocity chit-chat, we predict that *I don't know* will mean "I don't want to say", where a participant avoids answering or "I am unsure of committing", where a participant knows the answer and gives it but willingly distances themselves from it.

In Roommates (audio-visual, face to face), we predict that there will be fewer *I don't knows* than in Artwalk chit-chat, but that *I don't know* will serve the same purpose as in the chit-chat — it will mean "I don't want to say" or "I am unsure of committing" more often than any other meaning.

For Artwalk chit-chat and task, where we are able to look at conversations between friends and strangers, we expect that *I don't know* will differ in use depending on whether people are friends or strangers. We predict that friends will use *I don't know* more as a hedge, and strangers will use it to mean "I don't have information".

See Table 9 for a list of predictions.

Table 9: Predictions for Study 1.	
Artwalk - Task-basked	• More *I don't knows* than in Artwalk chit-chat • More *I don't knows* than in IM Reciprocity task • *I don't know* means "I don't have information"
Artwalk - Chit-chat	• *I don't know* means "I don't want to say" • *I don't know* means "I am unsure of committing"
IM Reciprocity - Task based	• More *I don't knows* than in IM Reciprocity chit-chat • *I don't know* means "I don't have information"
IM Reciprocity - Chit - chat	• *I don't know* means "I don't want to say" • *I don't know* means "I am unsure of committing"
Roommates	• More *I don't knows* than in Artwalk chit-chat • *I don't know* means "I don't want to say" • *I don't know* means "I am unsure of committing"
Friends	• *I don't know* means "I don't want to talk about it"
Strangers	• *I don't know* means "I don't know"

Coding Scheme

Grant's coding scheme, presented in Table 10, below was adapted to code the *I don't knows* (as well as the four other words examined) in this corpus analysis. In addition to Grant's original categories, four more were added: *prefacing agreements*, *expressing agreement*, *highlighting commitment to the answer*, and *maximizing compliments*. Because one suggested use of *absolutely* and *totally* is that they increase commitment, we added these four categories to capture these uses. There is no "seeking

assessment" (the opposite of *avoiding assessment*) because assessment is focused on evaluating the interlocutor's contributions, not one's own. This means that "seeking assessment" would look like agreement or disagreement, both behaviors captured under other codes. There is no "seeking commitment" (the opposite of *avoiding commitment*) because "seeking commitment" can be interpreted as simply making a statement (e.g., "he's kinda tall" is avoiding commitment, but "he's tall" is making a statement). That is, speakers are assumed to commit as much as they can to every utterance, and it is only by marking it in some sense that commitment is lowered. In contrast, "highlighting commitment" can be interpreted as adding extra commitment, which is not the counterpart to avoiding commitment (cf., "he's absolutely tall").

Table 10: Coding scheme for analysis with the marker of interest bolded.

	Category	Definition	Example
From Grant (2010)	Inability to provide information / Insufficient knowledge	The expression is used when the speaker has a lack of knowledge	"yeah it wo- it won't let me take the picture right now **I don't know** what to do" (Artwalk corpus)
	Prefacing Disagreement	The expression is used to manage the social relationship while disagreeing with the speaker	"[laugh] it's **kinda** not i uh i mean it think it's just supposed to be just suggestive and amorphous i don't i don't know i'm it could be just me" (Artwalk corpus)
	Avoiding Disagreement	The expression is used when the speaker wants to	"oh I **totally** listen . didn't I remember

		avoid giving a negative response	that you live off campus[?]" (Roommates corpus)
	Avoiding Assessment	The expression is used to avoid judging the truth of their interlocutor's statements	D: yeah they can represent people, **I don't know** but uh they are very simplified. you only see the oval shape
	Avoiding Commitment	The expression is stressing the speaker's lack of confidence of the truth of the utterance	"D: uhh it looks **kinda** like uhm little brown and yellowish? i think" (Artwalk corpus)
	Minimizing Compliment	The expression is downplaying the speaker's confidence in a compliment (from the interlocutor)	[no examples in corpora]
	Hedging / Marking Uncertainty	The expression is stressing the uncertainty of the utterance	"Yeah but um the bottom of it its [sic] **kinda** like the stone texture and everything" (Artwalk corpus)
	Unclear / Missing data	The data can't be coded due to an inability to make a judgment (lack of context, etc)	"I **kinda** wan" (Artwalk corpus)
Created for this analysis	Prefacing Agreement	The expression is used to manage the social relationship while agreeing with the speaker	"yeah **kinda** yeah" (Artwalk corpus)
	Expressing Agreement	The expression is used when the speaker wants to	"Yeah, ***totally!***" (Roommates corpus)

		give a response in agreement	
	Highlighting commitment to the answer	The expression is emphasizing the speaker's confidence in an expressed compliment	"there was **absolutely** no drama at all and then to *go from that to*" (Roommates corpus)
	Maximizing Compliment	The expression is emphasizing the speaker's confidence in an expressed compliment (from the interlocutor)	[no examples in corpora]

Location was also coded. "Start of comment" was indicated if the word/phrase started the comment or was a standalone phrase. "End of comment" was indicated if the word/phrase ended the comment, or appeared within the last sentence of the comment. "Middle of comment" was selected for all other locations. Co-locators were coded by counting the bigrams immediately to the left and right of the word/phrase.

Results

Results for each corpus (Artwalk, IM Reciprocity, and Roommates) are presented below. Following that, cross-corpora comparisons are reported.

Artwalk

All 59 transcripts in the Artwalk corpus were coded following the procedure laid out above. Inter-rater reliability was moderate (Fleiss' kappa = .55). Below, I discuss comparison markers (*absolutely*, *totally*, *sorta*, *kinda*) first followed by *I don't know*.

Comparison markers

In this section I discuss *absolutely*, *totally*, *sorta*, and *kinda*, including discussion of location of occurrence (beginning, middle, or end of utterance) and words that frequently co-occur.

Kinda was the most frequent of the discourse markers used in the corpus (306 occurences). Taken together, the other markers - *absolutely*, *totally*, and *sorta* - were used five times less frequently (61 occurrences).

Absolutely was rare in the corpus, appearing 7 times in total. It appeared 5 times in task-related conversation, 3 times at the end of a comment, once at the start, and once in the middle. It was used to express agreement ("yeah absolutely") 4 times, and one time to highlight commitment ("I have absolutely no idea…"). In chit-chat, *absolutely* was used twice, once at the start of a comment and once in the middle of a comment. One use was to highlight commitment, and the other use was to perform agreement, although the coders disagreed on whether it was expressing or prefacing agreement.

Sorta was also rare in the corpus, appearing 13 times. In chit-chat, *sorta* was used twice, and both times it was used as a hedge. For the chit-chat conversation, *sorta* appeared at the start of the comment. It was preceded by "I" and "it", and followed by "want" and "weird. It appeared 11 times in task-related conversation - 9 of those uses were coded as *hedging*. In the other two cases, coders disagreed on use. Of the 11 uses in task-related conversation, 10 were in the middle of the comment and one was at the end of the comment. It was preceded by *it/its* four times, *you / they* four times, and followed by an adjective 3 times, a noun 3 times, and a verb 5 times.

Totally appeared 41 times in the Artwalk corpus, 22 times in task-related conversation and 19 times in chit-chat conversation.

In the task-related conversation, *totally* occurred in the middle of utterances most frequently (12 occurrences), followed by the end (6) and the beginning (4). *Totally* was followed by a verb 15 times (*see* was particularly well represented, with 5 appearances), and preceded by *I* 9 times. It was most commonly coded as *highlighting commitment* (9), followed by *expressing agreement*, *avoiding disagreements*, and *hedging*.

In the chit-chat conversation, *totally* primarily occurred in the middle of the utterances (12 occurrences), followed by the end (5) and the beginning (2). Looking at what commonly follows *totally,* it was followed by a verb 14 times and by an adjective 4 times (the last occurrence of totally was utterance-final). *Totally* was preceded most often (9 times) by a pronoun(*I, I'm/I've, they*). It was also preceded by verbs (*is, are*) and *that's / it's*. *Totally* was most commonly coded as *highlighting commitment* (10), followed by *expressing agreement* and *prefacing agreement*, respectively.

Kinda appeared 306 times in the Artwalk corpus, 271 times in task-related conversation, and 35 times in the chit-chat conversation.

In the task-related conversation, *kinda* primarily occurred in the middle of the utterances (173 occurrences), followed by end of the utterance (57) then beginning of the utterance (41). *Kinda* appeared after *it/it's* 91 times, and after *like* 24 times. Other common words to appear before *kinda* were *look*, *that/that's*, and pronouns (*you're/they're*). After *kinda, like* was very common, occurring 83 times, as well as

looks, occurring 30 times. 119 of the 251 uses were coded as hedges. This is unsurprising - as a hedge, *kinda* is able to mark that the speaker is uncertain about whether they are accurate about the appearance or about the comparison they are making. The second most common use of *kinda* was modify commitment, with 51 uses of *highlighting commitment* and 32 uses of *avoiding commitment*.

In the chit-chat conversation, *kinda* occurred in the middle of the utterances 16 times, at the end of utterances 10 times, and at the start of utterances 9 times. *Kinda* was most commonly coded as *highlighting commitment* ("you just have to read novels all day…it's kinda sweet"), with 16 occurrences. Other common uses included *hedging* and *indicating insufficient knowledge*. Coding the co-located words, verbs (*kicked*) and adjectives (*cool*) occur equally often after *kinda* (16 times each). Before *kinda*, *it/it's* appeared 11 times and *I* appeared 4 times.

I don't know

I don't know appeared 168 times in the Artwalk corpus, 30 times in chit-chat conversation and 138 times in task-related conversation. In chit-chat conversation, *I don't know* appeared 16 times at the start of a comment, 11 times in the middle of a comment, and 3 times at the end of a comment. 10 uses were coded as *indicating insufficient knowledge*, 5 as *hedging*, and the rest were split between *highlighting commitment, prefacing disagreement,* and *missing or insufficient data*. *I don't know* was preceded by *but* 4 times, *yeah* three times, and *um* and *like* one time each. *I don't know* was followed by *if* 4 times, *wh-* words 3 times, *like* two times, and *how* one time.

In task-related conversation, *I don't know* appeared 49 times at the beginning of a comment, 68 times in the middle of a comment, and 10 times at the end of a comment. 40 uses were coded as *indicating insufficient knowledge,* 28 were coded as *hedging*, 7 were coded as *avoiding commitment* or *avoiding disagreement*, and 8 were coded as *missing or insufficient data*. *I don't know* appeared as a reduplication multiple times, with 7 sequences of an *I don't know* followed by another *I don't know*. *I don't know* was preceded by *um* or *uh* a total of 11 times. A common co-locator with *I don't know* was *if*, following *I don't know* 28 times. *Wh-* words were also common after *I don't know*, appearing 17 times. *How* also appeared 11 times after *I don't know*. *I think*, *I feel*, and other expressions of thought, feeling, or belief did occur after *I don't know,* which is in line with *I don't know* serving as a hedge.

I dunno is a spoken, reduced form of *I don't know*. Because Artwalk is a spoken corpus, *I dunno* was examined for usage. *I dunno* appeared 136 times in the Artwalk corpus, 36 times in chit-chat conversation and 100 times in task-related conversation. In the chit-chat conversation, *I dunno* appeared at the start of a comment 14 times, in the middle of a comment 15 times, and at the end of the comment 7 times. *I dunno* was coded as *hedging* 14 times and as *indicating insufficient data* 13 times. The rest of the data was split between *avoiding commitment, avoiding disagreement*, and *prefacing disagreement*. Looking at words that co-locate to the left of *I dunno*, *uh* preceded *I dunno* 4 times, *but, so,* and *I / I'm* appeared 3 times each, and *yeah* appeared twice. Common words that followed *I dunno* are *I / I'm* (8 times), *if* (4 times), and *wh-* words and *but,* which appeared 3 times and 2 times, respectively.

In the task-related conversation, *I dunno* appeared at the start of an utterance 45 times, in the middle 43 times, and at the end of an utterance 12 times. 27 uses were coded as *hedging*, 17 uses were coded as *indicating insufficient data*, and the rest of the uses were split between *avoiding disagreements* and *avoiding commitment*. Before *I dunno*, *like* was the most common word, with 11 uses. Other common words include *uh/um* (9 occurrences), *it* (3 uses) and *well* (2 uses). *You know* occurred once. After *I dunno*, *wh-* words were very common (15 uses), followed by *how* (8 uses), *if* (7 uses), and *like* (6 uses). There were 7 occurrences of expressions like *I think / feel* occurring after *I dunno,* suggesting that *I dunno* can serve to hedge statements of speaker expression as well.

Friends and strangers

For the friends and strangers analysis, 12 transcripts were excluded because they did not have information on whether the participants were friends or strangers, resulting in 47 transcripts used in the analysis. Of those 47 remaining transcripts, 25 were friend dyads and 22 were stranger dyads. We examined the use of *I don't know* across task-related and chit-chat conversation. Two different things were analyzed - the number of occurrences of *I don't know* / *I dunno* and the use of *I don't know / I dunno*.

Starting with numbers used, there was no difference in the number of combined *I don't know* and *I dunnos* between friends and strangers across both chit-chat and task related conversation, $t(44.96) = .89$, $p = .37$. There was no difference in the number of combined *I don't know* and *I dunnos* in chit-chat related conversations ($t(34.40) = -.83$, $p = .41$) or in task related conversation ($t(44.57) = 1.47$, $p = .15$). Breaking apart *I don't*

know and *I dunno*, there were no differences in the number of *I don't knows* used by friends and strangers in either chit-chat ($t(21.98) = -1.40$, $p = .17$). or task-related conversation ($t(41.547) = -.31$, $p = .76$). There was also no difference in the number of *I dunnos* used in chit-chat by strangers and friends ($t(42.62) = .53$, $p = .60$). However, there was a difference in the number of *I dunnos* used in task related conversation, with more *I dunnos* in friend dyads working on tasks compared to dyads of strangers ($t(25.45) = 2.37$, $p = .03$).

To look at uses, we identified the two most common uses of *I dunno* and *I don't know*, which were *hedging* and *inability to provide requested information*. We were particularly interested in how usage frequency (how many times a hedge or a literal marker of non-information was used) was affected by conversation type and relationship.

The first analysis collapsed across *I don't know* and *I dunno* for the *I don't have the information use*. Within this use, there was no significant difference in how friends and strangers used these words across conversation types, X^2 (1, $N = 69$) = .357, $p = .550$. Breaking apart *I don't know* and *I dunno*,for the *I don't have the information* uses, there was no difference in how friends and strangers used *I don't know* across conversation types (X^2 (1, $N = 45$) = 3.794, $p = .05$). However, for the *I don't have the information* uses, *I dunno* did differ in how it was used across relationship and conversation types, with *I dunno* being more likely to be used among friends in task-settings (X^2 (1, $N = 24$) = 5.71, $p = .017$).

The second analysis collapsed across *I don't know* and *I dunno* for the *hedging* use.There was no difference in usage across relationship or conversation type, (X^2 (1, N = 67) = .45, p =.50). Breaking apart *I don't know* and *I dunno*, there was also no difference in frequency of *hedge* use across relationship or conversation type, (X^2 (1, N = 36) = .789, p =.387). There was also no difference in usage frequency for *I dunno* across relationship or conversation type, (X^2 (1, N = 31) = .003, p =.959).

Looking within chit-chat conversation, there was no difference in how *I don't know/I dunno* was used across relationships, (X^2 (1, N = 58) = .395, p =.530). Looking at the individual forms, there was again no difference in usage frequencies across relationships for *I don't know*, (X^2 (1, N = 35) = .412, p =.521), and for *I dunno* (X^2 (1, N = 23) = .059, p =.809).

Looking within task-based conversation, there was no difference in how *I don't know/I dunno* was used across relationships, (X^2 (1, N = 78) = .423, p =.515). For *I don't know*, there was no difference in how it was used across relationships, (X^2 (1, N = 46) = 3.05, p =.08). For *I dunno*, there was a significant difference in how it was used across relationships, with both the *I don't have the information* and *hedge* uses more likely among friends than strangers.

IM Reciprocity

All 65 transcripts in the IM Reciprocity corpus were coded following the procedure laid out above. Due to the difficult nature of the task, interrater reliability across the entire corpus was fair (Fleiss's kappa = .28).

Comparison markers

Kinda was, again, the most frequent of the discourse markers used in the corpus (214 occurences). Taken together, the other markers - *absolutely*, *totally*, and *sorta* - were used six times less frequently (35 occurrences).

Absolutely was rare, appearing 4 times in the IM Reciprocity corpus. Those 4 appearances were all in the chit-chat portions, and two were coded as *highlighting commitment*, and two were coded as *expressing agreement.* Three appearances were in the middle of the comment, and one appeared at the beginning.

Sorta appeared 14 times in the IM Reciprocity corpus, 4 times in chit-chat conversation and 10 times in task-related conversation. In the chit-chat portion of conversation, *sorta* appeared twice at the start of a comment and twice in the middle of a comment. The chit-chat uses were *hedging.* In the task-related conversation, 5 out of the 10 uses were coded as *hedges*, 3 were coded as *avoiding commitment* and the other two were *prefacing agreement*. *Sorta* appeared 4 times in the middle of a comment, 3 times at the beginning of a comment, and no times at the end of a comment. Looking at the co-locators, *sorta* appeared twice in the phrase "looks [sorta] like", once before an agreement particle ("ya"), once after an agreement particle ("yes"), and followed a noun three times.

Totally appeared 17 times in the IM Reciprocity corpus, 12 times in chit-chat conversation and 5 times in task-related conversation. In task-related conversation, *totally* appeared in all three locations (start, middle, end) at the same rate in the task-related conversation, and was preceded by *it's / you're* and followed by an adjective in

3 out of the five cases. In one case, it stood alone. The last case is where it appeared next to *got it* ("totally got it!"). The most common use was *highlighting commitment*.

In chit-chat related conversation, *totally* appeared at the start of a comment 6 times, in the middle 5 times, and once at the end. *Totally* was preceded by *I* 5 times, and by a verb (*see, understand, forgot*) 8 times. It was primarily coded as *highlighting commitment* (8 times), and the other uses were split between *preface agreement*, *express agreement,* and *avoiding disagreement*.

Kinda appeared 213 times in the IM Reciprocity corpus, 68 times in chit-chat related conversation and 145 times in task-related conversation. In the chit-chat related conversation, *kinda* appeared at the start of comment 23 times, in the middle of the comment 33 times, and at the end of a comment 12 times. *Kinda* was most often preceded by *its* (14 occurrences), followed by *I*. *Kinda* was followed most often by adjectives ("boring", "hard", "funny"), then by verbs ("depend", "remind", "sucks"). There were 37 occurrences of adjectives following *kinda* and 20 verbs following *kinda*. 32 uses of *kinda* were coded as *highlighting commitment to the answer*. 4 uses were coded as *expressing agreement*. One use was coded as *prefacing disagreement,* one as *hedging,* and one as *indicating insufficient knowledge*.

In task-related conversation, *kinda* is used 47 times at the start of a comment, 72 times in the middle of a comment, and 27 times at the end of a comment. *Kinda* was preceded by *it / it's* 34 times, and *is* 13 times. *Kinda* was followed by *look / looks / looked* 55 times, and *like* 22 times. It was coded as *highlighting commitment* 25 times,

and as a hedge 36 times. Other uses of *kinda* include *avoiding commitment*, *expressing agreement*, and *missing or insufficient data*.

I don't know

I don't know appeared 6 times, and all six occurrences were in chit-chat. Five uses occurred at the start of the comment, and one at the middle. Three were used to indicate *insufficient knowledge*, and three were coded as *hedging*. There were two occurrences of *I dunno*, both in chit-chat conversations and both at the start of a comment. Both of them were coded as *missing or insufficient data.*

Because this was a text-based conversation, a written, abbreviated form of *I don't know* (*idk*) was also analyzed. *Idk* appeared 76 times, 69 times in chit-chat related conversation and 7 in task-related conversation. In the task-related conversation, *idk* appeared at the start of a comment 5 times, 2 times in the middle of a comment, and no times at the end of a comment. Of those uses, three were coded as *indicating insufficient knowledge*, one was coded as *hedging*, and one was coded as *avoiding commitment*.

In the chit-chat based conversation, there were 69 appearances of *idk*. 47 of those occurred at the beginning of a comment, 24 in the middle of a comment, and twice at the end of a comment. The most common use was *indicating insufficient knowledge*, with 27 occurrences. The next most common was *avoiding commitment*, with 7 instances. The rest of the data was split between *hedging* uses and *missing or unable to code*. The most common word to precede *idk* was *but*, with 6 instances. Other words that preceded *idk* include *although*, *because*, *oh* and *yeah*. The most common

word to follow *idk* was *if*, with 13 occurrences. *How* also followed *idk* at a high rate (10) and so did *wh-* phrases (7).

Roommates

All 21 transcripts in the Roommates corpus were coded following the procedure laid out above. Due to the difficult nature of the task, interrater reliability across the entire corpus was fair (Fleiss's kappa = .32). Of the four words besides *I don't know*, only *totally* and *kinda* appeared more than a handful of times. *Absolutely* was used once in the corpus, to highlight commitment to the statement. *Sorta* was used twice in the corpus, once to avoid commitment and once to avoid assessment.

Comparison markers

Totally occurred 52 times in the Roommates corpus. *Totally* was most commonly coded as *highlighting commitment to the answer* (30 out of 52 occurrences). The rest of the occurrences were split between *expressing agreement* (9), *missing or insufficient data* (8), *avoiding assessment* (2), and *hedging*, *prefacing agreement*, *avoiding disagreement* (all had 1).

Looking at location, 25 of the *totally* occurrences were in the middle of the comment, 18 were at the start of the comment, and 9 were at the end of the comment. Of the 52 appearances, all were coded for co-located words. *Like* was the most common word before *totally*, appearing 11 times. *Yeah* also appeared often before totally (7 times), in line with *totally* being used as a way of prefacing agreement. Words or phrases that appeared after *totally* were coded for part of speech. The most common part of speech to follow *totally* was a verb, appearing 21 times (roughly half the time).

Adjectives appeared 12 times, and the rest were explanations, descriptions, or unable to be coded (nothing appeared in the position after *totally*)

Kinda appeared 156 times in the Roommates corpus. *Kinda* was most commonly coded as a *hedge* (65 instances out). The second most common way to use *kinda* was to *avoid commitment* (49 uses). The rest of the uses were split between *avoiding disagreement*, *expressing agreement*, *avoiding assessment*, *indicating insufficient information*, and *missing information*.

Kinda occurred 101 times in the middle of a comment, 21 times at the start of a comment, and 34 times at the end of a comment. All instances of *kinda* were coded for co-located words. *Like* was the most common word before *kinda*, with 24 instances, and the most common word after kinda, with 18 instances. *I* and *just* were the second most common words appearing before *kinda*, with 13 instances. *Weird* was the second most common word to follow *kinda*, with 14 appearances. The words or phrases following *kinda* were also coded for part of speech. Looking at part of speech, *kinda* was followed by an adjective 50 times, and by a verb 52 times. There were 35 instances of *kinda* followed by a descriptive phrase.

I don't know

I don't know occurred 220 times in the Roommates corpus, *I dunno* appeared zero times, and *idk* appeared zero times in the Roommates corpus. *I don't know* was most commonly coded as *hedging* (56 occurrences), followed by *indicating insufficient knowledge* (33) uses. It was particularly difficult to code *I don't know*, as it was used as a stand-alone particle fairly often, resulting in 23 *missing information*. The rest of

the data was split between the rest of the coding scheme. In Roommates, people are telling each other stories. In stories, people are likely to hedge information — if you are unsure of how truthful your utterance is, or how much your interlocutor might agree, hedging with *I don't know* signals that to your conversational partner.

Looking at location, *I don't know* occurred in the middle of a comment 104 times, at the start of a comment 87 times, and at the end of a comment 29 times. Of the 219 appearances, 100 were randomly selected and coded for co-located words. *Well, oh,* and *I mean* - words that had previously co-occurred with *I don't know* in Grant (2010) - did appear with *I don't know* in the Roommates corpus. *Well* appeared once, following *I don't know*. *Oh* appeared 4 times, twice before *I don't know* and twice after *I don't know*. *I mean* appeared 4 times, three times before *I don't know* and once after. *You mean* was not present. Other common co-appearing words included *like*, which appeared 15 times before *I don't know* and 12 times after, *wh*- words, which appeared once before, and 11 times after. Phrases like *I think, I feel,* and *I guess* also appeared before and after *I don't know*. These are phrases that express a thought or opinion, so it makes sense that a speaker using them might mark them with *I don't know*, as *I don't know* can serve as a hedge. *Kinda* appeared after *I don't know* twice, also highlighting the function *I don't know* can play as a way to soften the commitment to an upcoming statement.

Cross-corpora comparisons

To do statistical comparisons, raw counts were converted into percentages, where the number of instances was divided by the number of words in the transcript.

We predicted that there would be more *I don't know*s in Artwalk task-based conversation than in chit-chat based conversation. There were more *I don't know*s in task-based conversation, $t(58) = 2.55$, $p = .01$. *I dunno* was also used significantly more in Artwalk task-based conversation than chit-chat, $t(58) = 2.70$, $p < .001$. In IM Reciprocity, there was no significant difference in numbers between the chit-chat and task-related conditions for *I don't know*. However, *idk* was used significantly more in chat, $t(64) = 2.69$, $p = .009$.

Across Artwalk and IM Reciprocity task-related conversation, there was not a significant difference in percents of *I don't know*s, $t(71.1) = 1.77$, $p = .07$. As *I don't know* appeared only 138 times across all the task-related conversations, or 0.0006 %, in Artwalk, and *I don't know* appeared no times in task-related conversations, this result is unsurprising. Combining the forms of *I don't know* used in Artwalk task-based conversations (*I don't know* and *I dunno*) and the forms used in IM Reciprocity task-based conversations (*I don't know* and *idk*), there are more overall in IM Reciprocity, $t(118.77) = 2.89$, $p = .004$. Across Artwalk chit-chat and Roommates conversations, there was a significant difference in the number of *I don't know*s, with more in Roommates, $t(99.7) = 2.34$, $p = .02$.

Discussion

We found that *I don't know* (and the spoken and written forms *I dunno* and *idk*) have a variety of uses in both task-based and chit-chat conversation, but that it is primarily used to indicate a lack of knowledge or inability to provide the requested information. We also found that there was no difference in the frequency of *I don't*

know across spoken, audio-only and written, text-only task-based conversations. However, when looking at all the forms people could use, there were more *I don't knows* and associated forms (in this case *idk*) in the IM Reciprocity corpus. There were more *idk*s than *I don't knows*, so this is likely due to the low start up cost of typing *idk* versus the start up cost of saying *I don't know* or *I dunno*. Additionally, *I dunno* seems to have a slightly different meaning than *idk*, where *I dunno* might be used to hedge more often than *idk*.

Please see Table 11 for a summary of findings.

Table 11:Results of Study 1.

Artwalk - Task-basked	• More *I don't knows* than in Artwalk chit-chat • No difference in *I don't knows* compared to IM Reciprocity task • *I don't know* means "I don't have information" • *I dunno* means "I don't have information"
Artwalk - Chit-chat	• *I don't know* primarily means "I don't have information" • *I dunno* means "I am unsure of committing" and "I don't have information"
IM Reciprocity - Task based	• No appearances of *I don't know* • *Idk* means "I don't have information"
IM Reciprocity - Chit - chat	• *I don't know* means "I don't want to say" and "I don't have information" • *Idk* means "I don't have information" • More *idk* in chat
Roommates	• More *I don't knows* than in Artwalk chit-chat • More *hedge* uses of *I don't know* • No uses of *idk* / *I dunno*
Friends	• No difference in use of *I don't knows*

Table 11:Results of Study 1.	
Artwalk - Task-basked	• More *I don't knows* than in Artwalk chit-chat • No difference in *I don't knows* compared to IM Reciprocity task • *I don't know* means "I don't have information" • *I dunno* means "I don't have information"
Artwalk - Chit-chat	• *I don't know* primarily means "I don't have information" • *I dunno* means "I am unsure of committing" and "I don't have information"
IM Reciprocity - Task based	• No appearances of *I don't know* • *Idk* means "I don't have information"
	• More *I dunnos* in chit-chat and task-related conversation compared to strangers
Strangers	• No difference in use of *I don't know* • No difference in use of *I dunno*

In conversations that were not explicitly task-related (Roommates, Artwalk chit-chat), there were more *I don't knows* used in Roommates, in line with our predictions. One explanation for this is that *I don't know* might have been less vague in a situation where people are able to access cues beyond the voice. This is supported by the usage of *I don't know* - most of the uses in Roommates are *hedging* uses, and most of the uses in Artwalk chit-chat are *I don't have the information* uses. Another reason there might be more *I don't knows* in Roommates compared to Artwalk chit-chat is that Roommates functions like a task rather than true spontaneous communication. While it was focused on telling stories, participants were still brought into the lab and given instructions, whereas with Artwalk, participants freely chose to engage in chit-chat without prompting (see Nguyen et al., in press for similar behavior

in backchannels). The different uses of *I don't know* in this case may just reflect the differences between storytelling and problem solving in communication, rather than differences between modalities.

So far, I have been looking at how words are used in negotiating, including words in isolation(Experiment 1), in carrier phrases (Experiment 2), and in corpora (Study 3). But speakers have access to more than just the words used by their interlocutors. What goes into the common ground includes things like time, place, and assumptions about the interlocutors. Assumptions about the speaker include things like where the speaker is from, how knowledgeable the speaker is, as well as other things like gender. In the next experiment, I look at how words of negotiation can change the assumptions made about the speaker.

Authority and speaker assumptions

In this study, we tested how perceptions of a speaker's knowledge, friendliness, politeness, and professionalism vary when a statement is modified with one of the words of negotiation.

Social authority

Language use occurs in contexts, and this includes not only the environments that we speak in, but the speakers themselves. This might seem trivial, but it is important to note that speakers in conversations have access to *sociolinguistic cues* (gendered language assumptions, speech patterns, and words unique to specific dialects) that provide information about the speaker beyond the words they are using (Cocchiara, et. al., 2016; Rubin & Greene, 1992). Language use can provide cues

about where we grew up, who we are, and what groups we identify with. These cues are readily available in face to face speech, and do exist in online spaces as well, albeit in different forms.

To look at how factors about the speaker can change how the hedges are interpreted, we manipulated levels of authority (low, medium, high) and tested how the authority level affected evaluations of the speaker of the hedge. By setting the experiment in an online chat platform setting (Discord), where real names (and other information like gender and race) are often not accessible, we are able to look at how speaker information affects interpretations with a high amount of control over what readers know about the speaker. Additionally, Discord became commonly used during the pandemic as a platform for extending the classroom (Wiles & Simmons, 2022), and participants were familiar with the idea that professors, TAs, and students would have interactions like the ones we presented.

Method

Participants

There were 245 participants from a West Coast research university subject pool. Participants ranged in age from 18 to 47 (mean age = 19.8) and did not receive compensation for participating. 174 self-identified as women, 52 as men, and 14 as genderqueer or nonbinary. Participants were primarily from the state of California and were overwhelmingly from a suburban area (suburban = 137, urban = 91, rural = 17).

Materials

Participants saw a passage about fMRIs. The passage was normed for information content and naturalness in a norming experiment. The passage is presented in Figure 6, below.

a)

A student is messaging their professor on Discord.

Student: I have often wondered about fMRI technology and other kinds of black box tech, like airport scanners or x ray machines. What is fMRI technology and how does it work?

Professor: Functional magnetic resonance imaging, or FMRI, works by detecting the changes in blood oxygenation and flow that occur in response to neural activity – when a brain area is more active it consumes more oxygen and to meet this increased demand blood flow increases to the active area.

b)

A student is messaging their professor on Discord.

Student: I have often wondered about fMRI technology and other kinds of black box tech, like airport scanners or x ray machines. What is fMRI technology and how does it work?

Professor: Functional magnetic resonance imaging, or FMRI, sort of works by detecting the changes in blood oxygenation and flow that occur in response to neural activity – when a brain area is more active it consumes more oxygen and to meet this increased demand blood flow increases to the active area.

Figure 6: Passage on fMRIs that participants saw. (a) shows the unmodified condition. (b) shows the sort of condition.

Procedure

Participants saw a passage about fMRIs, and completed 12 trials (one for each word of negotiation, and one unmodified version). The fMRI passage was held constant throughout each trial with only the target word varying. However, participants were told it was a new interaction each time, and all 12 trials were randomized across participants. Participants were allowed to spend as much time as they wanted reading the passage. Keeping the passage consistent between trials was done for multiple reasons - one, it limited item effects so that participants could not change opinions of the professor based on the topic, and it meant that participants were basing judgements off of the varying words. After reading each passage, participants answered a series of questions, with the passage still in view. Three were free-response, asking for opinions of the professor and the student, as well as why the participants felt the way they did. The other questions were social measures, asking how knowledgeable the professor was (on a 1-7 scale), how friendly the professor was (1-7 scale), how polite the professor was (1-7) scale, and how professional the professor was (1-7 scale). The same measures were also collected for the student, though these were not examined (as the student's question in the prompt never varied).

Results

Perceived knowledgeability

Looking at the unmodified passage across the three conditions (professor, TA, classmate), there was no difference between perceptions of knowledgeability, $\chi^2(2) =$

5.717, p = .05. Professors scored an average of 3.97 (SD = 1.10), TAs an average of 3.93 (SD = 1.02), and classmates an average of 3.47 (SD = 1.5).

The rating given to each speaker when the answer was modified by a word was examined using a non-parametric Kruskal-Wallis test. No significant differences were found between authority conditions for any of the words tested. While authority did not seem to affect how speakers are perceived, it is possible that within each condition, words might pattern differently in perceived knowledge. To examine within-condition results, non-parametric Friedman's tests were used.

Student - professor perceived knowledgeability ratings. Within the student-professor condition (high authority), words differed from each other ($\chi^2(11) = 190.62$, $p < .001$). Pairwise comparisons with Bonferroni corrections were carried out, and are presented in Table 12 below.

Table 12: Pairwise comparisons of student – professor perceived knowledgeability ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significant difference**	**No difference**
Absolutely	4.00	3.57 (1.49)	4	*kinda**** *sorta****, *kind of****, *sort of****	*basically, clearly, unmodified, totally, partially, obviously, certainly*
Basically	4.00	3.69 (1.24)	4	*kinda****,*sorta****, *kind of****, *sort of****	*clearly, unmodified, totally, partially, obviously, certainly, absolutely*

Certainly	4.00	3.53 (1.48)	4	*kinda****, sorta****, kind of***, sort of***	*absolutely, basically, clearly, unmodified, totally, partially, obviously*
Clearly	4.00	3.69 (1.36)	4	*kinda****, sorta****, kind of****, sort of*****	*unmodified, totally, partially, obviously, certainly, absolutely, basically*
Kinda	3.00	2.83 (1.06)	3	*totally*, partially**, obviously****, certainly****, absolutely****, basically****, clearly****, unmodified*****	*sorta, kind of, sort of*
Kind of	3.00	2.77 (1.33)	3	*absolutely****, basically****, unmodified****, obviously**, certainly***, clearly*****	*sort of, totally, partially, kinda, sorta*
Obviously	4.00	3.53 (1.40)	4	*kinda****, sorta****, kind of**, sort of***	*certainly, absolutely, basically, clearly, unmodified, totally, partially*
Partially	4.00	3.47 (1.07)	4	*kinda**, sorta***	*obviously, certainly, absolutely, basically, clearly, unmodified, kind of, sort of, totally*
Sorta	3.00	2.75 (1.15)	3	*totally*, absolutely****, basically****,*	*kind of, sort of, kinda*

				*unmodified****, partially**, obviously****,certainly****,clearly*****	
Sort of	3.00	2.97 (1.17)	3	*absolutely****, basically****, clearly****, unmodified****, obviously**, certainly***	*totally, partially, kinda, sorta, kind of*
Totally	4.00	3.36 (1.18)	4	*unmodified**, kinda*, sorta**	*partially, obviously, certainly, absolutely, basically, clearly, kind of, sort of*

This table shows that the same categories seen in Experiments 1 and 2 also come out in Experiment 3 when looking at how the speaker is perceived. *Kinda, kind of, sorta,* and *sort of* (a group I will call *canonical hedges*) cluster together, with no differences between the four words in affecting perceived politeness. In Experiments 1 and 2, these words clustered together as words that were low-telling high negotiation. Here we see that they also pattern together, and lower ratings of perceived knowledge compared to words like *absolutely*. They also lower perceived knowledge compared to the *unmodified* condition, suggesting that they do act as a marker of uncertainty that interlocutors (and in this case, observers) can pick up on. The other group that came out in Experiments 1 and 2, high-telling low negotiation, significantly differ from the low-telling high negotiation group — these words on the whole increase perceptions of knowledge compared to *sorta, kinda, kind of* and *sort of*. This group

we can call *canonical boosters* and it consists of *absolutely, obviously, clearly, certainly* and *basically*. The *canonical boosters* do not differ from the unmodified condition, so it is not the case that they boost perceived knowledge compared to saying nothing, but that they boost compared to using a hedge. Interestingly, *totally* does not seem to cluster with these words.

Partially and *totally* seem to cluster together as well. *Totally* only differs from *sorta* and *kinda*, where it increases perceived knowledge ratings compared to *sorta* and *kinda*, and the *unmodified* condition, where it lowers perceived knowledge ratings (acting like the *canonical hedges*). *Partially* does the exact same thing, except that it does not affect ratings compared to the unmodified condition.

Student - TA perceived knowledgeability ratings. Within the student-TA condition (medium authority), several words differed from each other, $\chi^2(11) = 211.88$, $p < .001$. Pairwise comparisons between groups were carried out. Table 13 below breaks down the comparisons.

Table 13: Pairwise comparisons of student – TA perceived knowledgeability ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significantly different**	**No difference**
absolutely	4.00	3.87 (.80)	4	*kinda****, sorta****, sort of****, kind of*****	*unmodified, partially, totally, obviously, clearly, basically, certainly*

basically	4.00	3.63 (.99)	4	*kinda****, *sorta****, *sort of****, *kind of****	*certainly, absolutely, unmodified, partially, totally, obviously, clearly*
certainly	4.00	3.82 (1.04)	4	*sorta****, *sort of****, *kinda****, *kind of****	*absolutely, unmodified, partially, totally, obviously, clearly, basically*
clearly	4.00	3.54 (1.08)	3	*sorta****, *kinda***, *kind of***, *sort of****	*basically, certainly, absolutely, unmodified, partially, totally, obviously*
kinda	3.00	2.92 (1.08)	3	*obviously***, *clearly***, *basically****, *certainly****, *absolutely****, *unmodified****	*kind of, partially, totally, sorta, sort of*
kind of	3.00	2.82 (1.27)	3	*basically****, *absolutely****, *unmodified****, *obviously***, *clearly***, *certainly****	*partially, totally, sorta, sort of, kinda*
obviously	4.00	3.49 (1.18)	4	*sorta***, *sort of***, *kinda**, *kind of***	*clearly, basically, certainly, absolutely, unmodified, partially, totally*
partially	3.30	3.38 (1.12)	3	*unmodified***	*totally, obviously, clearly, basically, certainly, absolutely, sorta,*

					sort of, kinda, kind of
sorta	3.00	2.89 (1.03)	3	*totally*, basically****, absolutely****, unmodified****, obviously***, clearly****, certainly*****	*sort of, kinda, kind of, partially*
sort of	3.00	2.85 (1.14)	3	*totally*, clearly****, basically****, absolutely****, unmodified****, obviously***, certainly*****	*kinda, kind of, partially, sorta*
totally	4.00	3.36 (1.15)	4	*unmodified**, sorta*, sort of**	*obviously, clearly, basically, certainly, absolutely, kinda, kind of, partially*

Like the high-authority condition, the same groups emerge. *Kinda, kind of, sorta,* and *sort of* (the *canonical hedges*) cluster together and lower ratings of perceived knowledge compared to the *canonical booster* group. They also lower perceptions of perceived knowledge compared to the *unmodified* condition. The *canonical boosters* do boost, compared to the *canonical hedges*. However, they do *not* boost perceptions compared to the *unmodified* condition, again. Finally, *totally* here acts as a booster but only for *sorta* and *sort of,* and *partially* only lowers perceptions compared to the *unmodified* condition.

Student - classmate perceived knowledgeability ratings. Within the student-classmate condition (same-level authority), several words differed from each

other, $\chi^2(11) = 144.58$, $p < .001$. Pairwise comparisons between groups were carried out. Table 14 below breaks down the comparisons.

Table 14: Pairwise comparisons of student – classmate perceived knowledgeability ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Column 1: Word	**Median**	**Mean (SD)**	**Mode**	**Significant difference**	**No difference**
absolutely	4.00	3.52 (1.49)	4	*kinda**, sorta****	*unmodified, partially, obviously, clearly, certainly, kind of, sort of, basically, totally*
basically	4.00	3.48 (1.13)	4	*kinda*, sorta***	*totally, absolutely, unmodified, partially, obviously, clearly, certainly, kind of, sort of*
certainly	4.00	3.65 (1.44)	4	*kinda****, kind of****, sorta****, sort of****	*Absolutely, basically, clearly, obviously, partially, totally, unmodified*
clearly	4.00	3.82 (1.06)	4	*sorta****, kinda****, kind of****, sort of****	*certainly, basically, totally, absolutely, unmodified, partially, obviously*

kinda	3.00	3.00 (1.15))	3	*basically*, totally*, absolutely**, unmodified***, partially***, obviously****, clearly****, certainly*****	*kind of, sort of, sorta*
kind of	*3.00*	*3.10 (3)*	*3*	*unmodified*, partially*, obviously**, clearly****, certainly*****	*sort of, basically, totally, absolutely, sorta, kinda*
obviously	4.00	3.69 (1.15)	4	*sorta****, kinda****, kind of**, sort of***	*clearly, certainly, basically, totally, absolutely, unmodified, partially*
partially	*4.00*	*3.60 (1.36)*	*4*	*sorta****, kinda***, kind of*, sort of**	*obviously, clearly, certainly, basically, totally, absolutely, unmodified*
sorta	3.00	2.81 (1.16)	3	*basically**, totally****, absolutely****, unmodified****, partially****, obviously****, clearly****, certainly*****	*kinda, kind of, sort of*
sort of	*3.00*	*3.00 (1.37)*	*3*	*unmodified*, clearly****, partially*, obviously**, certainly*****	*basically, totally, absolutely, sorta, kinda, kind of*

totally	*4.00*	*3.43 (1.42)*	*4*	*kinda*, sorta*****	*absolutely, unmodified, partially, obviously, clearly, certainly, kind of, sort of, basically*

Like in the other two conditions, *canonical hedges* cluster together and *canonical boosters* cluster together, with *totally* and *partially* being the odd words out.

Looking at knowledgeability ratings within authority levels, we see that the words seem to pattern similarly to the groups seen in Experiment 1, with most of the low-telling high negotiation words forming the *canonical hedges* group and most of the high-telling low negotiation words forming the *canonical boosters* group.

Friendliness

Across the three authority levels, there was no difference in perceived friendliness in the unmodified condition, $\chi^2(2) = 3.78$, $p = .15$. Professors scored an average friendliness score of 3.08 (SD = 1.16), TAs scored an average of 2.80 (SD = 1.04) and classmates scored an average of 2.93 (SD = 1.06).

Looking at the words examined, only three showed significant differences between authority levels. The first was *kind of,* $\chi^2(2) = 7.78$, $p = .02$. Post-hoc Dunn pairwise comparisons using Bonferroni corrections were carried out. There was no difference between TAs (M = 2.98 , SD = 1.17) and professors (M =2.93 , SD = 1.37) in perceived friendliness when using *kind of,* $p = 1$. There was also no difference between professors and classmates (M =3.40 , SD = 1.04) when using *kind of,* $p =$

.114. However, classmates who used *kind of* had higher perceived friendliness scores than TAs, $p = .024$. The second word that differed between authority conditions was *totally* ($\chi^2(2) = 6.28$, $p = .04$), but no post-hoc tests were significant. The last word that differed was *clearly* ($\chi^2(2) = 6.20$, $p = .045$). There were no differences in perceived friendliness between TAs (M = 1.55, SD = .899) and professors (M = 1.73, SD = 1.10) ($p > .05$) and no differences in perceived friendliness between professors and classmates (M = 1.95, SD = 1.09) ($p > .05$). However, classmates were perceived as friendlier than TAs when using *clearly*, $p = .038$. We now examine results within the authority levels.

Student - professor perceived friendliness ratings. Within the student-professor condition (high authority), several words differed from each other, $\chi^2(11) = 246.00$, $p < .001$. Pairwise comparisons between groups were carried out. Table 15 below breaks down the comparisons.

Table 15: Pairwise comparisons of student – professor perceived friendliness ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significantly different**	**No difference**
absolutely	4.00	3.23 (1.44)	4	*obviously*****, *clearly*****	*sorta, totally, kind of, certainly, partially, unmodified, kinda, basically, sort of*
basically	3.00	3.24 (1.24))	4	*obviously*****, *clearly*****	*sort of, absolutely, sorta, totally, kind of, certainly,*

					partially, unmodified, kinda
certainly	3.00	2.99	3	*totally***, *obviously******, *clearly********	*partially, unmodified, kinda, basically, sort of, absolutely, sorta, kind of*
clearly	2.00	1.73 (1.10)	1	*kind of******, *unmodified******, *kinda******, *basically******, *absolutely******, *sorta******, *totally******, *certainly******, *partially******, *sort of********	*obviously*
kinda	4.00	3.25 (1.16)	4	*obviously******, *clearly********	*basically, sort of, absolutely, sorta, totally, kind of, certainly, partially, unmodified*
kind of	3.00	2.93	3	*totally***, *obviously******, *clearly********	*certainly, partially, unmodified, kinda, basically, sort of, absolutely, sorta*
obviously	1.00	1.67 (1.18)	1	*kind of******, *partially******, *unmodified******, *kinda******, *basically******, *sort of******, *absolutely******, *sorta******, *totally******, *certainly********	*clearly*

partially	3.00	3.12 (.929)	3	*totally***, *clearly*****, *obviously*****	*unmodified, kinda, basically, sort of, absolutely, sorta, kind of, certainly*
sorta	4.00	3.31 (1.22)	4	*obviously*****, *clearly*****	*totally, kind of, certainly, partially, unmodified, kinda, basically, sort of, absolutely*
Sort of	3.00	3.25 (1.21)	4	*clearly*****, *obviously*****	*absolutely, sorta, totally, kind of, certainly, partially, unmodified, kinda, basically*
totally	4.00	3.77 (1.29)	4	*Kind of***, *certainly***, *clearly***, *obviously*****, *partially***, *unmodified***	*Absolutely, basically,kinda, sorta, sort of*

One main contrast emerges here - *clearly* and *obviously* compared to the other words. *Clearly* and *obviously* significantly lower the perception of friendliness compared to all other words and the unmodified condition. Other *canonical boosters*, such as *absolutely* and *basically* might have been assumed to share this, as they group together in Experiments 1 and 2, as well as when looking at perceived knowledge, but this is not the case. In fact, *absolutely* and *basically* do not affect perceived friendliness ratings at all. *Totally* boosts friendliness ratings compared to *kind of, certainly, clearly, obviously, partially,* and the unmodified condition. Unlike the perceived knowledge cases, however, *partially* does not pattern with *totally* here.

Student - TA perceived friendliness ratings. Within the student-TA condition (medium authority), several words differed from each other, $\chi^2(11)= 344.1$, $p < .001$. Pairwise comparisons between groups were carried out. Table 16 below breaks down the comparisons.

Table 16: Pairwise comparisons of student – TA perceived friendliness ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significantly different**	**No difference**
absolutely	3.00	3.28 (1.02)	4	obviously****, clearly****	*sorta, totally, kind of, certainly, partially, unmodified, kinda, basically, sort of*
basically	3.00	3.31 (1.02)	3	obviously****, clearly****	*sort of, absolutely, sorta, totally, kind of, certainly, partially, unmodified, kinda*
certainly	3.00	2.97 (1.11)	3	totally**, obviously****, clearly****	*partially, unmodified, kinda, basically, sort of, absolutely, sorta, kind of*
clearly	1.00	1.53 (.91)	1	kind of****, unmodified****, kinda****, basically****, absolutely****,	*obviously*

				sorta****, totally****, certainly****, partially****, sort of****	
kinda	3.00	3.18 (.94)	3	obviously****, clearly****	*basically, sort of, absolutely, sorta, totally, kind of, certainly, partially, unmodified*
kind of	3.00	2.94 (1.20)	3	totally**, obviously****, clearly****	*certainly, partially, unmodified, kinda, basically, sort of, absolutely, sorta*
obviously	1.00	1.52 (.94)	1	kind of****, partially****, unmodified****, kinda****, basically****, sort of****, absolutely****, sorta****, totally****, certainly****	*clearly*
partially	3.00	2.95 (.99)	3	*totally***, *clearly*****, *obviously*****	*unmodified, kinda, basically, sort of, absolutely, sorta, kind of, certainly*
sorta	3.00	3.16 (.99)	3	obviously****, clearly****	*totally, kind of, certainly, partially, unmodified, kinda, basically, sort of, absolutely*

sort of	3.00	3.01 (1.01)	3	*clearly*****, *obviously*****	*absolutely, sorta, totally, kind of, certainly, partially, unmodified, kinda, basically*
totally	4.00	3.45 (1.15)	4	*kind of***, *unmodified***, *certainly***, *clearly*****, *obviously*****, *partially***	*Absolutely, basically, sorta, sort of, kinda*

Like in the professor condition, *clearly* and *obviously* lower perceived friendliness ratings for TAs compared to using nothing (the *unmodified* condition) or using any of the other words tests. Additionally, *totally* boosts friendliness ratings compared to using nothing, *kind of, clearly, obviously, partially,* and *certainly*.

Student - classmate perceived friendliness ratings. Within the student-classmate condition (same-level authority), several words differed from each other, $\chi^2(11) = 252.95$, $p < .001$. Pairwise comparisons between groups were carried out. Table 17 below breaks down the comparisons.

Table 17: Pairwise comparisons of student – classmate perceived friendliness ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significantly different**	**No difference**
absolutely	3.00	3.01 (1.35)	4	*obviously*****, *clearly*****	*sort of, kinda, sorta, kind of, totally, basically, partially,*

					unmodified, certainly
basically	4.00	3.46 (1.06)	4	*clearly****, obviously****, partially*,*	*Absolutely, certainly, kinda,kind of, sorta, sort of, totally, unmodified*
certainly	3.00	2.93 (1.33)	3	*obviously****, clearly*****	*absolutely, sort of, kinda, sorta, kind of, totally, basically, partially, unmodified*
clearly	2.00	1.95 (1.09)	1	*unmodified****, absolutely****, kinda****, sorta****, kind of****, totally****, basically****, partially****, certainly****, sort of*****	*obviously*
kinda	3/00	3.34 (1.04)	4	*obviously****, clearly*****	*sorta, kind of, totally, basically, partially, unmodified, certainly, absolutely, sort of*
kind of	4.00	3.40 (1.06)	4	*obviously****, clearly*****	*totally, basically, partially, unmodified, certainly, absolutely, sort of, kinda, sorta*

obviously	1.00	1.48 (.955)	1	*partially*****, *unmodified*****, *absolutely*****, *sort of*****, *kinda*****, *sorta*****, *kind of*****, *totally*****, *basically*****, *certainly*****	*clearly*
partially	3.00	2.92 (1.23)	3	*basically**, *clearly*****, *obviously*****	*unmodified, certainly, absolutely, sort of, kinda, sorta, kind of, totally*
sorta	3.00	3.30 (1.26)	3	*obviously*****, *clearly*****	*kind of, totally, basically, partially, unmodified, certainly, absolutely, sort of, kinda*
sort of	3.00	3.07 (1.25)	3	*clearly*****, *obviously*****	*kinda, sorta, kind of, totally, basically, partially, unmodified, certainly, absolutely*
totally	4.00	3.36 (1.42)	4	*obviously*****, *clearly*****	*basically, partially, unmodified, certainly, absolutely, sort of, kinda, sorta, kind of*

Like in the high-authority and medium-authority conditions, *clearly* and *obviously* had the greatest negative impact on perceived friendliness. No other words are significantly different from the *unmodified* condition.

In the high and medium authority conditions, *clearly* and *obviously* patterned together and lowered ratings, *absolutely* and *basically* patterned together and did not affect ratings, and *totally* acted as a booster compared to unmodified condition. However, in the classmate group, only *clearly* and *obviously* had an effect on ratings. This suggests that classmates are given larger amounts of leeway in what is considered friendly when using these words compared to professors and TAs.

Politeness

In the unmodified condition, across the three levels of authority there were no differences in perceived politeness, $\chi^2(2) = 2.30$, $p = .31$.

Only one word differed in perceived politeness between the three conditions, *clearly*, $\chi^2(2) = 8.45$, $p = .015$. Professors who used *clearly* (M = 2.03 , SD = 1.2) had no difference in politeness compared to classmates (m = 2.12, SD = 1.10), $p = .109$, or TAs ($p = 1$). However, TAs who used *clearly* (m = 1.68, SD = 1.00) were seen as less polite than classmates ($p = .017$).

Student - professor ratings of perceived politeness. A non-parametric Friedman's test was carried out. Within the student-professor condition (high authority), there was a significant difference in the underlying distributions of each word, $\chi^2(11) = 222.17$, $p < .001$. Pairwise comparisons between words were carried out, with Bonferroni corrections applied. Table 18 below breaks down the comparisons and shows which words differ from one another.

Table 18: Pairwise comparisons for student – professor perceived politeness ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significantly different**	**No difference**
absolutely	4.00	3.23 (1.37)	4	*obviously****, *clearly****	*totally, unmodified, kinda, kind of, sorta, sort of, basically, partially, certainly*
basically	3.00	3.19 (1.26)	4	*obviously****, *clearly****	*partially, certainly, absolutely, totally, unmodified, kinda, kind of, sorta, sort of*
certainly	4.00	3.21 (1.45)	4	*obviously****, *clearly****	*absolutely, totally, unmodified, kinda, kind of, sorta, sort of, basically, partially*
clearly	2.00	2.03 (1.23)	2	*kinda****, *kind of****, *sorta****, *basically****, *absolutely****, *totally****, *unmodified****, *sort of****, *partially****, *certainly****	*obviously*
kinda	3.00	3.07 (1.23)	4	*obviously****, *clearly****	*kind of, sorta, sort of, basically,*

					partially, certainly, absolutely, totally, unmod
kind of	3.00	2.95 (1.39)	4	*obviously****, clearly*****	*sorta, sort of, basically, partially, certainly, absolutely, totally, unmodified, kinda*
obviously	1.00	1.72 (1.27)	1	*kinda****, kind of****, sorta****, sort of****, basically****, partially****, absolutely****, totally****, unmodified****, certainly*****	*clearly*
partially	3.00	3.23 (1.02)	3	*clearly****, obviously*****	*certainly, absolutely, totally, unmodified, kinda, kind of, sorta, sort of, basically*
sorta	3.00	3.08 (1.22)	4	*obviously****, clearly*****	*sort of, basically, partially, certainly, absolutely, totally, unmodified, kinda, kind of*
sort of	3.00	3.20 (1.11)	3	*clearly****, obviously*****	*basically, partially, certainly, absolutely,*

					totally, unmodified, kinda, kind of, sorta
totally	4.00	3.31 (1.22)	4	*obviously*****, *clearly*****	*unmodified, kinda, kind of, sorta, sort of, basically, partially, certainly, absolutely*

Clearly and *obviously* lowered perceived politeness compared to using nothing (the *unmodified* condition) and the rest of the words tested. No other words had an effect compared to the *unmodified* condition, or compared to each other.

Student - TA ratings of perceived politeness. A non-parametric Friedman's test was carried out. Within the student-TA condition (medium authority), there was a significant difference in the underlying distributions of each word, $\chi^2(11) = 347.29$, $p < .001$. Pairwise comparisons between words were carried out, with Bonferroni corrections applied. Table 19 below breaks down the comparisons and shows which words differ from one another.

Table 19: Pairwise comparisons of student – TA perceived politeness. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significantly different**	**No difference**
absolutely	3.00	3.23 (.92)	3	obviously****, clearly****	*basically, partially, unmodified, sort of, sorta, kinda,*

					certainly, kind of, totally
basically	3.00	3.29 (.94)	3	obviously****, clearly****	*partially, unmodified, sort of, sorta, kinda, certainly, kind of, totally, absolutely*
certainly	3.00	3.14 (1.03)	3	obviously****, clearly****	*kind of, totally, absolutely, basically, partially, unmodified, sort of, sorta, kinda*
clearly	1.00	1.68 (1.00)	1	sorta****, kinda****, kind of****, totally****, absolutely****, basically****, unmodified****, sort of****, certainly****, partially****	*obviously*
kinda	3.00	3.07 (.94)	3	obviously****, clearly****	*certainly, kind of, totally, absolutely, basically, partially, unmodified, sort of, sorta*
kind of	3.00	3.11 (1.20)	3	obviously****, clearly****	*totally, absolutely, basically, partially, unmodified, sort of, sorta, kinda, certainly*
obviously	1.00	1.36 (.84)	1	sort of****, sorta****, kinda****, kind of****, totally****,	*clearly*

				absolutely****, basically****, partially****, unmodified****, *certainly****	
partially	3.00	3.29 (.93)	3	*clearly****, *obviously****	*unmodified, sort of, sorta, kinda, certainly, kind of, totally, absolutely, basically*
sorta	3.00	3.09 (.91)	3	*obviously****, *clearly****	*kinda, certainly, kind of, totally, absolutely, basically, partially, unmodified, sort of*
sort of	3.00	3.00 (1.00)	3	*clearly****, *obviously****	*sorta, kinda, certainly, kind of, totally, absolutely, basically, partially, unmod*
totally	3.00	3.16 (1.03)	3	*obviously****, *clearly****	*absolutely, basically, partially, unmodified, sort of, sorta, kinda, certainly, kind of*

Clearly and *obviously* again lowered politeness ratings compared to the other words as well as compared to the *unmodified* condition.

Student - classmate ratings of perceived politeness. A non-parametric Friedman's test was carried out. Within the student-professor condition (same-level

authority), there was a significant difference in the underlying distributions of each word, $\chi^2(11) = 314.36$, $p <$. Pairwise Dunn-Bonferroni comparisons between words were carried out, with Bonferroni corrections applied. Table 20 below breaks down the comparisons and shows which words differ from one another.

Table 20: Pairwise comparisons of student – classmate perceived politeness ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significantly Different**	**No difference**
absolutely	3.00	2.92 (1.38)	4	obviously****, clearly****	*sort of, certainly, kinda, partially, totally, unmodified, sorta, basically, kind of*
basically	3.00	3.22 (1.01)	4	obviously****, clearly****	*kind of, absolutely, sort of, certainly, kinda, partially, totally, unmodified, sorta*
certainly	3.00	3.00 (1.38)	3	obviously****, clearly****	*kinda, partially, totally, unmodified, sorta, basically, kind of, absolutely, sort of*
clearly	2.00	2.12 (1.11)	2	absolutely****, kinda****, totally****, unmodified****, sorta****, basically****,	*obviously*

				kind of****, sort of****, certainly****, partially****	
kinda	3.00	3.18 (1.06)	3	obviously****, clearly****	*partially, totally, unmodified, sorta, basically, kind of, absolutely, sort of, certainly*
Kind of	3.00	3.34 (1.00)	3	clearly****, obviously****	*Absolutely, basically, certainly, kinda, partially, sorta, sort of, totally, unmodified*
obviously	1.00	1.60 (1.02)	1	absolutely****, sort of****, kinda****, partially****, totally****, unmodified****, sorta****, basically****, kind of****, certainly****	*clearly*
partially	3.00	3.11 (1.22)	4	*clearly*****, *obviously*****	*totally, unmodified, sorta, basically, kind of, absolutely, sort of, certainly, kinda*
sorta	3.00	3.20 (1.11)	4	obviously****, clearly****	*basically, kind of, absolutely, sort of, certainly, kinda, partially, totally, unmodified*

sort of	3.00	3.02 (1.16)	3	*clearly*****, *obviously*****	*certainly, kinda, partially, totally, unmodified, sorta, basically, kind of, absolutely*
totally	3.00	3.04 (1.34)	4	*obviously*****, *clearly*****	*unmodified, sorta, basically, kind of, absolutely, sort of, certainly, kinda, partially*

Clearly and *obviously* were again the words that lowered perceived friendliness compared to using nothing or any other of the words tested.

Professionalism

There were significant differences between professionalism ratings and authority conditions. Starting with the unmodified condition, there was a significant difference in how professional professors, TAs, and classmates are perceived, $\chi^2(2) = 17.89$, $p < .001$. Following this with pairwise Dunn tests with Bonferroni corrections, when answering the question in the *unmodified* condition, classmates (M = 3.55, SD = 1.54) are perceived as less professional than TAs (M = 4.29, SD = 1.03), $p < .001$, and less professional than professors (M = 4.25, SD = 1.19), $p < .001$. There is no difference between how TAs and professors are perceived professionally ($p = 1$) in the *unmodified* condition.

There was also a significant difference in how *basically* affected professionalism ratings across conditions, $\chi^2(2) = 14.19$, $p < .001$. Pairwise

comparisons show that there was no difference between TAs (M = 3.67, SD = .97) and professors (M = 3.48, SD = 1.12) in ratings (p = 1). However, when using *basically* classmates (M = 3.17, SD = 1.01) were perceived as less professional than professors (p = .003), and less professional than TAs (p = .004).

Absolutely also differed between conditions, $\chi^2(2) = 6.81$, $p < .05$. Pairwise comparisons show that there was no significant difference between how professors (M = 3.55, SD = 1.54) and TAs (M = 3.82, SD = .95) are rated (p =1). There was also no significant difference between how classmates (M = 3.28, SD = 1.40) and professors are rated (p = .127). However, there was a significant difference between how TAs and classmates are perceived, with classmates rated as less professional than TAs when using *absolutely* ($p = .04$) .

Clearly also differed between conditions, $\chi^2(2) = 15.29$, $p < .001$. Professors (M = 2.56, SD = 1.47) and TAs (M = 2.22, SD = 1.19) did not differ on ratings of perceived professionalism when using *clearly*, (p = .258). Neither did professors or classmates (M = 3.04, SD = 1.41) when using *clearly* (p = .117). However, TAs were scored lower on professionalism when using *clearly* in the response, compared to classmates ($p < .001$).

Student - professor ratings of perceived professionalism. A non-parametric Friedman's test was carried out. Within the student-professor condition (high authority), there was a significant difference between words, $\chi^2(11) = 212.44$, $p < .001$. Pairwise Dunn-Bonferroni comparisons between words were carried out,

with Bonferroni corrections applied. Table 21 below breaks down the comparisons and shows which words differ from one another.

Table 21: Pairwise comparisons for student – professor perceived professionalism ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significant differences**	**No difference**
absolutely	4.00	3.55 (1.54)	4	*kinda****, *obviously*****, *clearly*****, *sorta****	*partially, unmodified, totally, kind of, sort of, certainly, basically*
basically	4.00	3.60 (1.40)	4	*kinda****, *obviously*****, *clearly*****, *sorta****	*absolutely, partially, unmodified, totally, kind of, sort of, certainly*
certainly	4.00	3.31 (1.46)	4	*unmodified*****, *obviously*****, *clearly***	*basically, absolutely, partially, kinda, sorta, totally, kind of, sort of*
clearly	2.00	2.56 (1.47)	2	*certainly***, *basically*****, *absolutely*****, *partially*****, *unmodified*****	*kinda, sorta, totally, kind of, sort of, obviously*
kinda	3.00	2.81 (1.322)	2	*basically****, *absolutely****, *partially*****, *unmodified*****	*sorta, totally, kind of, sort of, certainly, obviously, clearly*
kind of	3.00	2.95 (1.46)	4	*unmodified*****, *partially**, *obviously**	*sort of, certainly,*

					basically, absolutely, clearly, kinda, sorta, totally
obviously	2.00	2.25 (1.46)	2	*totally*, kind of*, sort of***, basically****, absolutely****, partially****, unmodified****, certainly****	*clearly, kinda, sorta*
partially	4.00	3.83 (1.21)	4	*kinda****, sorta****, totally*, kind of*, obviously****, clearly****	*unmodified, sort of, certainly, basically, absolutely*
sorta	3.00	2.79 (1.29)	2	*basically***, absolutely***, unmodified****, partially****	*totally, kind of, sort of, certainly, obviously, clearly, kinda*
sort of	3.00	3.17 (1.31)	4	*unmodified****, obviously***	*certainly, basically, absolutely, partially, clearly, kinda, sorta, totally, kind of*
totally	3.00	3.08 (1.31)	4	*unmodified****, partially*, obviously*	*kind of, sort of, certainly, basically, absolutely, clearly, kinda, sorta*

Only three words do not lower the perceived professionalism compared to the *unmodified* condition - *absolutely, basically,* and *partially*. The measures of central tendency for the *unmodified* condition were close to the top of the rating scale

(median = 4, mean = 4.25, mode = 5), which suggests that the participants had a default assumption about professors — namely that a professor will be professional. Within the words that do lower perceived professionalism, *obviously* lowers perceived professionalism compared to all except *clearly*, *kinda*, and *sorta*.

Student - TA ratings of perceived professionalism. A non-parametric Friedman's test was carried out. Within the student-TA condition (medium authority), there was a significant difference between words, $\chi^2(11) = 331.52$, $p < 001$. Pairwise Dunn-Bonferroni comparisons between words were carried out, with Bonferroni corrections applied. Table 22 below breaks down the comparisons and shows which words differ from one another.

Table 22: Pairwise comparisons for student – TA perceived professionalism ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significant differences**	**No difference**
absolutely	4.00	3.82 (.95)	4	*kinda****, *obviously****, *clearly****, *sorta****, *totally****, *sort of***, *kind of**	*certainly, unmodified, basically, partially*
basically	4.00	3.67 (.97)	4	*kinda**, *obviously****, *clearly****, *sorta****, *totally**, *sort of**	*partially, absolutely, certainly, unmodified, kind of*
certainly	4.00	3.80 (1.14)	4	*obviously****, *clearly****, *sorta****, *kinda****, *totally****, *sort of****, *kind of**	*unmodified, basically, partially, absolutely*

clearly	2.00	2.22 (1.20)	2	*kind of***, *basically*****, *absolutely*****, *unmodified*****, *partially*****, *certainly*****	*sorta, kinda, totally, sort of, obviously*
kinda	3.00	2.98 (1.09)	3	*basically***, *partially***, *absolutely*****, *certainly*****, *unmodified*****, *obviously*****	*totally, sort of, kind of, clearly, sorta*
kind of	3.00	3.13 (1.33)	4	*absolutely**, *unmodified*****, *certainly*, obviously*****, *clearly***	*basically, partially, sorta, kinda, totally, sort of*
obviously	2.00	1.91 (1.05)	2	*sorta***, *kinda*****, *totally*****, *sort of*****, *kind of*****, *basically*****, *partially*****, *absolutely*****, *unmodified*****, *certainly*****	*clearly*
partially	4.00	3.61 (1.25)	4	*clearly*****, *sorta*****, *kinda***, *totally***, *sort of*, obviously*****	*absolutely, certainly, unmodified, kind of, basically*
sorta	3.00	2.77 (1.13)	2	*basically*****, *absolutely*****, *unmodified*****, *partially*****, *certainly*****, *obviously***	*kinda, totally, sort of, kind of, clearly*
sort of	3.00	3.02 (1.16)	3	*basically*, absolutely***, *unmodified*****, *partially*, certainly*****, *obviously*****	*kind of, clearly, sorta, kinda, totally*

totally	3.00	2.98 (1.18)	3	*basically***, *absolutely*****, *unmodified*****, *partially***, *certainly*****, *obviously*****	*sort of, kind of, clearly, sorta, kinda*

Like professors, TAs were assumed to generally be professional (median = 5.00, mean = 4.29, mode =5). Six words significantly differ from the unmodified condition (*clearly, kinda, kind of, sorta, sort of,* and *totally*). All six lower the rating of perceived professionalism compared to the *unmodified* condition. A similar picture emerges here in regards to *obviously* — it lowers perceived professionalism compared to the unmodified condition as well as all the other words except for *clearly*.

Student - classmate ratings of perceived professionalism. A non-parametric Friedman's test was carried out. Within the student-classmate condition (same-level authority), there was a significant difference between words, $\chi^2(11) = 145.71$, $p < 001$. Pairwise Dunn-Bonferroni comparisons between words were carried out, with Bonferroni corrections applied. Table 23 below breaks down the comparisons and shows which words differ from one another.

Table 23: Pairwise comparisons of student – classmate perceived professionalism ratings. Asterisks indicate significance level (= .05; ** = .01; *** = .001, **** = .0001).*

Word	**Median**	**Mean (SD)**	**Mode**	**Significant differences**	**No difference**
absolutely	4.00	3.28 (1.400)	4	*obviously*****, *sorta**	*unmodified, certainly, partially, totally, kinda, sort*

					of, clearly, basically, kind of
basically	3.00	3.17 (1.08)	3	-	*kind of, absolutely, unmodified, certainly, partially, sorta, totally, kinda, sort of, clearly, obviously*
certainly	4.00	3.51 (1.53)	4	*obviously****, sorta****, totally****, kinda**, sort of*, clearly**	*partially, basically, kind of, absolutely, unmodified*
clearly	3.00	3.04 (1.41)	2	*certainly*, partially**, obviously***	*basically, kind of, absolutely, unmodified, sorta, totally, kinda, sort of*
kinda	3.00	2.95 (1.20)	3	*unmodified*, certainly**, partially***, obviously**	*sort of, clearly, basically, kind of, absolutely, sorta, totally*
kind of	3.00	3.31 (1.40)	4	*obviously*****	*absolutely, unmodified, certainly, partially, sorta, totally, kinda, sort of, clearly, basically*
obviously	2.00	2.19 (1.27)	2	*kinda*, sort of**, clearly**, basically****, kind of****, absolutely****, unmodified****, partially****, certainly*****	*sorta, totally*

partially	4.00	3.60 (1.45)	4	*obviously****, *totally****, *sorta****, *sort of***, *kinda***,clearly***	*Kind of, certainly,basically, absolutely, unmodified*
sort of	3.00	2.92 (1.38)	4	*certainly**, *partially***, *obviously***	*clearly, basically, kind of, absolutely, unmodified, sorta, totally, kinda*
sorta	3.00	2.71 (1.21)	3	*absolutely**, *unmodified****, *certainly****, *partially****	*totally, kinda, sort of, clearly, basically, kind of, obviously*
totally	3.00	2.70 (1.09)	2	*unmodified***, *certainly****, *partially****	*kinda, sort of, clearly, basically, kind of, absolutely, obviously, sorta*

Classmates were also rated fairly high on the perceived professionalism scale in the *unmodified* condition (median = 4.00, mean = 3.55, mode = 5). However, far fewer words impacted the perceived professionalism score compared to the other two conditions. *Kinda*, *obviously, sorta,* and *totally* lowered the perceived professionalism of a classmate compared to the unmodified condition, but no other words did.

Discussion

For evaluating the perceived knowledge of a speaker, hedges really do act as hedges. Regardless of authority level, hedges lowered the rating of perceived knowledge compared to the unmodified conditions, suggesting that when people are attempting to determine how much to trust the speaker, they do take hedges into calculation as markers of a lack of knowledge. Conversely, words that are thought of as boosters did *not* boost perceived knowledge of a speaker compared to unmodified

speech. While they did cluster together in how they related to other words, they do not seem to make a speaker be evaluated as more confident.

Looking at friendliness and politeness, a similar pattern emerges. Overall, there are two words that stood out as affecting perception of the speaker's friendliness and politeness, *clearly* and *obviously*. Both words lowered friendliness and politeness ratings, suggesting that in particular, these two words are deemed impolite and unfriendly when giving a response to a question. Because these words had no effect on perceived knowledge ratings, but did affect perceived friendliness and politeness ratings, it is possible that what people do when they encounter these words is treat them as metalinguistic commentary on speaker relationship maintenance rather than commentary on the speaker's knowledge. This is to say that when these words are encountered, conversational partners will assume the speaker is making a statement about their relationship with the addressee, rather than signaling something about the speaker. Other speaker-oriented modifiers have been proposed, where the modifier operates on the attitude the speaker has (such as *totally* by Beltrama & Staum Casasanto, 2017; Beltrama, 2018; Waksler, 2013) it is possible that these words fall into a similar category. Interestingly, *clearly* is most rude when coming from a TA, suggesting that attitude expectations can be modulated by relationships such as social authority.

For perceived professionalism, classmates are given the lowest ratings of perceived professionalism when the answer is unmodified. When we look at Table 23, we can see that classmates are also the least likely to be penalized for using words

that might be deemed less professional if they were coming from a professor or a TA. This suggests that people might be more generous to their peers in evaluations of professionalism compared to people who should hold authority over them.

The norms of written spontaneous communication are still evolving, and professors, TAs, and classmates all interacting together in a fairly anonymous online space is relatively new, since this only took off as a response to the challenges of educating during a pandemic. Discord, which started as a platform for gamers, was co-opted to extend the classroom, and it has been shown that it creates a closer, more interactive environment than either entirely in-person or entirely on-line classes (Wiles & Simmons, 2022). Environments where people feel closer and casual might lead to more spontaneous speech features like hedges (like how hyperpartisan spaces also have more spontaneous speech features — see Nguyen, et al., 2022 for more). Even beyond classroom chat platforms, it is likely that online communication norms are shifting online to favor speech, even from authority figures, that feels casual and spontaneous and uses things like *kinda* and *sorta* as we move into an era where primary communication is mediated through online platforms.

Additionally, almost all of the speakers were young adults raised in California and spoke California English as a first language. Norms for what is considered proper speech to use in an academic setting may have been influenced by this, as politeness norms are shaped by culture (both at the individual level and at the societal level), and differ across speakers of different varieties of English (Schneider & Placencia, 2017).

One followup analysis will be to examine speakers of English from different regions, to see if our results differ.

General Discussion

Words of negotiation are a set of words that provide information about how much negotiation a speaker is willing to entertain with an addressee about some modified noun (e.g., "sorta a lager") or state (e.g., "sorta open"). In three experiments, we showed that these words clearly cluster into distinct groups, with different interpretations across situations, communication media, and relationships. In one study we showed that these words vary when the goal of the conversation is task-related versus when it is related to chit-chat conversation.

In Experiment 1, we looked at *I don't know, basically, kinda, pretty, absolutely, kind of, totally, sorta, very, clearly, sort of, partially, obviously,* and *certainly* in isolation. We predicted that these words would show differences in the amount of certainty/telling, correction, and negotiation that they implied. Our results supported this. We found that when looking at telling versus negotiation, words clustered loosely into two groups, words that implied *high telling-low negotiation,* and words that implied *low telling-high negotiation,* with *pretty* in the middle of the two groups. Words also clustered loosely into two correction - negotiation groups, with words that implied *high correction - low negotiation* and words that implied *low correction-high negotiation*.

In Experiment 2, we looked at these words (minus *I don't know*) in context, confirming the results of Experiment 1 and probing measures of similarity, certainty,

and sureness. The curve of negotiation (how much negotiation a word implies) was linked to aspects of sureness, similarity, and certainty - words that are low in negotiation were high in certainty, sureness and similarity, whereas words that were high in negotiation were low on these qualities. Thus, speakers could be doing multiple things when they choose to use a negotiation word - if it precedes a replacement for an item, as in this experiment, the speakers could be acknowledging that they know the object is not similar and the negotiation could be taking place as to whether the object is similar enough to suffice. Alternatively, they could be communicating information about their own certainty or sureness (they may not know if the object is similar enough or if this is an acceptable contribution to make) and negotiating their level of information with their addressee.

In Study 1, we found that *I don't know* (and associated forms *idk* and *I dunno*) can be found across conversation types (storytelling, chit-chat, and task-related conversations). Additionally, we found that *I don't know* was rare in the texted corpus, but the shortened counterpart *idk* was more common. When thinking about typing, there is a large start-up cost to composing a message, so it is possible that participants preferred to type *idk* instead of *I don't know* due to that cost. *Idk* and *I don't know* did not seem to differ in uses (such as being used to indicate lack or knowledge or being used to indicate hedging), so it is also possible that *idk* could be the standard form of *I don't know* in texted speech.

In Experiment 3, we found that perceived knowledge is affected by hedges — hedges lower the perception of how knowledgeable the speaker is. In contrast,

boosters do not boost perception of how knowledgeable the speaker is. It seems that listeners are not looking for evidence to raise trust in a statement, but rather for evidence to lower it. If speakers are being cooperative, and are operating from a mutual assumption that everyone is trying to be as informative and truthful as possible, then information about when to *not* trust a speaker is more valuable than information that "boosts" perceived knowledge. Likewise, it seems that speakers and listeners interpret words like *clearly* and *obviously* as cues to speaker *feeling* rather than an indication of knowledge, as shown in the results for politeness and friendliness. It also seems that, at least in cases of professionalism, those who are expected to share the same social level (classmates, in Experiment 3), are given leeway in what is professional and what is not. While these words clustered into two categories in Experiments 1 and 2, in Experiment 3, we show that these words come apart when considering discourse effects at a higher level - these words of negotiation affect how speakers are perceived across various dimensions.

Totally and (to some extent) *partially* seem to also affect ratings in ways that differ from the *canonical hedges* and *canonical boosters* for perceived knowledge, and in other ways for friendliness, politeness, and professionalism as well. As previously noted, *totally* has been proposed to function as a way for a speaker to indicate their attitudes - namely that they want the proposition added to the common ground (Beltrama & Staum Casasanto, 2017). In Experiment 3, it does not seem to be the case that *totally* always indicates strong belief. Rather, *totally* can function as a hedge in the same way that *kinda* and *sorta* do. But it is likely that the reason *totally*

can boost perceptions of friendliness is because of this speaker attitude function that *kinda* and *sorta* do not seem to have. By deliberately signaling to the conversational partner, the speaker has shown themselves to be cooperative and willing to mark points in the conversation, and this likely is what is increasing perceptions of friendliness.

Together, these series of experiments show that negotiation in conversation is a process that can be delicately shaped by the words that we choose to use. Modifiers communicate information about the speaker to the addressee — about what the speaker knows, how vague the speaker is willing to be, how sure they feel about their vagueness, and whether or not the speaker feels negotiation is needed on an issue at hand.

The work done here has applications in a variety of domains including technological advances, educational advances, and communicating with special populations. Knowing what different words imply is important for creating an artificial agent that can chat like a person does. Part of understanding what makes a conversation naturalistic is understanding the grounding process between two participants, including negotiation. Understanding the different meanings inherent to each word is also important when teaching language-learners - the negotiation process is dependent on choosing the correct words. Learning which word is appropriate to convey the intended meaning can help language learners elicit necessary information from their addressee, and can facilitate good conversations that all parties enjoy. Additionally, this research is important for D/dHH children,

especially for D/dHH children with hearing parents and educators. Hearing parents and educators of D/dHH children would benefit from understanding how to orient their child to conceptual pacts and negotiations being made in conversations. For the hearing parents and educators, this will be beneficial, as they might not realize that D/dHH children need assistance in learning to orient to conversational cues of negotiation. For D/dHH children, this may improve socialization, particularly in education settings or with hearing peers. By learning to engage in the negotiation process at an earlier age, the impacts of conversational impairments and socialization difficulties will be reduced for D/dHH children.

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