

WELL, SOME OF YOUR RESEARCH IS GOOD: EXAMINING SCALAR IMPLICATURES

UTILIZING ERPS

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Well, Some of Your Research is Good: Examining Scalar Implicatures Utilizing ERPs

Although it is likely that our intention is to convey the most relevant information possible in any given conversation, the context of the conversation has a powerful influence on the way our statements are interpreted. We may use a term that we believe to be efficient, but is unclear to our conversational partner. An example of this may be the use of scalar terms. When conveying information to our conversational partner, one may rely on the commonly used “some” or “likely” to describe an event without realizing that these terms are in fact ambiguous in that they do not point to a specific thing (Grice, 1975). The use of these terms leaves the intended meaning up to the listener and their interpretation of those words is founded in the context of the entire conversation. It may be the case that the conversation involved a sensitive issue in which the listener’s feelings are at stake. The interpretation of the word choice will differ in that scenario versus a neutral conversation (Bonneton, Feeney, & Villejoubert, 2009). Indeed, even a disfluency in the conversation can alert the listener to interpret word choice more carefully. Although these filler words are often used in conversation, words such as “well” and “uh” function as a paralinguistic cue to listeners that may influence their interpretation of the conversation (King et al., 2017; Loy et al., 2017).

In order to understand the compounded influence that these factors have on interpretation, the present research sought to examine how scalars and disfluencies used in conversation alter neurophysiological responses.

Scalar Implicatures

Grice (1975) proposed the idea of implicatures to describe terms that functioned to implicitly express information without explicitly stating it. Scalar implicatures (e.g. some) are termed as such due to their existence on a ranked scale of informative expression (Noveck &

Sperber, 2012). While there are many scalar terms in language (like, good, sometimes, possible), the quantity term ‘some’ is often studied in research.

Pragmatic vs. Semantic

Scalar expressions have both a semantic and a pragmatic meaning (Tomlinson, Bailey, & Bott, 2013). The pragmatic meaning of a scalar term would be based on the assumption that the implicature is the most informative interpretation of the term. For example, Gricean pragmatics would assume the scalar term ‘some’ means more than one, but not all (Bonneton, 2014; Grice, 1975, 1989; Horn, 1984). If it was “all,” the speaker would have said so. The semantic meaning of ‘some’ indicates more than one. <Some, all> is an example of a scale that can be interpreted with their logical implications moving from left to right. The scale <some, all> demonstrates the semantic notion that you cannot have all without having some (Bonneton, 2014).

Logically speaking, the quantifier “some” in sentences means at least one. This logical interpretation is broad and that broadness does not rule out the possibility that “some” indicates “all.” Thus, sentences with the logical, or semantic, use of “some” are logically correct, although they may be interpreted as odd.

Semantic interpretation is underinformative, identifying a lesser amount of information with its meaning: “some and possibly all.” When the semantic term is used, it logically leaves room for the possibility that the term “some” could also mean “all.” Comparatively, pragmatic is more informative identifying “more than one, but not all,” which contrasts the semantic interpretation because it excludes “all” as a possibility.

One interpretation of the processing of scalar implicatures is presented by Levinson (2000). According to this view, meanings of scalar implicatures are automatically generated and can be cancelled if context suggests it should be. Sperber and Wilson (1995) propose relevance

theory as another interpretation of scalar implicature processing. Relevance theory is a pragmatic theory suggesting that speakers convey the most relevant information as is necessary for easy processing by the listener (Sperber & Wilson, 1995; Noveck, & Sperber, 2012). In terms of scalars, relevance theory would predict that quantifiers would be interpreted pragmatically (some but not all). In relevance theory, using a term ‘some’ to mean at least one and possibly all, would not be the most informative way to use the term. Thus, if a speaker used the term ‘some’, relevance theory would suggest that it would be interpreted as some but not all, or pragmatically.

Bott and Noveck (2004) proposed that a resolution regarding Levinson’s theory and relevance theory could be concluded through examination of the processing speed of sentences with scalar inferences. Their research focused on underinformative sentences (e.g. “some elephants are mammals”) because a scalar inference makes that sentence false while the lack of a scalar inference makes it true. In four experiments, Bott and Noveck found support for relevance theory. As relevance theory would argue, the logical response should be made faster than a pragmatic response. Indeed, they found that pragmatic interpretations to the underinformative sentences took longer than the logical interpretation. Additionally, when participants were given more time to respond, it tended to lead to higher rates of pragmatic interpretations. Overall, these results indicate “people initially employ the weak, linguistically encoded meaning of some before employing the scalar inference” (Bott & Noveck, 2004, p18). This seems intuitive when recalling the original definition of pragmatic. Keeping in mind that pragmatic constitutes more than one, but not all, a sentence such as “some elephants are mammals” is essentially claiming “more than one elephant are considered mammals, but not all elephants are considered mammals.” This is a false statement, so it is reasonable that the processing of this sentence requires more time.

In contrast, the logical (semantic) interpretation occurs in response to contextual cues, for example in response to politeness markers. That is, people will interpret “some” as meaning “all” when it is conveying negative information (e.g., “Some disliked your presentation” when it is clear that everyone (i.e., all) disliked the presentation). Bott and Noveck demonstrated that pragmatic interpretations took longer, indicating a processing cost, while the semantic interpretation occurred more quickly, indicating that it is a more automatic interpretation. Contextual influence on the interpretation of scalars is discussed in the following section.

Politeness and Scalars

Bonnefon and colleagues (Bonnefon, 2014; Bonnefon, Feeney, & Villejoubert, 2009) present another interpretation that focuses on the role of politeness. Although efficiency can explain some scalar interpretations, it cannot explain their interpretations in face-threatening contexts. ‘Face’ was proposed by Goffman (1967) as a “positive social value” that is claimed and projected that individuals are motivated to save for themselves as well as for their conversation partner. Thus, face-threat is an act that challenges the face of an interlocutor (Brown & Levinson, 1987).

Face-threat results from a multitude of variables used in speech. “Impositions, utterances, hostile statements such as criticism or disapproval, and bad news or bad prospects” are all utterances that may lead to a listener’s face being threatened (Bonnefon, 2014, p. 7). Bonnefon explains that face-threatening content creates opposition between efficiency and politeness and thus the typical effects of efficiency disappear because of politeness (2014).

Participants in Bonnefon, Feeney, and Villejoubert’s (2009) experiment rated how accurately and how considerately a speaker communicated good or bad news, in various situations. The first experiment found that the inference is endorsed less often in face-threatening

contexts (when X implies a loss of face for the listener). The second experiment ruled out a possible confound between face-threatening contexts and lower-bound contexts. The third experiment showed that while saying ‘some X-ed’ when one knew for a fact that all X-ed is always perceived as an underinformative utterance, it is also seen as a nice and polite thing to do when X threatens the face of the listener. In sum, only when the news was bad (and thus face-threatening) did a tension appear between accuracy and consideration, which were used as analogous to efficiency and politeness.

Previous literature has demonstrated that the manner in which the implicature is presented affects its interpretation. Disfluencies such as “um” or “uh” have been shown to be used as a contextual cue to listeners (Clark & Fox Tree, 2002; King, Loy, & Corley, 2017; Loy, Rohde, & Corley, 2019). Disfluencies can be used as a politeness marker in conversational contexts. Loy, Rohde, and Corley (2019) implemented these disfluencies in their research on the interpretation of the scalar implicature “some.” Since listeners encode paralinguistic cues quickly, these cues have influence over the subsequent interpretations of the stimuli (King et al., 2017; Loy et al., 2017). Loy et al. (2019) used audio recordings of a speaker that either contained the target scalar (“some”) and a disfluency (e.g. “uh”) or did not contain a disfluency. In scenarios where a fictional character was being face-threatened and used a disfluency preceding “some” (e.g. “I ate uh, some Oreos”) participants interpreted “some” more semantically (indicating “some and possibly all”). Even absence of language can convey meaning to participants. In scenarios where the speaker was described as staying “silent for a few seconds” before replying, participants were more likely to interpret the scalar as being more negative. In other words, in a face-threatening context when a speaker paused before replying, participants interpreted “some” more semantically (Bonneton et al., 2015, p 236). Their results suggested that

the participants interpreted the disfluency as a social marker for politeness. Participants interpreted scalars in fluent statements more pragmatically while disfluency lessened this tendency and instead promoted an interpretation that was more semantic. Additionally, their findings demonstrated that listeners' interpretations of the scalar occur quickly and depend on the context in which it is presented (Loy et al., 2019).

ERP

Electroencephalogram (EEG) was developed as a way to examine electrical activity in the brain by Berger in 1929. Measuring this neural activity was conducted through electrodes placed on the scalp, amplifying the signal, and plotting the changes in voltage over time. However, analyzing any specific neural responses was difficult due to the amount of neural activity. In order to resolve this, methodology was developed enabling researchers to isolate specific neural responses through event-related potentials, or ERPs (Luck, 2014). ERP research is typically considered one of the best neurophysiological methods for identifying brain responses to sensory, cognitive, or motor events. Compared with fMRI and PET measures, which provide strong spatial resolution, ERPs provide high-resolution temporal information.

ERPs work through time-locking neural responses to specific experimental stimuli. ERPs are often identified in terms of their latency and amplitude – either a positive or negative deflection peaking at a given time (in milliseconds) after stimulus onset. For instance, a P3 component would represent a positive deflection around 300 milliseconds after stimulus onset, and an N400 would represent a negative deflection around 400 milliseconds after stimulus onset (Luck, 2014).

Chapman and Bragdon (1964) are credited with the discovery of the P300 component. Their experiment involved the sequential presentation of stimuli in the form of numbers and

simple flashes of light. The ERP was time-locked to the number presentation and to the light presentation. The researchers had anticipated a sensory response elicited by the stimuli, however they also unexpectedly found that the presentation of the numbers produced a positive neural response around 300ms that was not seen with the presentation of the flashes of light. Chapman and Bragdon (1964) hypothesized this positive neural spike in response to the numbers was a result of the meaningfulness of this stimuli compared to the relative meaninglessness of the flashes of light. Later, the P300 would also be shown to be proportional to the “surprise value” of a stimulus (Donchin, 1981).

The N400 was first discovered by Kutas and Hillyard (1980). These researchers presented sentences that were congruent (e.g. he shaved off his moustache and beard), improbable (e.g., he shaved off his moustache and eyebrows), or semantically anomalous (e.g. he shaved off his moustache and city). Kutas and Hillyard had hypothesized that the semantically anomalous sentence would produce a P300 component which previous studies had found to be linked to presenting participants with unexpected stimuli. However, their findings indicated an N400 component in which the highest peak was negative and time-locked at 400 milliseconds. These researchers also demonstrated that this finding was not merely the result of an unexpected event at the end of the sentence. Their findings indicated that when presented with a semantically congruent but physically anomalous final word (e.g. She put on her high-heeled SHOES) or a grammatically incorrect final word (e.g. all turtles have four leg), participants elicited a P300 component instead of an N400 component. This finding demonstrated that the N400 component is related specifically to semantic processing not just a response to unexpected stimuli as with P300 (Kutas & Hillyard, 1980). This discovery has since led to the utilization of the N400 as a dependent measure examining semantic incongruity.

When interpreting an N400 component, the peak does not have to be negative in *absolute* terms but rather, it can peak *more* negatively as compared to other conditions. Additionally, the N400 component has been shown to be largest over centro-parietal sites of the brain and demonstrates a slight right hemispheric bias regarding written words in a sentence format (Kutas & Federmeier, 2011).

As a result of Kutas and Hillyard's (1980) research, the primary theory behind the N400 component has been that N400 amplitude reflects semantic integration, or the process of integrating the meaning of an incoming word with the prior semantic context. More recently, the memory retrieval hypothesis proposes that N400 amplitude is based on the retrieval of semantic and lexical information from long-term memory (Hoeks & Brouwer, 2014).

ERPs and Scalars

N400 has been used to research language processing in many studies. However, research examining scalars with N400 is less prevalent. Nieuwland, Ditman, and Kuperberg (2010) examined the neural processes behind scalar implicatures by presenting participants with sentences in which the scalar implicature was either appropriately fitting to the sentence or not. For example, in the statement "some people have pets," the scalar implicature is more appropriate than in the statement "some people have lungs" (Nieuwland et al., 2010). These researchers found that presentation of the scalar implicature in less appropriate sentences, like in the latter sentence presented above, led to a larger N400. The researchers concluded that not only do scalar meanings contribute to processing of sentences, but the context of the sentence also effects the interpretation.

Politzer-Ahles, Fiorentino, Jiang, and Zhou (2013) approached this issue differently. They examined participants' N400 to a manipulation to the scalar term, itself. Politzer-Ahles et

al. manipulated the appropriateness of the scalar term to images that the participants saw. For example, a picture may have shown an image with all of a number of girls sun tanning or an image with some but not all of the girls sun tanning. Based on the image that the participants had seen, the scalar implicature “some” would be more or less appropriate. The results demonstrated an increased N400 when the use of the scalar implicature was inconsistent with the image the participants saw. In other words, if participants saw an image in which all of the girls were sun tanning then read a sentence that stated that some of the girls were sun tanning, the participants had a sustained negativity to “some.” Their findings from their research suggest that ERP activity may differ between errors in visual information and errors in lexical information.

Hunt, Politzer-Ahles, Gibson, Minaib, and Fiorentina (2013) echoed previous findings when examining neural responses to sentences structured so that both the semantic and pragmatic interpretations were true with respect to the preceding picture, neither interpretation was true, or the semantic interpretation was true but the pragmatic interpretation false. For example, “both the semantic and pragmatic interpretations were true with respect to the preceding picture when the boy in fact cut some but not all of the steaks, neither interpretation was true when the boy in fact cut none of the steaks, or the semantic interpretation was true but the pragmatic interpretation false when the boy in fact cut all of the steaks” (Hunt et al., 2013, p 1).

Their research suggests that N400 processes are influenced by information gathered from scalar implicatures as well as semantic information. N400 discerns between words that make a sentence true with respect to a context – in this case, the picture, words that falsify a sentence, and those that make a sentence semantically true but pragmatically false (Hunt et al., 2013).

More recently, Holtgraves and Kraus (2018) examined face-threatening, conversational

contexts with the presentation of different types of scalar implicatures. The neural responses examined were the scalar implicature, primarily as a function of face-threat, as well as the subsequent interpretation. Their research demonstrated a significant P300 finding. They found a larger P300 response for semantic interpretations of a scalar over the pragmatic interpretations. This suggests that more cognitive resources were needed for the “some and possibly all” (semantic) interpretation relative to the “more than one, but not all” (pragmatic) interpretation. This study also found support for the effects of context on the interpretation of the scalar implicature. When the context was more face-threatening, the P300 difference between the semantic and pragmatic interpretation was larger than when the context was not as face-threatening. The researchers conclude that in contexts with heightened face-threat, the participants hold an expectation of politeness but the clarification with semantic scalar term infringes on that expectation. For example, in a face-threatening conversation between a classmate and a presenter regarding how many people in the audience were on their cell phones instead of listening to the presenter, the classmate clarifying “all of the audience were on their cell phones” violates the expectation of politeness. According to Holtgraves and Kraus (2018), this is the cause of the increased difference between the two interpretations (pragmatic and semantic) when the context is face-threatening.

Present Study

The present research seeks to extend already existing information regarding the neural interpretation (N400) of scalars in several ways. First, as opposed to focusing solely on quantity expressions (i.e. using the scalar implicature “some”), the present study will examine multiple scalar expressions, including quantity (some), frequency (sometimes), and probability (possible). These scalar expressions have been recognized by Levinson (1983) and previously found by

Holtgraves and Kraus (2018) to function in the same way as the scalar implicature “some.”

Second, Holtgraves and Kraus (2018) examined whether participants generated a pragmatic or semantic meaning by comparing neural responses to pragmatic and semantic implications. However, there was a confound in that manipulation in so far as the pragmatic interpretation required a negation (e.g., not all) while the semantic interpretation did not (e.g., all). It is possible that the inclusion of a negation in the pragmatic alternative necessitated additional processing time, relative to the semantic alternative of the scalar implicature (Tian & Breheny, 2016). Thus, the present study will examine responses to a semantic meaning and a more extreme pragmatic meaning, importantly, one that does not require a negation. For example, for the scalar expression “some” the more extreme pragmatic alternative will be “most,” for the scalar expression “sometimes” the more extreme pragmatic alternative will be “often,” and for the scalar expression “possible” the more extreme pragmatic alternative will be “likely.” Thus, the present research will be comparing semantic interpretations with a more extreme scalar term, rather than comparing semantic and pragmatic interpretations. Examining pragmatic alternatives in this way will be novel in scalar research (see Table 1 for example stimuli).

Third, the present research will extend previous research by examining the influence of the polite discourse marker “well.” As previous research has demonstrated, face-threatening scenarios that included a disfluency preceding the scalar implicature encouraged a more semantic interpretation of the scalar term (e.g. “some” was interpreted as “some and possibly all”) (Loy, Rohde, & Corley, 2019). “Well” is expected to function in the present research in the same way disfluencies functioned in Loy et al.’s (2019) research. That is, “well” will signal the operation of politeness processes and hence prompt a more negative interpretation of the scalar term. Thus, it is expected that the difference between the semantic and pragmatic interpretation will be

enhanced when the utterance includes “well.”

Fourth, the present study will utilize fixed-rate rapid visual presentation (RSVP) of the stimuli. Fixed RSVP allows the researcher to determine the duration of the presentation of the word or sentence. Although, Dittman, Holcomb, and Kuperberg (2007) demonstrated that utilizing a self-paced reading task that requires a motor response (as was used in Holtgraves and Kraus, 2018) does not create any discernable ERP artifacts, the present study will use fixed RSVP to give all participants the same amount of time to process the stimuli. Fixed RSVP has traditionally been used in ERP language research to ensure that early neural processing is associated with specific intervals so that neural activity is time-locked to a specific word and activation to subsequent words can be examined (Dittman, Holcomb, & Kuperberg, 2007). Utilizing fixed RSVP will ensure that neural activation is not influenced by motor responses.

Fifth, the dialogue that will be presented in the present study improves upon the conversational element of the stimuli used in Holtgraves and Kraus (2018). For example, one target sentence in Holtgraves and Kraus (2018) was presented as: “You are sometimes lazy, specifically, you are always lazy” (p104). While this stimulus is presented in a conversational format, it does not necessarily reflect how a natural conversation would sound. Instead of using a one-sentence reply, the present study uses a dialogue format to achieve a more natural presentation of the stimuli. Thus, in the present study, the example stimuli from Holtgraves and Kraus (2018) would be presented as:

Person A: You are sometimes lazy.

Person B: Sometimes?

Person C: You are always lazy.

See Experimental materials for a more detailed descriptions of the alterations to Holtgraves and

Kraus' (2018) stimuli and for a full presentation of the present study's stimuli, see Appendix A.

For the present research, the major independent variables include preface ("well" or no "well"), implicature (semantic or more extreme interpretation/pragmatic), and scalar expression (quantity, frequency, probability). In "well" preface conditions, a decreased N400 to "some" is expected compared with no "well" preface. For example, a conversation that does not begin with the preface "well" will require increased processing that would have already taken place in the "well" preface condition. Additionally, a reduced N400 for the subsequent semantic meaning of the scalar term (e.g. "all") is expected when the "well" preface occurs compared to the absence of "well" preface. "Well" signals face-work thus the face-threatening meaning of the semantic interpretation (e.g. "all") is less surprising. These hypotheses address the third purpose of the present research, to extend previous research by examining the general influence of the polite discourse marker "well," as well as its specific influence of scalar expressions.

Further, a greater N400 for semantic interpretation (e.g. "all") is expected compared with the more extreme pragmatic interpretation (e.g. "most) due to people's tendency to generate implicatures in conversational contexts. This was demonstrated in Holtgraves and Kraus (2018) although it was seen in the P300 amplitude – possibly due to the required motor response. This hypothesis addresses the second purpose of the present research by comparing semantic interpretations with a more extreme scalar term, rather than comparing semantic and pragmatic interpretations.

Method

Participants

Power calculations were conducted to estimate the required sample size given the within-subjects design and ERP measures, with a Cohen's f effect size of .33 and power of .95, the suggested total sample size was 21. For this study, there were 11 participants.

These participants were recruited through the Ball State University Psychological Science research subject pool in SONA and were granted 1.5 research credits towards an introductory psychology course for their participation.

The participants ranged from ages 18-21 ($M=18.9$, $SD=.99$) with 60% of participants being male.

Experimental Materials

Stimulus materials will consist of sets of scenarios with dialogues containing a scalar term for each of the scalar expression categories (i.e. quantity, frequency, and probability). Samples of stimulus material are presented in Table 1 and complete materials are presented in the Appendix. There are 24 sets of scenarios with dialogues for each of the three scalar expression categories, resulting in 72 scenario/dialogues. Each dialogue contained one of the scalar terms, which was presented twice in the dialogues – first in the second chunk of Person B's reply and again in Person A's second reply (see Procedure for a more detailed description of presentation) – and presented a final reply that contained either a more extreme pragmatic interpretation or a semantic interpretation. For example, a target utterance for the quantity term is “most of them were left” (more pragmatic) or “all of them were left” (semantic).

Table 1

Sample Stimuli Materials

Quantity:	John couldn't make it to Susan's party. To make up for it, he made her some cookies and brought them over for the party. After the party was over, they had the following exchange: John: Were any/ of my cookies/ left over?/ Susan: (Well,)/ There were some/ left over./
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	John: Some?/ Susan: <i>Most (All)</i> / of them/ were left over.
Frequency:	Beth and John are classmates and often study together. One day, they had the following exchange: Beth: Do you/ think I'm/ a poor student?/ John: (Well,)/ You are sometimes/ a poor student./ Beth: Sometimes?/ John: You are/ <i>often (always)</i> / a poor student.
Probability:	Mrs. Taylor was cleaning the room of her two sons, Jon and Joe. While doing so, she discovered a pack of cigarettes. While Joe was at soccer practice, she had the following exchange with Jon: Mom: Are/ those your/ cigarettes?/ Jon: (Well,)/ It's possible that/ the cigarettes are mine./ Mom: Possible?/ Jon: It's <i>likely (certain)</i> that /the cigarettes/ are mine.

Note: The polite version was created by including “well” (in parentheses) preceding the first reply. The semantic version was created by replacing the more pragmatic italicized words in the final reply with the bolded word in parentheses. The backslashes (/) identify the chunked presentation of the stimuli.

All versions of the scenarios were face-threatening, in which the utterances could be seen as socially harmful in some way. However, there were two different versions of these face-threatening scenarios, a “well” preface and a no “well” preface. The “well” preface, when present, preceded the first use of the scalar term. Additionally, there were more extreme pragmatic and semantic versions for each of the stimuli. Content of the scenarios were taken from Holtgraves and Kraus (2018) and altered to create a more conversational dynamic; 12 scenarios were taken for each of the scalar expression categories used in the present research (36 scenarios were taken in total) and the format was altered to more accurately represent a conversational dialogue. “Well” was inserted in the present study’s stimuli in order to create a polite version and, instead of negations, the present study’s stimuli use more extreme pragmatic terms. For example, Holtgraves and Kraus (2018)’s first probability scenario is as follows: “Mrs. Taylor was cleaning the room of her two sons, Jon and Joe. While doing so, she discovered a pack of cigarettes. While Joe was at soccer practice, she asked Jon whether the cigarettes were his (Joe’s). Jon replied: It's possible that the cigarettes are mine (Joe’s), specifically, it's [not]

certain that the cigarettes are mine (Joe's)" (Holtgraves & Kraus, 2018, p 105). In their study, the name in parentheses was presented as an alternative to "mine" in order to reduce face-threat. The bracketed term "not" was included to create the implicature condition. All scenarios in the present study were face-threatening and therefore did not include alternatives to the face-threat. Additionally, the present study uses more extreme pragmatic alternatives to replace the semantic terms as opposed to the negations used in Holtgraves and Kraus (2018). Additional scenarios were generated (12 new scenarios for each of the scalar expression categories; 36 new scenarios were created taken in total) to increase the number of stimuli that will be presented to participants.

Four different stimuli sets were developed in order for participants to see an equal number of "well" preface and no "well" preface versions and pragmatic versions across all three scalar categories. Additionally, 24 filler trials that did not contain a semantic or pragmatic interpretation were presented to participants. Participants saw a total of 96 trials, 72 of which were critical trials.

Procedure

After signing the informed consent, participants were seated in front of a monitor. Participants were be capped for the EEG and a four-minute baseline was collected. Following the baseline, participants read and verbally received instructions regarding the task and performed six practice trials. Participants received feedback from the experimenter regarding their performance. E-Prime 2.0 software (Schneider, Eschman, & Zuccolotto, 2002) was used for stimulus presentation.

Each trial was formatted as follows: First, a brief scenario describing a conversation between two or more people was presented on the screen. Participants pressed the Space key

indicating that they understood the scenario. On the following screen, an utterance said by Person A was displayed on the monitor in chunks of 3 for 1000ms each. Next, Person B's remark was presented. In "well" preface conditions, the hedge was first presented after the interlocutor's name (e.g. "Susan: Well,") for 500ms and in "no well" conditions, the interlocutor's name (e.g. "Susan:") was presented without the hedge for 500ms. The rest of Person B's responses were presented in chunks of 3 for 1000ms each. An ERP was time-locked to the hedge/blank screen as well as the scalar term, which was always be presented in the third chunk. Following this, Person A repeated the previously used scalar term in one chunk, presented for 1000ms and this scalar term was ERP time-locked. Next, Person B's semantic or pragmatic response was presented in 3 chunks, 1000ms each, with the critical term varying in which chunk it was presented, however always matched to its alternative counterpart (i.e. if the semantic term is presented in chunk 2, then the pragmatic term was also presented in chunk 2). The semantic and pragmatic terms were ERP time-locked. Finally, a statement referencing the scenario (e.g. Nobody liked John's cookies) or the dialogue (Rose is a happy person) was presented and participants pressed a key marked "Yes" or "No" to indicate whether or not this sentence was accurate or inaccurate. These judgments are included in order to maintain participant attention and engagement with the task. Half of the questions asked were accurate with a "yes" response and half were accurate with a "No" response.

EEG Data Analysis

EEG recordings were taken from 64 sites on the scalp using a BioSemi ActiveTwo EEG amplifier system with two 32 electrode strands. Two EoG electrodes were used to capture eye movements and two more electrodes were placed on each mastoid (right and left). Data was recorded using BioSemi software (BioSemi, Amsterdam, The Netherlands) continuously

throughout the entire task. ERPs were recorded for presentations of the preface or lack of preface (interlocuter's name only), the scalar terms, and for the presentation of the semantic or more extreme scalar (pragmatic) interpretation term.

Results

Preprocessing data

EEG data was down-sampled to 512 Hz (i.e., 1.95 samples per millisecond). The electrooculogram was monitored with electrodes FP1 and FP2, as well as two additional electrodes placed at lateral and sub-ocular positions in relation to the right-eye.

Offline, data was analyzed using EEGLAB plugin for MATLAB (Delorme & Makeig, 2004). Data underwent a band pass filter of .5 to 55 Hz and was referenced digitally to the averaged mastoids. Data was then subjected to visual inspection for major muscle and unusual motor/ocular artifacts, which were removed.

An Independent Component Analysis (ICA) was then used to remove any remaining artifacts in the data (Onton, Westerfield, Townsend, & Makeig, 2006). If any scalp electrodes were deemed unsuitable for analysis, they were removed for interpolation before performing ICA. The initial learning rate for the ICA was 0.001 and the ICA was converged when weight change was smaller than $1E-7$. The components were visually inspected and artefactual components were rejected. Each epoch was then baseline corrected and any previously removed channels were interpolated using spherical interpolation. Time-locked stimuli were then placed into bins which could then be grand averaged into event related potentials for analyses for each scalp location.

Behavioral Data

Both accuracy and reaction time were collected on judgments made about the overall

scenarios. Overall, participant accuracy was 92.9% ($M = .93$, $SD = .26$). Reaction time for participants ranged between 1090 ms to 23184 ms, with an overall mean reaction time of ($M = 3258$ ms, $SD = 2394$).

Participants exceeding three standard deviations above the mean for reaction time were removed from data analyses, however this did not alter the results of the data in a significant way, thus all participants were included in the following analyses.

ERP Results

ERP data was analyzed from 10 frontal sites (F1, F2, F3, F4, FC1, FC2, FC3, FC4, Fz, FCz) averaged for statistical analyses. The major independent variables for the present study included preface (“well” or no “well”), implicature (semantic or more extreme interpretation/pragmatic), and scalar expression (quantity, frequency, probability). However, due to insufficient data as a result of stimulus miscoding in Eprime, the independent variable scalar expression (quantity/“some,” frequency/“sometimes,” probability/“possible”) was not analyzed. Additionally, this insufficient data prevented the first hypothesis (the prediction that the presentation of “well” would reduce an N400 response to “some” compared with no “well” presentation). This is further considered in the discussion section.

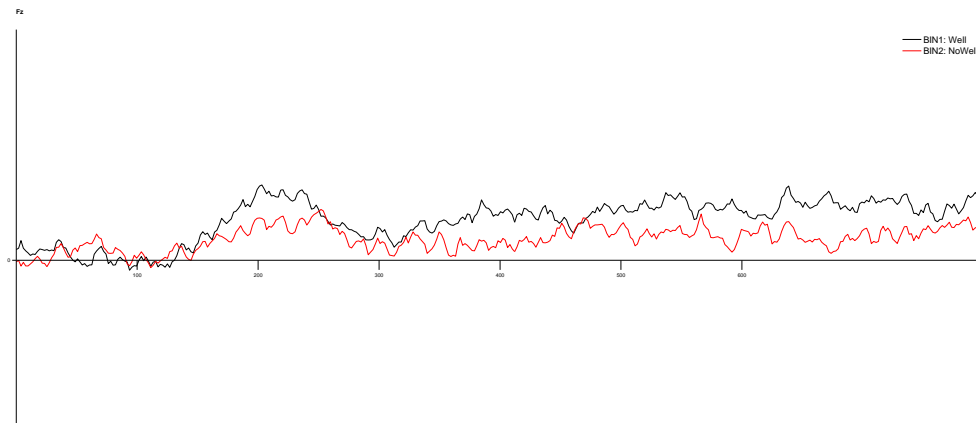
N400. Data for the N400 was recorded from the 250-500 ms time window. An initial 2 (preface; “well” vs. no “well”) X 2 (implicature; pragmatic vs. semantic) factorial ANOVA was run on the mean amplitudes of frontal sites to test for the neurological response to the presentation of “well” and no “well” and presentation of the semantic and more extreme scalar (pragmatic).

For frontal sites there was no main effect of preface, $F(1, 11) = .690$, $p = .424$, partial $\eta^2 = .06$. nor a main effect of implicature, $F(1, 11) = .076$, $p = .788$, partial $\eta^2 = .007$. There was also no interaction effect, $F(1, 11) = .018$, $p = .897$, partial $\eta^2 = .002$. Reference Table 2 for

means and standard error for the above analyses.

Table 2 Means and Standard Error for N400 as a Function of Preface and Interpretation

Variable	Mean	Standard Error
Well	3.732	.815
No Well	6.962	.649
Pragmatic	5.030	.782
Semantic	5.664	.670
Well*Pragmatic	3.135	1.054
Well*Semantic	4.330	1.415
No Well*Pragmatic	6.925	.815
No Well*Semantic	6.999	.943



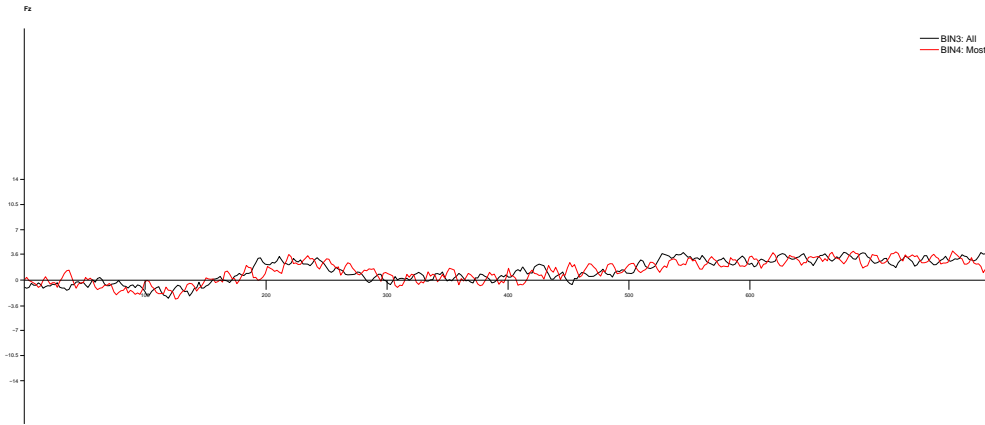


Figure 1. A visual depiction of one representative site (Fz). The top image is a representation of “well” presentation vs. no “well” presentation. The bottom image is a representation of semantic scalar implicature (identified in the key as “All”) vs. the more extreme scalar implicature (identified in the key as “Most”).

Exploratory Results

P300. Data for the P300 was recorded from the 200-350 ms time window. A 2 (preface; well vs. no well) X 2 (implicature; pragmatic vs. semantic) factorial ANOVA was run on the mean amplitudes to test for differences in interpretation of preface “well” or no “well” and the interpretation of the semantic and more extreme scalar (pragmatic) stimuli on frontal sites.

For frontal sites there was no main effect of preface, $F(1, 11) = .700, p = .421$, partial $\eta^2 = .06$ nor a main effect of implicature, $F(1, 11) = .121, p = .735$, partial $\eta^2 = .01$. There was also no interaction effect, $F(1, 11) = .071, p = .795$, partial $\eta^2 = .006$. Reference Table 3 for means and standard error for the above analyses.

Table 3 Means and Standard Error for P300 as a Function of Preface and Interpretation

Variable	Mean	Standard Error
Well	1.388	.779
No Well	3.936	.978
Pragmatic	3.112	1.070
Semantic	2.212	.889
Well*Pragmatic	1.422	.923
Well*Semantic	1.353	1.199

No Well*Pragmatic	4.802	1.263
No Well*Semantic	3.071	.870

Hemispheric Analysis. Two analyses examining the relationship between the preface and brain hemisphere, and implicature and hemisphere was conducted on all sites for an N400 effect (250-500 ms). First, a 2 (preface; well vs. no well) X 2 (hemisphere; left vs. right) factorial ANOVA was run on the mean amplitudes to test for differences in interpretation of the preface “well” or no “well” on all sites in the left and right hemispheres.

There was no main effect of preface, $F(1, 11) = .043, p = .839, \text{partial } \eta^2 = .004$. There was a marginal main effect of hemisphere, $F(1, 11) = 4.648, p = .054, \text{partial } \eta^2 = .30$. A decreased N400 in the left hemisphere was seen ($M = 1.800$) compared to the right hemisphere ($M = 2.500$), $F(1, 11) = 4.648, p = .054, \text{partial } \eta^2 = .30$. There was also a marginal interaction effect, $F(1, 11) = 4.844, p = .050, \text{partial } \eta = .31$. The reduced N400 in the left hemisphere (vs. the right hemisphere) was greater when “well” was presented ($M = 1.552$ vs. $M = 2.532$) than when “well” was not presented ($M = 2.078$ vs. $M = 2.467$). Reference Table 4 for means and standard error for the above analyses.

Table 4 Means and Standard Error for N400 as a Function of Preface and Hemisphere

Variable	Mean	Standard Error
Well	2.027	1.040
No Well	2.273	.653
Left Hemisphere	1.800	.726
Right Hemisphere	2.500	.582
Well*Left Hemisphere	1.522	1.103
Well*Right Hemisphere	2.532	.997
No Well*Left Hemisphere	2.078	.742
No Well*Right Hemisphere	2.467	.618

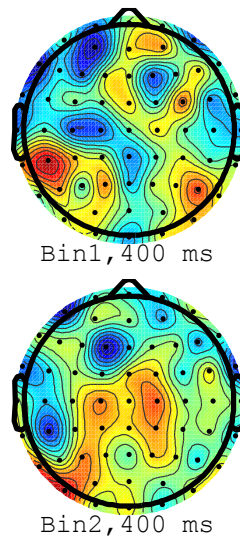


Figure 2. A visual depiction of hemispheric activity. The top image (Bin1) is a representation of “well” presentation. The bottom image (Bin2) is a representation of no “well” presentation.

Second, a 2 (implicature; pragmatic vs. semantic) X 2 (hemisphere; left vs. right) factorial ANOVA was run on the mean amplitudes to test for differences in interpretation of the semantic and more extreme scalar (pragmatic) stimuli on all sites for the left and right hemispheres.

There was no main effect of implicature $F(1, 11) = .140, p = .715, \text{partial } \eta^2 = .013$. There was a main effect of hemisphere, $F(1, 11) = 11.038, p = .007, \text{partial } \eta^2 = .50$. There was a

decreased N400 in the left hemisphere ($M = 1.048$) compared with the right hemisphere ($M = 2.246$), $F(1, 11) = 11.038$, $p = .007$, partial $\eta^2 = .50$. There was also no interaction effect, $F(1, 11) = .511$, $p = .490$, partial $\eta = .04$. Reference Table 5 for means and standard error for the above analyses.

Table 5 Means and Standard Error for N400 as a Function of Interpretation and Hemisphere

Variable	Mean	Standard Error
Pragmatic	.740	.683
Semantic	.140	1.379
Left Hemisphere	1.048	.733
Right Hemisphere	2.246	.783
Pragmatic*Left Hemisphere	.084	.616
Pragmatic*Right Hemisphere	1.396	.791
Semantic*Left Hemisphere	-.419	1.409
Semantic*Right Hemisphere	.699	1.378

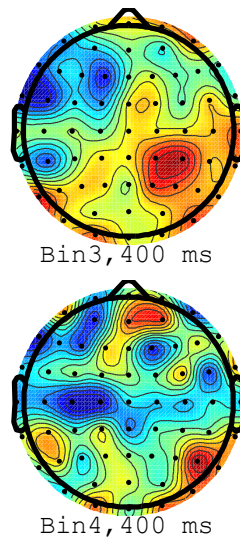


Figure 3. A visual depiction of hemispheric activity. The top image (Bin3) is a representation of semantic scalar implicature presentation. The bottom image is a representation of the more extreme scalar implicature presentation.

Discussion

The purpose of this study was to explore how scalar terms and discourse markers in conversation alter neurophysiological responses. The N400 component was examined as the neurophysiological response based on the results from previous research that concluded the N400 works as a measure examining semantic incongruity (Kutas & Hillyard, 1980). This was expanded upon when researchers found that the context of the sentence also affects the interpretation (Nieuwland et al., 2010), then again when Hunt, Politzer-Ahles, Gibson, Minaib, and Fiorentina (2013) demonstrated that N400 processes are influenced by information gathered from scalar implicatures as well as semantic information. Finally, Holtgraves and Kraus (2018) found that face-threatening contexts lead to a greater difference between pragmatic and semantic interpretations due to the violation of the expectation of politeness.

The present study sought to expand on previous research in five different ways. First, by examining multiple scalar expressions (Goal 1). Second, by using semantic pragmatic responses that does not require a negation (Goal 2). Third, by including the hedge “well,” which acts as a polite discourse marker (Goal 3). Fourth, by eliminating motor responses so that it does not influence neural activity (Goal 4). Finally, by using a dialogue format for a natural presentation of the stimuli (Goal 5).

Goal 1 was attempted through the inclusion of the terms “some,” “sometimes,” and “possible,” as opposed to using only a quantity expression (“some”). However, due to insufficient data, the three scalar expressions used in the present study were collapsed. Thus, Goal 1 could not be achieved.

Goal 2 sought to remove the additional processing time that has been associated with negations (Tian & Breheny, 2016). In order to do this a semantic term (“all”) and a more extreme scalar term (“most”) were compared as opposed to previous research using “some” compared to

“none.” This adaptation was successful in the present research. In regard to neural responses, the present study hypothesized a greater N400 for semantic interpretation (e.g. “all”) compared with the more extreme pragmatic interpretation (e.g. “most). However, no significant N400 effects were found. Therefore, the hypothesis that a greater N400 would be observed for semantic compared with a more extreme interpretation was not supported. Although this was a novel objective, it was rooted in previous research’s comparison of semantic and pragmatic interpretations (Hunt et al., 2013; Holtgraves & Kraus, 2018). These studies found a greater N400 for semantic interpretations compared with pragmatic interpretations. The present study could not extend these findings. Data from the present study trends in the same direction as previous findings, however not significantly and with an insignificant effect size (partial $\eta^2 = .007$).

Goal 3 was to examine the effects of a polite discourse marker on neural activity. More specifically, it was predicted that in “well” preface conditions, a decreased N400 to “some” would be seen compared with no “well” preface because of the increased processing that would have already taken place in the “well” preface condition. However, due to insufficient data as a result of stimulus miscoding in Eprime, this hypothesis was not able to be analyzed. Instead, the results of neural activity in response to “well” presentation or no “well” presentation was examined. While data trends in the anticipated direction, this finding was not significant with a fairly small effect size (partial $\eta^2 = .06$), and this hypothesis was not supported.

Additionally, Goal 2 and Goal 3 were predicted to interact with one another. The hedging of Goal 3 was expected to mitigate the N400 effects seen for the semantic/pragmatic interpretations. “Well” signals face-work thus the face-threatening meaning of the semantic interpretation (e.g. “all”) is less surprising. The hypothesis predicted a reduced N400 for the

subsequent semantic meaning of the scalar term when the “well” preface occurs compared to the absence of the “well” preface. No significant interaction was found between the hedge and interpretation. While the data was trending in the predicted direction – a reduced N400 for the semantic term when “well” was presented compared to the N400 for the semantic term when no “well” was presented – this hypothesis was not supported by a significant interaction and had an insignificant effect size (partial $\eta^2 = .002$).

Goal 4 aimed to eliminate motor responses in order to reduce their influence on neural activity. Previous research has suggested that some neural activity may be a result of participant motor function during tasks. This was demonstrated in Holtgraves and Kraus (2018) in the P300 amplitude – perhaps due to the required motor response. The present study found no significant effect of implicature at the P300 time window with a small effect size (partial $\eta^2 = .01$). It is possible this difference in findings is due to the exclusion of a motor response in the present study.

Goal 5 replicated previous research by implementing a dialogue format for a natural presentation of the stimuli (Holtgraves & Kraus, 2018). This was achieved through the conversational style of the stimuli presentation as well as with fixed-rate rapid visual presentation (RSVP) of the stimuli. The fixed RSVP contributed as well by allowing the duration of the stimuli to be set in a way that simulated natural conversation.

The exploratory analyses examined differences in hemispheric effects in the N400 window. While only marginal in the first analysis (preface and hemisphere), there were significant differences in the N400 between the left and right hemispheres, overall. The N400 was reduced in the left hemisphere in both analyses compared with the right hemisphere. Additionally, the effect sizes were large for both analyses (partial $\eta^2 = .30$; partial $\eta^2 = .50$). In

regard to the interaction of preface and hemisphere, this difference between the left hemisphere and right hemisphere was increased when “well” was present compared to when no “well” was present, with a large effect size (partial $\eta^2 = .31$). These large effect sizes accompanying the significant findings indicate a strong relationship between the right and left hemispheres as well as between these hemispheres and the presentation of “well.” These findings indicate statistical significance as well as practical significance.

Since all stimuli in the present study were face-threatening, this may indicate that emotional processing – which is often associated with processing in the right hemisphere – was consistently taking place at the N400 marker.

The Right-Hemisphere Hypothesis of the lateralization of emotion suggests that the right hemisphere is better than the left hemisphere at interpreting emotions. Previous research on participants with brain damage has demonstrated that lesions in the right hemisphere lead to decreases in emotional perception, whereas damage in the left hemisphere result in minor impairments in emotional perception (Borod, 1992).

Previous research has identified that emotional cues yielded an N400 modulation (Kanske, Klitschko, & Kotz, 2011). This was a finding for P300 in Holtgraves and Kraus (2018) and consistent with research on processing of ambiguous expressions such as metaphors (Klepousniotou, Pike, Steinhauer, & Gracco, 2012).

Additionally, previous research examining laterality and the N400 has found a slightly larger N400 response to words in the right hemisphere compared with the left hemisphere, but the largest response was seen in centroparietal area (Kutas, Van Petten, & Besson, 1988). Kutas and Hillyard’s (1982) research echoes this finding in semantically anomalous words.

More recent studies have demonstrated that more concrete words lead to a greater N400

in the left hemisphere and in contrast, concrete nouns elicited later frontal negativity (500-900 ms) in the right hemisphere.

Limitations

One limitation of the present study is the small sample size. This can be largely attributed to the Covid-19 pandemic's restriction on in-person collection of data. The pre-study power analysis identified 21 participants as the suggested total sample size. The study had a sample size of only half that amount, which does not allow for strong statistical power. Future research should collect a sample of 21 or more in order for more statistical power, more reliable results, as well as a clearer effect size estimation. Further, the sample that was collected for the study was pulled from a relatively homogenous group of Ball State University students, the majority of which were male. Along with collecting a larger sample, future research should consider collecting a more diverse sample.

Although scenarios were replicated from previous research (Holtgraves & Kraus, 2018), future research should pilot the scenarios in order to identify how the “well” is interpreted and if the adaption of the more extreme scalar can function as a replacement for the pragmatic term used in previous studies. Additionally, 12 new scenarios were introduced that were not used previously in research, these scenarios should be piloted before future research utilizes them.

An additional weakness of the present research was the collapse of data. In order to have analyzable data for the present study's hypotheses, the three scalar expression categories were collapsed. This study had intended to gather information about the use of different categories of scalar expressions (i.e. quantity, frequency, probability), however collapsing across these did not allow for any analyses to be made or conclusions to be drawn regarding the success of these scalar expression categories. As a result of this, the hypothesis that in “well” preface conditions,

a decreased N400 to “some” would be seen compared with no “well” preface was not able to be examined. Instead, the neural response to the presentation of “well” or no “well” was examined. Although this may provide some understanding of the neural responses to the hedge, downstream effects are far more valuable and the downstream effects of “well” were only examined in relation to the semantic and more extreme scalar (pragmatic) interpretation. Future research should examine these three scalar expressions, and potentially a fourth, preference, which was examined in Holtgraves and Kraus (2018). These scalar categories should especially be examined in combination with the semantic and *more* pragmatic terminology – this interaction was a novel aspect of the present study that was not able to be investigated. Additionally, future research should examine the downstream influence of “well” on “some.”

While examining the raw data, it was identified that the data collected from the frontal lobes of the brain were the most fit for analyses in the present study. The analyses were conducted only on these frontal sites, thus limiting the conclusions that can be drawn. Examining all sites may provide a more exhaustive understanding of the hypotheses.

Finally, as with previous research, the use of an artificial dialogue can only provide a limited view of the processing that takes place in a natural environment. While the present study attempted to mitigate this limitation by utilizing a conversational, dialogue format, laboratory research cannot wholly mimic the processing that occurs in conversation in a natural environment.

Conclusion

Overall, none of the hypotheses presented in the present study were supported by significant data findings. While all means were trending in the predicted direction, no true conclusions can be drawn from these hypotheses.

Significant findings did, however, come from some exploratory hypotheses. Most notably, the left hemisphere consistently demonstrated a reduced N400 compared with the right hemisphere. There was a reduced N400 in left hemisphere compared with the right hemisphere when “well” was presented and a reduced N400 in the left hemisphere when no “well” was presented compared with no “well” presentation in the right hemisphere. Further, this N400 difference between the left hemisphere and right hemisphere was increased when “well” was present compared to when no “well” was present.

Hemispheric examinations are limited in scalar research and these findings present an interesting question regarding emotional processing of face-threatening stimuli. These findings are consistent with the Right-Hemisphere Hypothesis of the lateralization of emotion, which suggests that the right hemisphere is better than the left hemisphere at interpreting emotions (Borod, 1992). The consistently greater N400 in the right hemisphere for the present study may be a result of the face-threatening – thus inherently emotional – nature of the stimuli. The increased difference between the hemispheres when “well” was presented may be a result of the polite nature of this hedge. The presence of “well” may have been a contextual cue to listeners that upcoming information would be face-threatening, and this elicit a stronger emotional reaction resulting in a greater N400 in the right hemisphere compared with no “well” presentation.

The purposes of the present study remain valuable and should be considered for replication in future research. These goals can help to better understand the processing of scalar terms under specific conditions, including hedging and conversational dialogue. Additionally, the goals proposed in the present study could further scalar research in ways not previously examined. The present study sought to eliminate extra processing time caused by negation through the use of a

more extreme scalar as opposed to a pragmatic term. It also sought to examine multiple scalar terms including “some,” “sometimes,” and “possible,” as opposed to using only a quantity expression (“some”) as is seen in previous research and while these analyses could not be conducted, future research should continue this endeavor. The goals presented above may prove to have interesting implications if examined in future research. The present study has the potential to act as a pilot of new concepts in scalar research.

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Appendix A

Stimulus Materials for Critical Trials

Quantity1 John couldn't make it to Susan's party. To make up for it, he made her some cookies and brought them over for the party. After the party was over, they had the following exchange:

John: Were any/ of my cookies/ left over?/

Susan: There /were some/ left over./

Well, there /were some /left over./

John: Some?/

Susan: **Most**/ of them/ were left over./

All /of them/ were left over./

Nobody liked John's cookies.

Quantity2 Nina was a graduate student and taught her first class. After the class was over, Nina had the following conversation with one of the students named James:/

Nina: Were any students/ using their phone/ during class?/

James: There were /some students /using their phone./

Well, there were/ some students /using their phone./

Nina: Some?/

James: **Most** / of them were/ using their phones. /

All /of them were /using their phones. /

The students were taking notes during class.

Quantity3 Hannah, an incoming freshman, attended a Welcome Week party for first year students in her residence hall. Later, Hannah and the person who organized the party, Dana, had the following conversation:/

Dana: Did any of /the first year students/ leave the party early? /

Hannah: There were /some that /left early./

Well, there were /some that /left early./

Dana: Some?/

Hannah: **Most** /of them/ left early./

All /of them /left early./

The first year students didn't care for the party.

Quantity4 Ryan went with his family to his sister, Nancy's, dance recital. Afterwards, Nancy and Ryan had the following exchange:/

Nancy: Was the /family bored /at the recital? /

Ryan: There were /some that /were bored./

Well, there were/ some that /were bored./

Nancy: Some?/

Ryan: **Most** /of them/ were bored. /

All /of them /were bored. /

Ryan and Nancy's family loved the recital.

Quantity5 Owen got his girlfriend Robyn a charm bracelet for Valentine's Day. After a couple of months, Owen noticed that the bracelet was missing charms. They had the following conversation:/

Owen: Where are/ the charms /for your bracelet? /

Robyn: I lost/ some of /the charms./

Well, I lost /some of/ the charms./

Owen: Some?/

Robyn: I lost/ **most** /of the charms./

I lost /**all** /of the charms./

Robyn took good care of her bracelet.

Quantity6 Hugo, Sun, and Jin were camping when they noticed their food supplies were gone. They also saw that there were no animal markings around the food. Sun and Jin had the following exchange:/

Sun: Did /you eat/ the food?/

Jin: I ate/ some of /the food./

Well, I ate/ some of /the food./

Sun: Some?/

Jin: I didn't eat/ **most** /of the food

I didn't eat/ **all** /of the food.

An animal ate their food.

Quantity7 On her way home from work, Leah calls her husband Cliff. Leah and Cliff have the following conversation:

Leah: Did you wash the dishes/ like you promised you would/ this morning?

Cliff: Some of /the dishes/ are still dirty./

Well, some of/ the dishes/ are still dirty.

Leah: Some?/

Cliff: **Most** /of the dishes /are still dirty. /

All /of the dishes /are still dirty./

Cliff did not wash the dishes.

Quantity8 Fifteen year old Brody was proud that his father trusted him with grilling the hot dogs at the holiday cook-out. His father noticed him kneeling on the patio with the platter of hot dogs. They had the following exchange:

Father: is everything/ alright /over here?

Brody: I dropped some/ of the hot dogs/ on the ground.

Well, I dropped some/ of the hot dogs/ on the ground.

Father: Some?/

Brody: I dropped **most** /of the hot dogs /on the ground.

I dropped **all** /of the hot dogs/ on the ground.

Brody ruined the hot dogs.

Quantity9 Hector was in charge of booking a band for the fraternity's end of the year bash. He tried his best but his plans fell through. Hector and his best friend in the fraternity, Danny, had the following exchange:/

Hector: Do the other brothers/ blame me for/ the band not showing up?

Danny: They think /that some of it /was your fault./

Well, they think /that some of it /was your fault./

Hector: Some?/

Danny: They think/ *most* of it /was your fault./

They think/ *all* of it /was your fault./

The band showed up for the party.

Quantity10 An eager group of girls sang and auditioned for a national talent show. Proud of their performance and out of breath, they awaited the judge's decision. /

Girls: How /was our /performance?/

Judge: You were /off key /some of the time./

Well, you were /off key /some of the time/

Girls: Some?/

Judge: You were /off key /*most* of the time. /

You were/ off key /*all* of the time. /

The judges didn't like the performance.

Quantity11 Anton decided to make chili for his work potluck. Later that day, Anton and one of his co-workers, Fred, had the following exchange: He decided to cook up a pot of chili for his co-workers. Later in the day he asked Fred, one of his co-workers, if he had heard what people thought of his chili. Fred replied: /

Anton: Have you heard /what people thought /of my chili?/

Fred: I heard that/ some people /disliked your chili./

Well, I heard that /some people /disliked your chili./

Anton: Some?/

Fred: I heard that /*most* of the people/ disliked your chili./

I heard that/ *all* of the people /disliked your chili./

Anton made good chili.

Quantity12 Rachel gave a difficult presentation to a group of co-workers. Later in the day, Rachel and Marcie, one of her co-workers who had attended the presentation, had the following exchange:/

Rachel: Have you heard /what people thought /of my presentation?/

Marcie: I heard that /some people /disliked it./

Well, I heard that/ some people/ disliked it./

Rachel: Some?/

Marcie: I heard that /*most* of the people/ disliked it./

I heard that/ *all* of the people /disliked it./

Rachel's presentation was not very good.

Quantity13 Jim sold some of Carla's handcrafted jewelry at the market. After the Market was over, Carla and Jim had the following exchange: /

Carla: Is there/ any jewelry /left?/

Jim: There is /some jewelry/ left./

Well, there is/ some jewelry/ left./

Carla: Some?/

Jim: **Most** of /the jewelry/ was left. /

All of /the jewelry /was left. /

Many people bought Carla's jewelry.

Quantity14 Ron borrowed some of his sister, Susan's, Pokémon cards. Susan heard from their friend Joey that someone had stolen the cards Ron borrowed. Angered, Susan and Ron had the following exchange:/

Susan: How /many cards /were stolen?/

Ron: There were/ some cards/ stolen.

Well, there were/ some cards /stolen./

Susan: Some?/

Ron: **Most** of/ the cards/ were stolen./

All of /the cards/ were stolen./

Ron did not take good care of his sister's cards.

Quantity15 Abbie was chopping some carrots for her mother. However, the chopped carrots spilled on the floor. Later, Abbie and her mother had the following exchange:/

Mother: Did you spill/ the carrots/ on the floor?/

Abbie: I spilled /some of /the carrots./

Well, I spilled /some of/ the carrots./

Mother: Some?/

Abbie: I spilled /**most** of /the carrots./

I spilled /**all** of /the carrots. /

Abbie was careful with the carrots.

Quantity16 Brett recently got a new dog, which got into his neighbor Todd's chicken coop. After Todd saw his Chicken coup, him and Todd had the following conversation: /

Todd: Did your /dog kill any /of my chickens?/

Brett: My dog /killed some /of your chickens./

Well, my dog/ killed some /of your chickens./

Todd: Some?/

Brett: My dog /killed **most** /of your chickens. /

My dog/ killed **all** /of your chickens. /

Brett kept a watchful eye on his dog.

Quantity17 Brian recently got busted for stealing jewelry. Afterwards at Brian's house, the detective and Brian had the following exchange:/

Detective: Is all the jewelry/ in your house /stolen?/

Brian: Some of /the jewelry/ is stolen./

Well, some of /the jewelry /is stolen./

Detective: Some?/

Brian: **Most** of /the jewelry /is stolen./

All of /the jewelry/ is stolen./

Brian has not paid for his jewelry.

Quantity18 Jared owns a deli. A local food blogger, Tim, visited Jared's deli and they had the following exchange: /

Tim: Are any /of the subs/ high in calories? /

Jared: There are/ some subs /that are high in calories./

Well, there are/ some subs /that are high in calories./

Tim: Some? /

Jared: **Most** of /the subs /are high in calories. /

All of /the subs/ are high in calories./

The subs at the deli are healthy.

Quantity19 Clare and Ron's cat gave birth to a litter. Clare tells Ron that she wants to keep a kitten. However, Ron gave away all of the kittens without discussing it with Clare. Later, Clare and Ron had the following exchange: /

Clare: How many/ kittens did you/ give away? /

Ron: I gave /some kittens /away./

Well, I gave /some kittens /away./

Clare: Some? /

Ron: I gave **most** of /the kittens /away./

I gave **all** of /the kittens /away.

Clare is upset with Ron.

Quantity20 Natalie and Brett just got engaged. After their engagement photoshoot, Brett went out to pick up the photos. When he got home, Natalie and Brett has the following conversation: /

Natalie: Where are/ the engagement /photos? /

Brett: I lost /some of /the photos./

Well, I lost /some of /the photos./

Natalie: Some? /

Brett: I lost /**most** of /the photos./

I lost/ **all** of /the photos./

Brett was responsible with the photos.

Quantity21 Pete worked at a sandwich shop and had to pass out fliers to people on the street to promote the shop. At the end of the night, Pete's manager, Jude, checked in on Pete's work and they had the following exchange: /

Jude: How many fliers/ do you have/ left over? /

Pete: I have some of/ the fliers/ left over./

Well, have some of /the fliers/ left over./

Jude: Some? /

Pete: I have **most** of /the fliers /left over./

I have **all** of /the fliers /left over./

Pete did not do his job.

Quantity22 Gavin was in a band and had sent his first CD to his friend, Robbie. Gavin wanted to know what Robbie thought of the CD. They had the following exchange: /

Gavin: Did you dislike/ any songs /on the CD? /

Robbie: I disliked /some of /your songs./

Well, I disliked /some of /your songs./
 Gavin: Some?/
 Robbie: I disliked/ **most** of /your songs. /
 I disliked/ **all** of /your songs. /
 Robbie enjoyed listening to Gavin's band.

Quantity23 Lucas has been tutoring Samuel in math. Samuel had a pop quiz on Monday and, after class, Lucas and Samuel had the following exchange:/

Lucas: How /did you do /on the quiz?/
 Samuel: I missed /some of the questions/ on the quiz./
 Well, I missed /some of the questions/ on the quiz./
 Lucas: Some?/
 Samuel: I missed /**most** of the questions /on the quiz./
 I missed/ **all** of the questions /on the quiz./
 Samuel is very good at math.

Quantity24 Dennis went to a party for his friend Mac's birthday. After the party, Mac and Dennis had the following exchange:/

Mac: Did you like the friends/ I had over /for the party? /
 Dennis: I disliked /some of the people/ at your party./
 Well, I disliked /some of the people/ at your party./
 Mac: Some?/
 Dennis: I disliked/ **most** of the people /at your party./
 I disliked/ **all** of the people/ at your party./
 Dennis didn't enjoy Mac's birthday party.

Frequency1 Beth and John are classmates and often study together. One day, they had the following exchange:/

Beth: Do you think/ I'm a bad /student?/
 John: You are /sometimes /a bad student./
 Well, you are /sometimes /a bad student./
 Beth: Sometimes?/
 John: You are/ **often** /a bad student. /
 You are/ **always** /a bad student. /
 Beth has good grades.

Frequency2 Rose and Leo are friends. One afternoon, Rose and Leo had the following exchange:/

Rose: Do you/ think /I'm moody?/
 Leo: You are /sometimes/ moody./
 Well, you are /sometimes/ moody./
 Rose: Sometimes?/
 Leo: You are /**often** /moody./
 You are /**always** /moody./
 Rose is a happy person.

Frequency3 John and Jake decided to move into an apartment together off campus. After living together for about a month, they had the following exchange: /

Jake: Do you/ think that/ I'm lazy? /

John: You are/ sometimes /lazy. /

Well, you are /sometimes /lazy. /

Jake: Sometimes? /

John: You are/ *often* /lazy. /

You are/ *always* /lazy. /

Jake does not do much around the apartment.

Frequency4 Don and Sarah were enrolled in Driver's Education. After one of their lessons, Ron and Sarah had the following exchange: /

Don: Do you/ think I'm a/ bad driver? /

Sarah: You are/ sometimes /a bad driver. /

Well, you are /sometimes/ a bad driver. /

Don: Sometimes? /

Sarah: You are /*often* /a bad driver. /

You are/ *always* /a bad driver. /

Don is going to pass Driver's Education.

Frequency5 Jack recently cut his own hair and accidentally cut it too short in one spot. The next day, Jack and his friend Kate had the following exchange: /

Jake: How /noticeable is my/ haircut mistake? /

Kate: Your mistake/ is sometimes /noticeable. /

Well, your mistake /is sometimes /noticeable. /

Jake: Sometimes? /

Kate: It is/ *often* /noticeable. /

It is/ *always* /noticeable. /

Jake is not a professional barber.

Frequency6 A father overheard his son telling a friend how annoying his dad is. The father then spoke to his daughter, Layla, to find out more. They had the following exchange: /

Father: Do/ I annoy /you? /

Layla: You /sometimes /annoy me. /

Well, you /sometimes/ annoy me. /

Father: Sometimes? /

Layla: You/ *often* /annoy me. /

You/ *always* /annoy me. /

Layla always loves being around her father.

Frequency7 At the restaurant where Felicity works, employees are not allowed to take food home with them. One day, her boss catches her boxing up a salad after clocking out. Felicity and her boss have the following exchange: /

Boss: How often/ do you take /food home? /

Felicity: I sometimes /take food/ home. /

Well, I sometimes /take food /home. /

Boss: Sometimes?/

Felicity: I *often* /take food /home. /

I *always* /take food /home. /

Felicity is not following her company's guidelines.

Frequency8 John and Elizabeth are dating. One day after kissing, John and Elizabeth have the following exchange:/

John: Am I/ a bad /kisser? /

Elizabeth: You are /sometimes /a bad kisser./

Well, you are /sometimes /a bad kisser./

John: Sometimes?/

Elizabeth: You are/ *often* /a bad kisser. /

You are/ *always* /a bad kisser. /

John is an experienced kisser.

Frequency9 Crissola is a massage therapist. One day, Greg, a regular customer with back pain, came into her office for a massage. Afterwards, Crissola and Greg have the following exchange:/

Crissola: Are my/ massages/ ineffective? /

Greg: Your massages/ are sometimes/ ineffective./

Well, your massages/ are sometimes /ineffective./

Crissola: Sometimes?/

Greg: They are/ *often* /ineffective. /

They are/ *always* /ineffective./

Greg's massages are not helping his back pain.

Frequency10 London is a student in Alaina's gymnastics class. One day, the class practiced doing somersaults. Afterward, London and Alaina have the following exchange:/

London: How/ are my /somersaults?/

Alaina: Your somersaults /are sometimes/ bad./

Well, your somersaults /are sometimes /bad.

London: Sometimes?/

Alaina: They are/ *often* /bad./

They are/ *always* /bad./

Alaina is impressed with London's somersaults.

Frequency11 Mary and Jim carpool together everyday. After arriving one day, Jim and Mary have the following exchange:/

Jim: Do I /drive /recklessly?/

Mary: You sometimes/ drive / recklessly./

Well, you sometimes /drive / recklessly./

Jim: Sometimes?/

Mary: You *often* /drive /recklessly. /

You *always* /drive /recklessly./

Mary thinks Jim is an unsafe driver.

Frequency12 Gabe and Leah have been married for a few years. After they got back vacation with Leah's family, Leah and Gabe had the following conversation: /

Leah: How do you like/ hanging out /with my parents?/

Gabe: Your parents/ sometimes /irritate me. /

Well, your parents /sometimes /irritate me. /

Gabe: Sometimes?/

Leah: Your parents/ *often* /irritate me./

Your parents/ *always* /irritate me./

Leah wants to spend more time with Gabe's parents.

Frequency13 Dr. Johnson suspects that one of his students, Keith, is cheating on tests. After class one day, Dr. Johnson and Keith have the following exchange:/

Dr. Johnson: Have you/ been cheating/ on my tests?/

Keith: I sometimes/ cheat on /your tests./

Well, I sometimes /cheat on /your tests./

Dr. Johnson: Sometimes?/

Keith: I *often* /cheat on/your tests./

I *always* /cheat on /your tests. /

Keith is a dishonest student.

Frequency14 Elizabeth picked her dog, Sammie, up from his dog-sitter. Elizabeth and the dog-sitter, Candice, had the following conversation:/

Elizabeth: Do you think/ Sammie is/ a bad dog?/

Candice: Sammie is /sometimes/ a bad dog./

Well, Sammie is /sometimes/ a bad dog./

Elizabeth: Sometimes?/

Candice: He is/ *often* /a bad dog./

He is/ *always* /a bad dog./

Candice loves watching Sammie.

Frequency14 Brooke sent a letter to her brother. After a month, Brooke learned that her brother never received her letter. Brooke called a postal office representative to find out more information. They had the following exchange:/

Brook: Do your /post office workers /ever lose letters?/

Representative: Our workers /sometimes/ lose letters./

Well, our workers /sometimes /lose letters./

Brooke: Sometimes?/

Representative: Our workers/ *often* /lose letters. /

Our workers/ *always* /lose letters. /

Brooke is unhappy with the post office.

Frequency15 Leanna learned that her husband, Edward, had been cheating on her while he was on business trips. Later that night, Leanna and Edward have the following exchange: /

Leanna: How often have you /cheated on me /on your trips?/

Edward: I sometimes /cheat on you /while on business trips./

Well, I sometimes /cheat on you /while on business trips./

Leanna: Sometimes?/

Edward: I *often* /cheat on you /while on business trips./

I *always* /cheat on you /while on business trips./

Edward is committed to Leanna.

Frequency16 While managing a gas station, Jim suspects his employee Patrick has been stealing money from the register at night. That night, Jim confronts Patrick and they have the following exchange:/

Jim: Have you been /stealing money /from the register? /

Patrick: I sometimes /steal money /from the cash register./

Well, I sometimes /steal money /from the cash register./

Jim: Sometimes?/

Jim: I *often* /steal money /from the cash register./

I *always* /steal money /from the cash register./

Patrick is a dishonest employee.

Frequency17 Lydia was texting at work even though there is a no phone policy. Her boss catches her on her phone and they have the following conversation:/

Boss: Have you/ been texting /at work?/

Lydia: I sometimes/ text /at work./

Well, I sometimes /text /at work./

Boss: Sometimes?/

Lydia: I *often* /text /at work./

I *always* /text /at work./

Lydia's boss is impressed with her work performance.

Frequency18 One night, Bob came home from the local pub bruised and bloody. His new girlfriend, Liz, was upset. They have the following exchange:/

Liz: Do you get/ into bar fights/ a lot?/

Bob: I sometimes /get into /bar fights./

Well, I sometimes /get into /bar fights./

Liz: Sometimes?/

Bob: I *often* /get into/ bar fights./

I *always* /get into /bar fights./

Liz does not approve of Bob's behavior.

Frequency19 The day after a late night out, Roger stayed home from work with a hangover. His girlfriend, Becky, confronted him. They have the following exchange:/

Becky: How often /does your drinking/ get out of control?/

Roger: My drinking /sometimes gets /out of control./

Well, my drinking /sometimes gets /out of control./

Becky: Sometimes?/

Roger: My drinking/ *often* /gets out of control./

My drinking/ *always* /gets out of control./

Roger is a responsible drinker.

Frequency20 Terry brought his long-time girlfriend over to his brother Jim's house. When they were alone together, Terry and Jim had the following exchange: /

Terry: Do you /ever forget /my girlfriend's name? /

Jim: I sometimes /forget /your girlfriend's name. /

Well, I sometimes /forget /your girlfriend's name. /

Terry: Sometimes? /

Jim: I *often* /forget /your girlfriend's name. /

I *always* /forget /your girlfriend's name. /

Jim is forgetful with names.

Frequency21 Cody and Matthew share a bathroom in their apartment. Cody has noticed a few times that his toothbrush is wet in the morning. He confronts Matthew and they have the following exchange: /

Cody: Do you /ever use /my toothbrush? /

Matthew: I sometimes/ use your/ toothbrush. /

Well, I sometimes /use your/ toothbrush. /

Cody: Sometimes? /

Matthew: I *often* /use your /toothbrush. /

I *always* /use your /toothbrush. /

Matthew prefers using his own toothbrush.

Frequency22 Garrett had heard that his friend Robert made an inappropriate joke at a party this weekend and a few people were offended. Garrett approached Robert and they had the following exchange: /

Garrett: Do you /ever tell /inappropriate jokes? /

Robert: I sometimes /tell /inappropriate jokes. /

Well, I sometimes /tell /inappropriate jokes. /

Garrett: Sometimes? /

Robert: I *often* /tell /inappropriate jokes. /

I *always* /tell /inappropriate jokes. /

Garrett does not like Robert's sense of humor.

Frequency23 Charlie and his girlfriend, Meg, went to the gym together. When an attractive woman walked by Meg asked Charlie about it and they have the following exchange: /

Meg: Do you ever check out other women at the gym? /

Charlie: I sometimes check out/ other women /at the gym. /

Well, I sometimes check out /other women /at the gym. /

Meg: Sometimes? /

Charlie: I *often* /check out women/ at the gym. /

I *always* /check out women/ at the gym. /

Charlie is committed to Meg.

Frequency24 Tabitha and her father were sitting together when Tabitha's phone rang. Tabitha ignored the call. Tabitha and her father have the following exchange: /

Father: Do you ever/ intentionally ignore/ my calls? /

Abby: I sometimes/ ignore /your calls. /

Well, I sometimes/ ignore /your calls./
 Father: Sometimes?/
 Tabitha: I **often** /ignore /your calls. /
 I **always** /ignore /your calls. /
 Tabitha is always available to be reached by phone.

Probability1 Mrs. Taylor was cleaning the room of her two sons, Jon and Joe. While doing so, she discovered a pack of cigarettes. While Joe was at soccer practice, she had the following exchange with Jon: /

Mom: Are/ those your /cigarettes?/
 Jon: It's possible /that the cigarettes/ are mine./
 Well, it's possible /that the cigarettes/ are mine./
 Mom: Possible?/
 Jon: It's **likely** that /the cigarettes /are mine. /
 It's **certain** that /the cigarettes /are mine./
 Jon was trying to hide his cigarettes.

Probability2 Dr. Jones recently discovered that two of his students, James and Ethan, scored very similarly on a challenging exam, and he suspected that cheating had taken place. But he was unsure who was guilty. So, Dr. Jones met with Ethan and they had the following exchange: /

Dr. Jones: Are you the one/ that had cheated /on the exam?/
 Ethan: It's possible/ I cheated /on the exam./
 Well, it's possible /I cheated /on the exam./
 Dr. Jones: Possible?/
 Ethan: It's **likely** /that I cheated /on the exam./
 It's **certain** /that I cheated /on the exam./
 Ethan is a dishonest student.

Probability3 Allie's ice cream was missing from the freezer, and she suspected that one of her roommates had taken it without asking. However, she wasn't sure which one. That evening, she confronts one of her roommates, Katie, and they have the following exchange: /

Allie: Did you eat /my ice cream/ in the freezer?/
 Katie: It's possible/ that I ate /your ice cream./
 Well, it's possible /that I ate /your ice cream./
 Allie: Possible?/
 Katie: It's **likely** /that I ate /your ice cream./
 It's **certain** /that I ate /your ice cream./
 Katie respects her roommate's property.

Probability4 Trevin, Caleb, and Aaron moved into a new apartment off campus. When they were finally all unpacked, Trevin discovered that his flat screen TV would no longer work. He suspected that one of his roommates dropped it on the way in. He confronts Caleb and they had the following exchange: /

Trevin: Did you/ drop/ my TV?/
 Caleb: It's possible /that I dropped /your TV./
 Well, it's possible /that I dropped /your TV./

Trevin: Possible?/

Caleb: It's *likely* that/ I dropped /your TV./

It's *certain* that /I dropped/ your TV./

Trevin needs a new TV.

Probability5 Nathaniel lost his cat. He suspects that one of his roommates left a door open and the cat escaped. Nathaniel confronts his roommate, Jordan, and they had the following exchange:/

Nathaniel: Did you/ leave /the door open?/

Jordan: It's possible/ I left /the door open./

Well, it's possible/ I left /the door open./

Nathaniel: Possible?/

Jordan: It's *likely* /that I left/ the door open. /

It's *certain* /that I left /the door open. /

Jordan kept good watch over Nathaniel's cat.

Probability6 Jarrell just returned home from his first semester of college and noticed that his expensive cologne bottle was empty. He suspected his brother, Fred, of using it while he was away. Jarrell and Fred had the following exchange:/

Jarrell: Did you/ ever use/ my cologne?/

Fred: It's possible/ I used /your cologne./

Well, it's possible/ I used /your cologne./

Jarrell: Possible?/

Fred: It's *likely* /that I used /your cologne. /

It's *certain* /that I used /your cologne./

Jarrell needs to buy more cologne.

Probability7 Ronald thinks that his neighbor Chris has been throwing trash on his lawn. When Chris gets home from work, Ronald confronts him and they had the following exchange: /

Ronald: Have you been/ throwing trash/ onto my lawn?/

Chris: It's possible/ I threw trash /on your lawn.

Well, it's possible/ I threw trash on your lawn./

Ronald: Possible? /

Chris: It's *likely* /that I threw trash /on your lawn. /

It's *certain* /that I threw trash/ on your lawn. /

Ronald's lawn is always clean.

Probability8 Thomas believes that his roommate Reginald has been taking his food from the refrigerator. Thomas and Reginald had the following exchange:/

Thomas: Have you been taking/ my food /from the refrigerator?/

Reginald: It's possible/ I've been taking/ your food./

Well, it's possible/ I've been taking /your food./

Thomas: Possible?/

Reginald: It's *likely* that /I've been taking /your food./

It's *certain* that/ I've been taking /your food./

Reginald does not buy his own groceries.

Probability9 Kim suspects that Kyle's dog has been going to the bathroom on her front lawn. She sees Kyle and they have the following exchange: /

Kim: Has your dog been /going to the bathroom /on my lawn? /

Kyle: It's possible he's gone /to the bathroom /on your lawn. /

Well, it's possible he's gone/ to the bathroom/ on your lawn. /

Kim: Possible? /

Kyle: It's *likely* he's gone/ to the bathroom/ on your lawn. /

It's *certain* he's gone/ to the bathroom /on your lawn. /

Kyle is considerate of Kim's lawn.

Probability10 Two hours from home, while driving down the highway, Bill and Trudy have the following exchange: /

Bill: Did you remember to close/ the garage door/ like you said you would? /

Trudy: I possibly/ closed the/ garage door. /

Well, I possibly/ closed the /garage door. /

Bill: Possibly? /

Trudy: It's *likely* /I closed the /garage door. /

It's *certain* /I closed the /garage door. /

Bill is forgetful.

Probability11 Tyler and Nathan were taking care of their pet hedgehog when they noticed it was not looking well. Nathan noticed the medicine bottle was still full and confronted Tyler. They had the following exchange: /

Nathan: Did you forget to /give the hedgehog /his medicine today? /

Tyler: It's possible I forgot /to give him /his medicine. /

Well, it's possible I forgot /to give him /his medicine. /

Nathan: Possible? /

Tyler: It's *likely* I forgot/ to give him /his medicine. /

It's *certain* I forgot /to give him /his medicine. /

Tyler and Nathan's hedgehog is feeling better.

Probability12 After hearing a rumor about her boyfriend, Ian, at last night's party. Karina confronted Ian and they had the following exchange: /

Karina: Did you kiss /another girl /at the party? /

Ian: It's possible/ I kissed /another girl. /

Well, it's possible/ I kissed /another girl. /

Karina: Possible? /

Ian: It's *likely* /I kissed/ another girl.

It's *certain* /I kissed /another girl. /

Ian cheated on Karina at the party.

Probability13 Somer came home and found her bathroom a mess. When her roommate, Kennedy, gets home, her and Somer have the following exchange: /

Somer: Did you/ use my /bathroom? /

Kennedy: It's possible/ I used your bathroom /while you were gone. /

Well, it's possible /I used your bathroom /while you were gone./
 Somer: Possible?/
 Kennedy: It's *likely* /I used your bathroom /while you were gone. /
 It's *certain* /I used your bathroom /while you were gone. /
 Kennedy cleaned the apartment while Somer was gone.

Probability14 Noel is taking a trip to visit his parents. The day of his trip, his mother calls him and they have the following conversation: /

Mother: Have you/ started /packing yet?/
 Noel: It's possible /I haven't started /packing yet./
 Well, it's possible/ I haven't started /packing yet./
 Mother: Possible?/
 Kennedy: It's *likely* /I haven't started/ packing yet./
 It's *certain* /I haven't started /packing yet./
 Noel procrastinated packing.

Probability15 Wynne's thesis is due in an hour. Her advisor emails her and they have the following exchange:/

Advisor: Will you have /your thesis /done in time?/
 Wynne: It's possible/ I won't have/ it done/
 Well, it's possible /I won't have /it done./
 Advisor: Possible?/
 Wynne: It's *likely* /that I won't /have it done./
 It's *certain* /that I won't/ have it done./
 Wynne's advisor is pleased.

Probability16 Alex is a professional make-up artist. After doing her new client's make-up, they have the following conversation:/

Client: Did you clean/ the make-up brushes/ before doing my make-up? /
 Alex: It's possible /I didn't /clean them./
 Well, it's possible/ I didn't /clean them./
 Client: Possible?/
 Alex: It's *likely* /that I didn't /clean them./
 It's *certain* /that I didn't /clean them./
 Alex is not very hygienic.

Probability17 Gale is a politician. In an interview, Gale is asked a series of difficult questions. Gale and the interviewer have the following exchange:/

Interviewer: Are you/ involved /in any scandals?/
 Gale: It's possible /I'm involved/ in a scandal./
 Well, it's possible/ I'm involved/ in a scandal./
 Interviewer: Possible?/
 Gale: It's *likely* /that I'm involved /in a scandal./
 It's *certain* /that I'm involved /in a scandal./
 Gale's background is clean.

Probability18 Stephanie accidentally spills water on her work computer. She tells her boss that her computer is not working. They have the following conversation: /

Boss: What happened /to your /computer?

Stephanie: It's possible /that I /broke it./

Well, it's possible/ that I/ broke it./

Boss: Possible? /

Stephanie: It's *likely* /that I /broke it./

It's *certain* /that I /broke it./

Stephanie was not careful around her computer.

Probability19 Sam's mom is trying to complete the family's taxes. Karen needs Sam's W-2 forms before she can submit. Sam and his mom, Karen, have the following conversation: /

Karen: Do you have/ your W-2 forms/ for me? /

Sam: It's possible/ I lost /my forms./

Well, it's possible/ I lost /my forms./

Karen: Possible? /

Sam: It's *likely* /I lost/ my forms./

It's *certain* /I lost/ my forms./

Karen and Sam's taxes are complete and submitted.

Probability20 Natalie is at the dentist. After her dentist, Dr. Smith, finishes the check-up, they have the following conversation: /

Dr. Smith: Do you brush /your teeth/ twice a day? /

Natalie: It's possible/ I don't brush /twice a day./

Well, it's possible/ I don't brush /twice a day./

Dr. Smith: Possible? /

Natalie: It's *likely* /I don't brush /twice a day./

It's *certain* /I don't brush /twice a day./

Dr. Smith is not impressed with Natalie's dental hygiene.

Probability21 Joshua's aunt, Molly, is in the hospital. They have the following conversation: /

Joshua: Am I/ in your/ will? /

Molly: It's possible /you are not/ in my will./

Well, it's possible/ you are not /in my will./

Joshua: Possible? /

Molly: It's *likely* that/ you are not/ in my will./

It's *certain* that/ you are not/ in my will./

Joshua will be receiving a lot of money from his aunt in her will.

Probability22 Adrianna is waiting on her next client, Jim, to come in for his appointment. He is late so Adrianna calls him. They have the following conversation: /

Adrianna: Will you/ be here /soon? /

Jim: It's possible /that I'm not/ coming./

Well, it's possible /that I'm not/ coming./

Adrianna: Possible? /

Jim: It's *likely* /that I'm not/ coming./

It's *certtain* /that I'm not /coming./
 Jim did not follow through with his appointment.

Probability²³ Robert went out for dinner. When the waiter comes to take Robert's order, they have the following exchange:/

Robert: How fresh/ is the fish/ today?/

Waiter: It's possible/ the fish/ is old./

Well, it's possible/ the fish/ is old./

Robert: Possible?/

Waiter: It's *likely* /that the fish/ is old./

It's *certtain* /that the fish/ is old./

Robert will be ordering the fish today.

Probability²⁴ Shawn and Linda are getting married in a few days. Shawn calls the pastor, Tom, who will be officiating their wedding. Shawn and Pastor Tom have the following conversation:/

Shawn: Are you ready/ to officiate /our wedding./

Pastor Tom: It's possible /that I am/ not ready./

Well, it's possible/ that I am/ not ready./

Shawn: Possible?/

Pastor Tom: It's *likely* /that I am/ not ready./

It's *certtain* /I am/ not ready./

Pastor Tom is not prepared for the wedding.

Filler trials

FILL1 Grace made her roommate, Lucy, a pumpkin cheesecake for her birthday. Later on, Grace and Lucy had the following conversation:/

Grace: What did /you think of/ the cheesecake?/

Lucy: I thought/ it was /good./

Well, I thought/it was /good./

Grace: Good?/

Lucy: I thought/ it was/ *great*./

I thought/ it was/ *perfect*./

Lucy didn't like the cheesecake.

FILL2 Lena, an aspiring interior designer, decorated the living room of her neighbors, the Smiths, while they were on a weekend vacation. When they returned, Lena and the Smiths had the following conversation:/

Lena: What do/ you think of /the new design?/

The Smiths: The new/ design/ looks good./

Well, the new /design /looks good./

Lena: Good?/

The Smiths: The new /design /looks *great*./

The new /design /looks *perfect*./

Lena is a good interior designer.

FILL3 Thomas took Bethany out on a date. At the end of the night, Bethany and Thomas had the following conversation:/

Bethany: How do/ you think/ the date went?/

Thomas: The date/ went/ good./

Well, the date /went/ good./

Bethany: Good?/

Thomas: The date/ went/ *great*./

The date /went/ *perfect*./

Thomas and Bethany will not be seeing each other again.

FILL4 Jackie had to read poetry to her English class in order to complete an assignment. Later, Jackie and Jane, a fellow classmate, had the following conversation:/

Jackie: What did you/ think of my/ poetry reading? /

Jane: Your poetry /reading/ was good./

Well, your poetry /reading/ was good./

Jackie: Good?/

Jane: Your poetry /reading/ was *great*./

Your poetry /reading/ was *perfect*./

Jackie is a talented poet.

FILL5 Lilly attended a potluck dinner. Their friends, the Robinsons, made many dishes for the dinner. At the end of the dinner, the Robinsons and Lilly had the following conversation:/

The Robinsons: What did /you think /of our food?/

Lilly: I thought /your food/ was good./

Well, I thought /your food/ was good./

The Robinsons: Good?/

Lilly: I thought /your food/was *great*./

I thought /your food/was *perfect*./

The Robinsons are not good cooks.

FILL6 Mary recommended her favorite new restaurant to Zach. After Zach dined there, Mary and Zach had the following conversation:/

Mary: What did/ you think /of the restaurant?/

Zach: I thought/ it was/ good./

Well, I thought /it was /good./

Mary: Good?/

Zach: I thought/ it was / *great*./

I thought /it was/ *perfect*./

Mary's recommendation was smart.

FILL7 Giovanni made his prized chili dogs for his girlfriend, Kenzie. After she ate, Giovanni and Kenzie had the following exchange:/

Giovanni: Did you /like my/ chili dogs?/

Kenzie: I thought/ your chili dogs /were good./

Well, I thought/ chili dogs /were good./

Giovanni: Good?/

Kenzie: Your chili dogs/ were/ *great.* /
 Your chili dogs/ were/ *perfect.* /
 Kenzie does not like chili dogs.

FILL8 Tyler asked Julie to go with him to see his favorite movie that was playing in theaters. After they saw it, Tyler and Julie had the following conversation: /

Tyler: What did /you think /of the movie?/

Julie: I thought/ the movie /was good./

Well, I thought/ the movie /was good./

Tyler: Good?/

Julie: I thought/ the movie /was *great.* /

I thought/ the movie/was *perfect.* /

Tyler and Julie both like Tyler's favorite movie.

FILL9 Anna gave her friend, Echo, a scarf she had made. Later, Anna and Echo had the following exchange:/

Anna: How did I do/ making /your scarf?/

Echo: I think /that you/ did good./

Well, I think /that you/ did good./

Anna: Good?/

Echo I think /that you/ did *great.* /

I think /that you/ did *perfect.* /

Echo will not wear the scarf Anna made her.

FILL10 Laura watched a performance of the play Fiddler on the Roof. Later, the cast of the play stood in the theater's lobby to mingle with audience members. Laura was on her way through the lobby when she met Greg, one of the actors. They had to following exchange:/

Greg: What did /you think /of the performance?/

Laura: I thought/ the performance/ was good./

Well, I thought/ the performance/ was good./

Greg: Good?/

Laura: I thought/ the performance/ was *great.* /

I thought/ the performance/ was *perfect.* /

Greg and the rest of the cast put on a good show.

FILL11 Alan was looking to buy a used car. His friend, Damon, convinced him to buy his beloved, old car, promising it would not let him down. After Alan bought the car and had it for a few months, him and Damon had the following conversation:/

Damon: How/ do you like/ the car?/

Alan: I think/ the car /is good./

Well, I think/ the car /is good./

Damon: Good?/

Alan: I think/ the car /is *great.* /

I think/ the car /is *perfect.* /

Alan does not drive his car.

FILL12 Sam was working hard on his first novel. When he finished he asked his older brother, Guy, to read it and let him know what he thought. After Guy read the novel, him and am had the following conversation:/

Sam: What's your /opinion on/ my novel?/

Guy: I think/ your novel/ is good./

Well, I think/ your novel/ is good./

Sam: Good?/

Guy: I think/ your novel/ is *great*. /

I think/ your novel/ is *perfect*. /

Sam is a talented writer.

FILL13 Brady is watching his friend Stan's apartment while he's away on vacation. When Stan returns, him and Brady have the following conversation:/

Stan: What condition /did you leave /my place in?/

Brady: I left it /in good /condition./

Well, I left it/ in good /condition./

Stan: Good?/

Brady: I left it /in *perfect* /condition./

I left it /in *great* /condition./

Stan is an irresponsible friend.

FILL14 Nanette went to the county fair to watch her friend, Ben, perform. Afterward Ben and Nanette met up. They had the following conversation:/

Ben: How was/ my performance/ at the fair?/

Nanette: I thought/ your performance/ it was good./

Well, I thought/ your performance/ it was good./

Ben: Good?/

Nanette: I thought/ your performance/ it was *great*./

I thought/ your performance/ it was *perfect*./

Ben's audience was impressed with his performance.

FILL15 Nicole finished the first draft of her dissertation and sent it into her professor, Dr. Cohen, to look over it. After Dr. Cohen read through it, they had the following conversation:/

Nicole: How do /you think /my dissertation looks?/

Dr. Cohen: I think /your dissertation/ looks good./

Well, I think /your dissertation/ looks good./

Nicole: Good?/

Dr. Cohen: I think /your dissertation/ looks *great*./

I think /your dissertation/ looks *perfect*./

Nicole's thesis will be rejected.

FILL16 Caroline is a massage therapist. She tries her best technique with her new client who has back pain. After the session they have the following conversation:/

Caroline: How does/ your back /feel now?/

Client: My back/ feels /good./

Well, my back/ feels /good./

Caroline: Good?/

Client: My back/ feels/ *great*./

My back/ feels/ *perfect*./

Caroline is a talented massage therapist.

FILL17 Marcus made Tony some breakfast. After eating, Marcus and Tony had the following conversation:/

Marcus: What did /you think /of the food?/

Tony: I thought/ the food /was good./

Well, I thought/ the food /was good./

Marcus: Good?/

Tony: I thought/ the food / was *great*. /

I thought/ the food / was *perfect*. /

Marcus is a bad cook.

FILL18 Nora is in her first painting class. She finishes her project and her and the instructor have the following exchange:/

Nora: What do/ you think /of my painting?/

Instructor: I think /your painting/ is good./

Well, I think /your painting/ is good./

Nora: Good?/

Instructor: I think /your painting/ is *great*./

I think /your painting/ is *perfect*./

Nora's instructor is impressed with her work.

FILL19 Jim recommended that Will watch his favorite action movie. After Will saw it, him and Jim had the following conversation:/

Jim: What did/ you think /of the movie?/

Will: I thought/ the movie/ was good./

Well, I thought/ the movie/ was good./

Jim: Good?/

Will: I thought /the movie /was *great*./

I thought /the movie /was *perfect*./

Jim's movie recommendation was not good.

FILL20 Tanya heard about a new house for sale down the street. After Tanya toured the house, the homeowners, The Lawsons, stopped her and they had the following exchange:/

The Lawsons: What did /you think/ of the property?/

Tanya: I thought /the property /was good./

Well, I thought /the property /was good./

The Lawsons: Good?/

Tanya: I thought/ the property /was *great*. /

I thought/ the property /was *perfect*. /

Tanya is considering moving into the Lawson's house.

FILL21 Barry decided to try for a job as a secretary. After turning in his application, he was invited in for an interview. During the interview, Barry and the head of HR, Beth, had the following conversation:/

Beth: How are/ your typing/ skills?/

Barry: My typing/ skills/ are good./

Well, my typing/ skills/ are good./

Beth: Good?/

Barry: My typing/ skills /are *great*./

My typing/ skills /are *perfect*./

Barry would not be a good fit for this position./

FILL22 Diane asked Jenn for advice on improving her garden. Diane shared her personal compost recipe with Jenn. The next fall, Diane and Jenn had the following conversation:/

Jenn: How did/ my compost /recipe work?/

Diane: The compost/ recipe was/ good./

Well, the compost/ recipe was/ good./

Jenn: Good?/

Diane: The compost/ recipe was/ *great*./

The compost/ recipe was/ *perfect*./

Diane's garden improved with the compost recipe.

FILL23 Sally baked an apple pie for the county fair competition. It was her first attempt at pie baking. Before taking it to the fair, Sally has her friend, Cami, sample the pie. After tasting it, Sally and Cami had the following conversation:/

Sally: What do/ you think/ of the pie?/

Cami: I think/ the pie/ is good./

Well, I think/ the pie/ is good./

Sally: Good?/

Cami: I think/ the pie/ is *great*./

I think/ the pie/ is *perfect*./

Sally has no chance of winning the county fair pie competition.

FILL24 Sammy harvested some lettuce from his garden and gave some to his girlfriend, Sarah. After she tried some, they had the following conversation: /

Sammy: What do/ you think/ of my lettuce?/

Sarah: I think/ your lettuce/ is good./

Well, I think/ your lettuce/ is good./

Sammy: Good?/

Sarah: I think/ your lettuce/ is *great*./

I think/ your lettuce/ is *perfect*./

Sammy and Sarah will use the lettuce in their meals.