Pragmatic reasoning in context: Anticipating negation for adjectives

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Abstract. Negation processing seems to be facilitated in pragmatically felicitous contexts compared to infelicitous ones. Using a novel methodological approach, we investigated whether adults can identify felicitous contexts for negative statements by anticipating affirmative or negative sentence continuations (e.g., *The socks were not dry.* / *The socks were wet.*) for naturalistic contexts. Results from our forced choice study indicate that participants selected negative statements more frequently after contexts intended to elicit a negative statement than after contexts intended to elicit an affirmative statement. This effect was observed for absolute gradable adjectives but not reliably for relative gradable adjectives. Our study shows that naturalistic contexts contain cues for the polarity of subsequent sentences and that these cues are used by speakers to anticipate affirmative vs. negative sentences.

Keywords: negation, pragmatic licensing, absolute and relative gradable adjectives.

1. Introduction

Semantically, negation is analyzed as a unique propositional operator that reverses the truth value of a proposition (¬ p). Assume a context in which the proposition *the socks were dry* was explicitly or implicitly stated by one of the discourse partners or that can be constituted as a plausible assumption in the given context. Negative sentences such as *The socks were not dry* typically deny this proposition (e.g., Wason, 1965). In other words, a negative sentence expresses that the state of affairs that is being negated (i.e., the socks being dry) does not hold. Pragmatically, it communicates that there might have been reasons for the comprehender to expect it to hold (i.e., the socks were expected to be dry). If the context does not provide the reason for this presumed expectation, the comprehender must pragmatically infer it (e.g., the socks were put into the dryer). In some contexts this inference process is easier than in others. Negation processing should be eased if the context either already activates the assumption that is later negated or allows to retroactively come up with the assumption by means of pragmatic reasoning processes.

Years of experimental research have shown that negation leads to higher processing times and more mistakes compared to affirmation (e.g., Clark and Chase, 1972; Carpenter and Just, 1975; Mayo et al., 2004). In addition, empirical studies confirm that negative sentences are easier to process and more likely to be produced in contexts in which the state of affairs that is being negated is explicitly or implicitly assumed by one of the discourse partners or at least seems a likely assumption to be held based on general world knowledge (e.g., Capuano et al., 2021; Nordmeyer and Frank, 2023; see Tian and Breheny, 2019 for an overview). Thus, negation processing appears to be facilitated only in specific contexts that, in some way, permit its use. We will refer to these contexts as felicitous. Felicitous contexts have been characterized as

providing contributions both informative and relevant (Nordmeyer and Frank, 2023).

In our study, we asked whether adults are able to identify felicitous contexts for negative statements by anticipating from naturalistic contexts whether an affirmative or negative sentence will follow. Our aim was to find out whether natural contexts provide cues for the polarity of the subsequent sentences. To our knowledge, there is no empirical research investigating the sensitivity of readers to such contextual cues to negation so far. To investigate our research question, we conducted two forced choice studies in which participants indicated their preferred context continuation by choosing between an affirmative or a negative sentence. Target sentences included either absolute (Experiment 1) or relative gradable adjectives (Experiment 2). Results show that negative statements with absolute gradable adjectives were chosen more often following contexts originally produced for negative target sentences (but unknown to participants of the forced choice study). Relative gradable adjectives show a similar trend, which does not reach significance.

This paper is structured as follows. In the next section, we review some of the existing studies investigating negation processing in context. Our review identifies several possibilities establishing pragmatic licensing conditions for negative sentences, but also shows that the use of naturalistic contexts has been neglected so far. Afterwards, we discuss the few empirical studies researching absolute and relative gradable adjectives under negation. We identify an empirical gap; whereas the interpretation of gradable adjectives under negation has received some recent attention, production preferences, to our knowledge, have not been investigated so far. The following section (Section 2) presents the design and results of our experimental study and is then followed by a general discussion in the last section of this paper (Section 3).

1.1. Negation in context

Experimental studies have identified different factors instantiating pragmatically felicitous contexts to negation. Glenberg et al. (1999) employed a self-paced reading task and had participants read affirmative or negative sentences following supportive or non-supportive contexts (Experiment 2; see (1) for an example). Supportive contexts mentioned a dimension (e.g., *color* in the example given) which was also included in the target sentence (e.g., *black*). In non-supportive contexts, the dimension introduced in the context sentence differed from the one referred to in the target sentence (e.g., *material* and *black*).

(1) a. Marcy needed a new couch for her family room.
    b. She . . .
        (i) **supportive**: . . . wasn't sure if a darkly colored couch would look the best or a lighter color.
        (ii) **non-supportive**: . . . wasn't sure what kind of material she wanted the couch to be made of.
    c. She finally picked one out and had it delivered to her home.
    d. The couch. . .
        (i) **affirmative**: . . . was black. It looked very nice in her family room.
        (ii) **negative**: . . . wasn't black. That probably would have been too dark.

Reading times in the non-supportive condition were longer for negative compared to affirmative sentences. Following supportive contexts, however, average reading times did not differ

between affirmative and negative sentences. The dimensional overlap between context and target therefore seems to create pragmatically felicitous licensing conditions eliminating processing costs for negated sentences.

Lüdtke and Kaup (2006) showed that explicit mentioning as well as inferable states of properties facilitate negation processing (see also Albu et al., 2021). In their first experiment (see (2) for a shortened example), they manipulated whether the (affirmative or negative) state of an object mentioned in the target sentence was given in a previous sentence as a single affirmative possibility (*one-poss*), as one of two affirmative possibilities (*two-poss*), or was not given as particular possibility (*no-poss*) in the previous context.

(2) a. On her way to the pool, Danielle wondered...
   (i) **one-poss**: ... whether the water would be warm.
   (ii) **two-poss**: ... whether the water would be warm or cold.
   (iii) **no-poss**: ... what the water would be like.
   b. She sat down at the edge of the pool next to Karen, and carefully lowered her foot into the water.
   c. The water was...
   (i) **affirmation**: ... warm.
   (ii) **negation**: ... (not) warm.

Self-paced reading data showed faster reading times for negative target sentences following both explicit conditions (one-poss, two-poss) compared to the no-possibility condition. The two explicit conditions did not differ significantly. Thus, mentioning the negated proposition as a distinguished possibility or one of two possibilities seems to create pragmatically felicitous contexts.

The second experiment reported in Lüdtke and Kaup (2006) manipulated the strength of contexts allowing for an inference of a state which is then either denied by negation or expressed affirmatively (see (3) for an example). Results of the self-paced reading study support the assumption that contexts creating a plausible assumption of a later negated proposition facilitates negation processing; whereas processing times for negative sentences were higher compared to affirmative ones following weak implication contexts, reading times for negative sentences did not differ from their affirmative counterpart in the strong implication condition.

(3) a. **Strong implication** (*dirty* expected): Betty's young son was not shy and participated in any nonsense that the kids could come up with. Just before dinner, Betty summoned her son. She was going to change his clothes because she wanted him to look neat during the banquet. When her son came running up to her, Betty was astonished to see that...
   (i) ... his T-shirt was not dirty.
   (ii) ... his T-shirt was clean.
   b. **Weak implication** (*clean* expected): Only Betty's young son was sitting inside in the corner reading books by himself. Just before dinner, Betty summoned her son. She was going to put a bib on him, because she wanted him to look neat even after the banquet. When her son came running up to her, Betty was astonished to see that ...
   (i) ... his T-shirt was not clean.

(ii) . . . his T-shirt was dirty.

Nieuwland and Kuperberg (2008) investigated contextualized negation processing in an event-related potential (ERP) study. In pragmatically licensed negation contexts, the critical word[1] was informative with regard to the preceding part of the sentence. In unlicensed contexts, it was underinformative or trivial (see (4) for an example).

(4) a. **Pragmatically licensed negation**:
With proper equipment, scuba-diving . . .
(i) . . . is very safe and often good fun.
(ii) . . . isn't very dangerous and often good fun.
b. **Pragmatically unlicensed negation**:
Bulletproof vests . . .
(i) . . . are very safe and used worldwide for security.
(ii) . . . aren't very dangerous and used worldwide for security.

ERP results in Nieuwland and Kuperberg (2008) show larger N400s, indicators of processing difficulty, in the unlicensed (true-)negated sentences compared to the (true-)affirmative sentences for critical words, but not in the licensed condition. Licensing contexts (compared to non-licensing contexts) thus seem to facilitate negation processing.

Orenes et al. (2016) conducted a visual world eye-tracking study to investigate negation processing in context. In each trial, participants first heard two introductory sentences establishing the situation. The following sentence differed depending on the experimental condition and was either consistent, inconsistent or neutral with regard to the subsequent affirmative or negative target sentence (see (5) for a shortened example).

(5) Veronica needed a new car for work. She wondered whether her dad could help her financially.
a. **consistent**: She supposed that her dad had enough savings.
b. **inconsistent**: She supposed that her dad had little savings.
c. **neutral**: Her dad lived on the other side of town.
d. **target**: Her dad was (not) rich/poor.

During auditory presentation of the targets, participants were shown two images on the screen, with each one depicting one of the two states expressed by the affirmative and negative target adjective, respectively. Participants' fixations were systematically influenced by the pragmatic manipulation for negative sentences, showing a fixation increase for the neutral condition over the inconsistent one. Consistent contexts, in turn, showed the highest increase in target fixations.

In sum, empirical research employing various methods has shown that different pragmatic licensing conditions exist that facilitate the processing of negated sentences. Note, however, that mixed results were obtained across studies as to whether licensed negative sentences still cause processing difficulty compared to affirmative sentences, an aspect that was not discussed in this review. As evident from this section, previous work has systematically manipulated (non-)licensing contexts leading to negative and affirmative sentences. In our study, we take a

[1]We only consider true affirmative and negative conditions. Note that target sentences in Nieuwland and Kuperberg (2008) also included a manipulation of truth value, leading to false affirmative and false negated conditions.

different methodological approach by using naturalistic contexts written by different speakers. Our aim is to provide a more ecologically valid look into the pattern of affirmative vs. negative sentences in natural discourse.

1.2. Gradable adjectives under negation

The negation of adjectives has received considerable attention in the theoretical domain, leading to different accounts for interpretative patterns of (antonymous) adjectives under negation (e.g., Cruse, 1986; Horn, 1989; Rotstein and Winter, 2004; Krifka, 2007). Here, we focus on the few empirical studies systematically investigating absolute and relative gradable adjectives, since these are the two categories we have incorporated into our study. Note, however, that we are not aiming to examine the interpretative patterns of the two classes. Although our forced choice study also has an interpretative component, we take our dependent variable, the choice of an affirmative vs. negative sentence, to resemble production preferences. Our result do not allow for an evaluation of the interpretation of the two alternatives presented.

Absolute and relative gradable adjectives show differences in their entailment patterns with regard to their antonyms under negation (e.g., Kennedy, 2007; Alexandropoulou and Gotzner, 2024b). Whereas absolute gradable negated adjectives entail their antonym ((6)), this does not hold for relative gradable negated adjectives ((7)).

(6) a. The socks were not dry. $\Rightarrow$ The socks were wet.
b. The socks were not wet. $\Rightarrow$ The socks were dry.

(7) a. The socks were not long. $\not\Rightarrow$ The socks were short.
b. The socks were not short. $\not\Rightarrow$ The socks were long.

In line with this difference, Alexandropoulou and Gotzner (2024b) found different interpretative patterns for the two types of adjectives in their rating studies. Whereas (weak) antonymic absolute gradable adjectives showed a symmetric response pattern under negation, (weak) antonymic relative gradable adjectives were interpreted asymmetrically. In this study, participants were presented with multiple (affirmative/negative) statements in each trial, but the same pattern has been obtained in Alexandropoulou and Gotzner (2024a) with no overt contextual competition present and participants rating only a single statement.

Similar to Alexandropoulou and Gotzner (2024b), we investigated the two types of adjectives in two separate experiments. Participants were always presented with either one of the two adjective classes, but saw both affirmative as well as negative versions. Our experimental design is described in the following section.

2. Methods

The details of both experiments are presented together in this section since they are identical apart from the fact that Experiment 1 includes absolute gradable adjectives and Experiment 2 includes relative gradable adjectives.

2.1. Participants

Ninety-nine monolingual speakers of German took part in Experiment 1, 98 in Experiment 2. Participants were recruited online via Prolific (age range: 19 to 72 years, with a mean age of 36.1 years in Experiment 1 and 33.4 years in Experiment 2). Participants were naive with respect to the purpose of the experiment and were paid for their participation.

2.2. Materials

Naturalistic contexts for the forced choice studies were created in a preceding production experiment. In this experiment, we asked 52 monolingual speakers of German (students of Goethe University Frankfurt) to complete stories backwards by writing suitable short contexts, up to three sentences, to respective affirmative or negative target sentences. Informed consent was obtained from all participants in written form. Each written questionnaire included four target sentences, two affirmative and two negative sentences, and either included sentences involving absolute or relative gradable adjectives (see (8) and (9) for original items used in our studies including their English translations). One hundred sixty of the contexts written in the production study were entered as materials for the forced choice experiments. Contexts were selected by two student assistants naive to our research question without seeing the original target sentences. We asked them to choose naturalistic contexts they could imagine to take place in everyday life. In case of non-matching choices for a specific item, a third rater was consulted to choose the preferred context.

(8) Absolute gradable adjectives

a.	Die Socken waren (nicht) nass/trocken.	(*The socks were (not) wet/dry.*)
b.	Das Glas war (nicht) voll/leer.	*(The glass was (not) full/empty.)*
c.	Der Saft war (nicht) süß/bitter.	*(The juice was (not) sweet/bitter.)*
d.	Der Mann war (nicht) krank/gesund.	*(The man was (not) sick/healthy.)*

(9) Relative gradable adjectives

a.	Die Socken waren (nicht) kurz/lang.	*(The socks were (not) short/long.)*
b.	Das Glas war (nicht) groß/klein.	*(The glass was (not) large/small.)*
c.	Der Saft war (nicht) kalt/warm.	*(The juice was (not) cold/warm.)*
d.	Das Auto war nicht günstig/teuer.	*(The car was (not) cheap/expensive.)*

For the forced choice task, the contexts produced by the students (80 for absolute, 80 for relative gradable adjectives) were divided onto five lists for Experiment 1 as well as Experiment 2. Each list therefore included 16 contexts, one for each of the items used in the production experiment. Following each context, two possible continuations were shown, one affirmative and one negative version of a sentence. Note that although each context was originally created for either an affirmative or a negative sentence in the production experiment, this *Original Polarity* was unknown to participants in the forced choice task and they were presented with both an affirmative and a negative continuation option. Original examples including their translation, four for each type of adjective, with two per *Original Polarity* category, are shown from (10) to (17). Examples (10) to (13) include absolute gradable adjectives and examples (14) to (17) include relative gradable adjectives. Examples (10), (11), (14), and (15) were written for affirmative target sentences (their *Original Polarity* in the forced choice study was therefore coded as affirmative), whereas examples (12), (13), (16), and (17) were written for negative

target sentence (leading to a negative *Original Polarity* in the forced choice study). We have included several examples to illustrate the heterogeneity of the items used, a point that we will come back to in our general discussion.

(10)

Jan und seine Mutter waren auf dem Spielplatz. Es hatte Tage davor geregnet und somit waren ein paar Pfützen vorhanden. Jan hatte keine Gummistiefel an.	Jan and his mother were at the playground. It had rained days before and so there were a few puddles. Jan wasn't wearing rain boots.

☐ The socks were wet.
☐ The socks were not dry.

(11)

An einem Regentag lief Maria durch den Wald. Als sie abends wieder im Hotel ankam, zog sie die Schuhe aus. Na toll, dachte sie.	Maria was walking through the forest on a rainy day. When she arrived back at the hotel in the evening, she took off her shoes. Great, she thought.

☐ The socks were not dry.
☐ The socks were wet.

(12)

Sarah war mit Mickie im Urlaub. Auf dem Campingplatz nutzten die beiden gemeinsam die Waschmaschine. Danach hängten sie ihre Wäsche auf der Wäscheleine auf. Am nächsten Morgen kontrollierten sie das Ergebnis.	Sarah was on vacation with Mickie. They used the washing machine together at the campsite. Afterwards, they hung their laundry on the washing line. The next morning, they checked the results.

☐ The socks were wet.
☐ The socks were not dry.

(13)

Martha hatte am Donnerstagsmorgen vor, ihre Wäsche zu waschen. Seit kurzem macht allerdings ihr Trockner, den sie im Anschluss normalerweise anstellt, Probleme. Auch an diesem Morgen stellte sie fest, dass er nicht funktionierte:	Martha had planned to do her laundry on Thursday morning. Recently, however, her dryer, which she usually turns on afterwards, has been causing problems. This morning, she also noticed that it wasn't working:

☐ The socks were not dry.
☐ The socks were wet.

(14)

Mia hat bald ihre erste Reitstunde. Sie kauft mit ihrer Mama die Sachen der Liste fürs Reiten ein. Darauf stehen lange Socken für hohe Reitstiefel. Am ersten Trainingstag holt Mia alle ihre Sachen raus.	Mia has her first riding lesson soon. She buys the things on the list for riding with her mom. It includes long socks for high riding boots. On the first day of training, Mia gets all her things out.

☐ The socks were short.
☐ The socks were not long.

(15)

Max brauchte dringend neue Kleidung und entschied sich daher, diese kaufen zu gehen. Er kaufte einiges, darunter Hosen und Socken, die er allerdings nicht anprobierte. Zuhause folgte das böse Erwachen.	Max urgently needed new clothes and therefore decided to go shopping. He bought a few things, including pants and socks, but didn't try them on. At home, he had a rude awakening.

☐ The socks were not long.
☐ The socks were short.

(16)

Corinna hatte einen Wanderurlaub geplant. Zu ihrer Ausrüstung gehörten unter anderem Wanderschuhe und lange Socken. Im Urlaub angekommen musste sie eine Feststellung machen.	Corinna had planned a hiking vacation. Her equipment included hiking boots and long socks. When she arrived on vacation, she had to make a realization.

☐ The socks were short.
☐ The socks were not long.

(17)

Ein Kind fragte mich, was der Unterschied zwischen Socken und Strümpfen sei. Ich meinte, Socken seien Strümpfe, aber kurze. Da zog das Kind die Hosenbeine hoch und zeigte mir seine Strümpfe und siehe da:	A child asked me what the difference was between socks and stockings. I said that socks were stockings, but short ones. The child pulled up his trouser legs and showed me his socks and lo and behold:

☐ The socks were not long.
☐ The socks were short.

2.3. Procedure

Both experiments were run as web experiments on PCIbex (Zehr and Schwarz, 2018). Each item was shown on a separate browser page with the two possible continuations presented below each context. Participants in the forced choice studies read 16 experimental (+ four control) contexts. They were asked to indicate their preferred continuation for each context by clicking a check box next to the respective sentence version. The introductory page included an example involving two sentence versions differing in word order and that did not include any negative markers.

2.4. Results

All statistical analyses reported in this paper were conducted using R (R Core Team, 2024). Figure 1 shows the proportions of affirmative and negative choices based on the original polarity of the context production study for absolute gradable adjectives (Experiment 1) and relative gradable adjectives (Experiment 2). Recall that original polarity was unknown to participants in the forced choice study. For absolute gradable adjectives, negative continuations were chosen in 12% of cases with the original polarity being affirmative. This number increased to 54% in the negative original polarity condition. For relative gradable adjectives, 26% of negative choices in the affirmative original polarity condition increased to 35% when the original polarity was

negative.

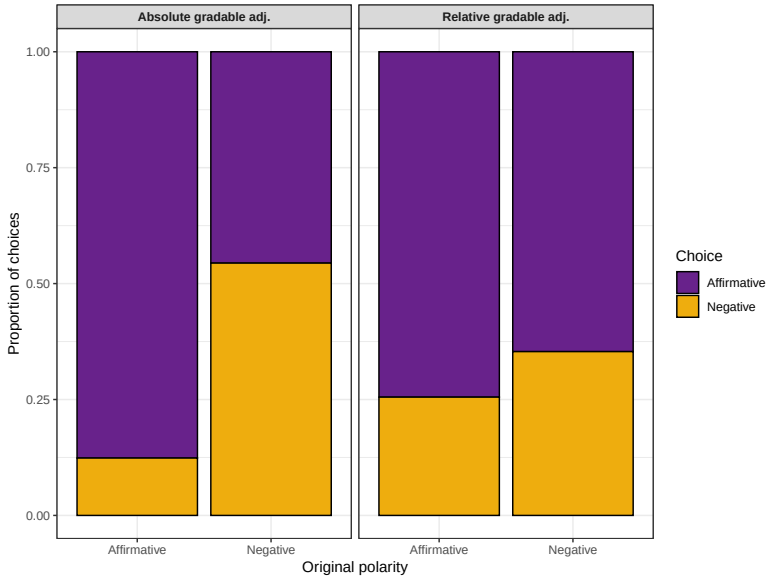

Figure 1. Proportions of affirmative and negative choices based on the original polarity of the context production study (unknown to participants) for absolute gradable (left) and relative gradable adjectives (right).

Table 1. Model output of the joint analysis of Experiment 1 and Experiment 2.

	Estimate	SE	z value	p value
Formula: *Choice* $\sim$ *Adjective Type * Original Polarity + (1 + original Polarity | participant) + (1 | item)*				
(Intercept)	-1.0143	0.1343	-7.552	$< .001$
Adjective Type	0.1410	0.2660	0.530	0.596
Original Polarity	1.5240	0.2594	5.876	$< .001$
Adjective Type X Original Polarity	-2.0527	0.5141	-3.992	$< .001$

Inferential statistics of the binary response variable (affirmative vs. negative continuation) were jointly analyzed for Experiment 1 and 2 by fitting a generalized linear mixed effect model using the package *lme4* (Bates et al., 2015). *Original polarity* (affirmative vs. negative) and *Type of Adjective* (Experiment 1: absolute gradable vs. Experiment 2: relative gradable) as main factors as well as their interaction term were entered as fixed effects into the model, using sum coding. Simple comparisons were computed using the *emmeans* package (Lenth, 2024). The main effect of Original Polarity was significant. This main effect has to be qualified by a significant interaction between the two factors Original Polarity and Adjective Type. Simple comparisons show a significant influence of Original Polarity on the choice of negated sentences for absolute gradable adjectives (z = -6.857, $p < 0.001$) that does not reach significance for relative gradable adjectives (z = -1.389 p = 0.1648).

3. Discussion and conclusion

Using a novel methodology, we investigated whether adults are able to identify felicitous contexts for negative statements by anticipating from naturalistic contexts whether an affirmative or negative sentence will follow. Corroborating previous research, our findings show that previous context encodes information on the polarity (affirmative vs. negative) of an upcoming target sentence. This information can be used by speakers to anticipate a negation in naturalistic contexts, thereby showing pragmatic reasoning. In addition, participants' choice of negation seems to interact with the interpretative properties of gradable adjectives, thereby adding further empirical support for the absolute-relative distinction in line with previous studies (e.g., Weicker and Schulz, 2020; Alexandropoulou and Gotzner, 2024b). Whereas Original Polarity had a significant influence on the choice of negative statements for absolute gradable adjectives, relative gradable showed a similar numerical trend, which, however, did not reach significance.

Theoretical research suggests different entailment patterns for the two types of adjectives under negation (see Subsection 1.2). Negated absolute gradable adjectives are assumed to entail their antonym, whereas this does not hold for relative gradable adjectives. This difference might also explain our results. Whereas for absolute gradable adjectives, the original polarity effect can unfold strongly due to the fact that the negated version entails the affirmative antonym, this does not hold for relative adjectives. We hypothesize that the Original Polarity effect does not emerge for relative gradable adjectives due to participants' pragmatic aim to be (more) informative. Since the negated version does not entail the affirmative antonym, affirmative choices are made more frequently in both original polarity conditions. Although a numerical difference can be seen, this preference hinders a strong original polarity effect.

Another point that has to be kept in mind is the fact that all contexts used in this study were naturalistic in the sense that they were produced by speakers naive to the purpose of the study. Different from systematic manipulations, this surely introduces both a great variability as well as differing strengths in the way contexts established explicit or implicit assumptions which might later be denied. The fact that we nevertheless found polarity effects strengthens our conclusion that contexts encode information on the polarity (affirmative vs. negative) of subsequent targets. To gain more insight into the factors establishing this information in the contexts, further analyses are necessary. In a next step, we will analyze the contexts on a local as well as global level. On a local level, we expect to find more lexical markers indicating that a violation of expectation will occur (e.g., contrast markers such as *aber* (but), surprise markers such as *plötzlich* (suddenly)) in negative compared to affirmative contexts. We have included several context examples (see (10) to (17)), because it is already evident from these that the (non-)occurrence of strong linguistic markers differs remarkably in our materials. On a global level, the identification and comparison of polarity differences might be harder to detect. Nordmeyer and Frank (2023) characterize pragmatically felicitous contexts to negation as being informative and relevant. Informativeness can be defined as adding more information about the referent. Relevance could be specified by the context targeting a (more specific) question under discussion (QUD, e.g., Roberts, 2012). Given our example of socks being not dry, comprehenders know (based on world knowledge) that socks can be dehumidified by putting them in a dryer. A context sentence such as *The socks were put into the dryer* gives rise to a QUD along the lines of *What happened to the socks in the dryer*? or *Did the socks become dehumidified while being in the dryer*? The target sentence *The socks were not dry* then provides a reasonable

answer to the QUD. We might therefore characterize reasonable answers to the QUD targeting the information given in the negative target sentence as pragmatically felicitous. Therefore, we suggest that a QUD annotation of our contexts might help us to gain insight into global markers. In addition, pragmatic phenomena such as irony or sarcasm might also be relevant markers at the global level (see example (11)). Analyses on a local and global level will help us to identify specific markers which can then be systematically manipulated and tested in subsequent empirical research. This offers a first step for future work of investigating pragmatic forces behind the licensing of negative statements in (naturalistic) contexts.

To conclude, we have shown, using a novel methodological approach, that naturalistic contexts contain cues for the polarity of subsequent sentences. These cues can be used by speakers to anticipate negative sentences and therefore create pragmatically felicitous contexts to negation. The fact that this effect was visible for absolute gradable adjectives, but not for relative gradable adjectives, is explained by taking into account the different entailment patterns of the two types of adjectives. We suggest the pattern found for relative gradable adjectives is influenced by speakers' aim to be more informative. Our results are in line with the view that negation is a case in point for interpretation processes at the semantics-pragmatics interface.

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