

Take Your Time, Don't Rush: The Impact of Framing on Comprehension and Action

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Background

Language can influence how people are presented in real life situations, such as in court. Negative information is more powerful than positive information, as people recognize and process it more (Gale-Bentz et al., 2019). However, providing more contextual information with negation helps with processing it (Ruytenbeek et al., 2017). It has been observed that negative concord is typically easier to understand. This is the default when the true double negative is not understood, meaning it is a more natural way of speaking (Coles-White, 2004). Even though it is typically easier to understand, negatively framed sentences/phrases (e.g., *don't hesitate*) require more cognitive resources than their positive counterparts. Negated sentences are semantically more complex because they make the reader think about the negated situation. There are two steps in the representation of a negated sentence. The first representation of a denied situation is activated as if the negation was removed, and the second step is the negation being integrated into the sentence and a representation of that situation is created (Beltrán et al., 2019). An example of this is as follows: look at the sentence *It isn't sunny outside*. The reader will first create a representation of a sunny day outside, which is the removal of the negation. The second step is the reader creating a representation with the negation, which would be a representation of a cloudy day (*is not sunny*) (Beltrán et al., 2019).

Introduction

The e-mail study was performed for us to observe how participants would respond to real-life situations, based on how the e-mails were framed and whether or not they were urgent, in a 2 x 2 factorial design.
The word search study was performed for us to observe how participants would perform in a task where instructions and terms were framed differently in a 2 x 2 factorial design.

Method: Email Study

In the email study, 4 google forms were created that included 12 curated email sets, ranging from topics such as exams, job training, and class reminders. All email sets were counterbalanced so that each person got a randomized order of set conditions. The study was 2 (language frame type: positive, negative) × 2 (urgency level: non-urgent, urgent) factorial design. The possible email conditions included positively framed (PF) and urgent (U), PF and non-urgent (NU), negatively framed (NF) and U, and NF and NU. All NF sets and responses included at least one double negative phrase. Participants were then given four questions, three of which were based on a rating scale. Ease of comprehension was assessed (1 being most difficult, 5 being easiest). Tone of message was assessed (1 being most negative, 5 being most positive). Level of urgency was assessed (1 being not concerning, 5 being most concerning). Participants were asked how they would respond to the email and were given two choices, a positively framed or negatively framed response.

Method: Word Search Study

The current study is a word search task, where four word searches were created, each having fifteen terms to find. The study was designed as a 2 (instruction frame type: positive, negative) × 2 (search term frame type: positive, negative) factorial design. Of the conditions, participants are given a word search with PF instructions and PF search terms, PF instructions and NF search terms, NF instructions and PF search terms, or NF instructions and NF search terms. All word searches included instructions on the front, and the word search task on the back of the paper. The study was conducted in person, in a classroom on campus. Participants were advised to write their start time and end time of their word search task based on the projected time clock in the front of the room. Participants were advised that they did not have to find all search terms to complete the task. A time cap of 30 minutes was given for the task. The word searches were generated through Education.com worksheet generator, where no search terms overlapped nor were presented backwards. At the beginning of each study session, the research team read a brief script detailing to participants what the task at hand would include.

Results: Email Study

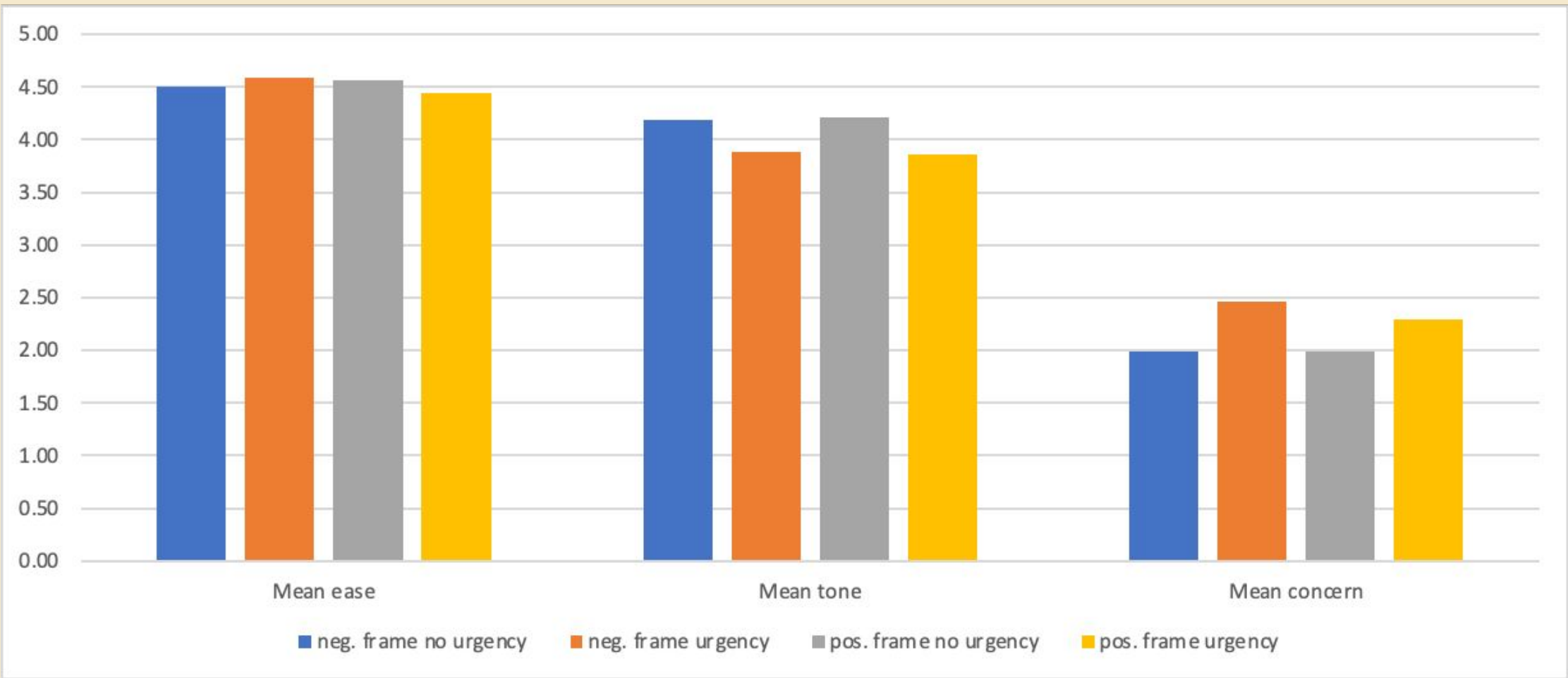


Figure 1. Results of all conditions after participants completed the email response task. As seen on the left, the mean of the ease of comprehension was relatively similar for all four conditions. As seen in the middle, participants who read negatively framed urgent emails rated the tone as lower, compared to the positively framed conditions. As seen on the right, participants who read negatively framed urgent emails were significantly more concerned compared to those in other conditions.

- There was a significant main effect of urgency on tone [$t(633)=4.12$, $p < .001$]. Urgent messages were perceived as having a more negative tone.
- There was a significant main effect of urgency on concern [$t(634)=3.83$, $p < .001$]. Urgent messages were perceived as being more concerning to participants.
- There were no significant differences between positive and negative framing on ease, and the difference in ease of comprehension for urgent and non-urgent messages was also insignificant.

Results: Word Search Study

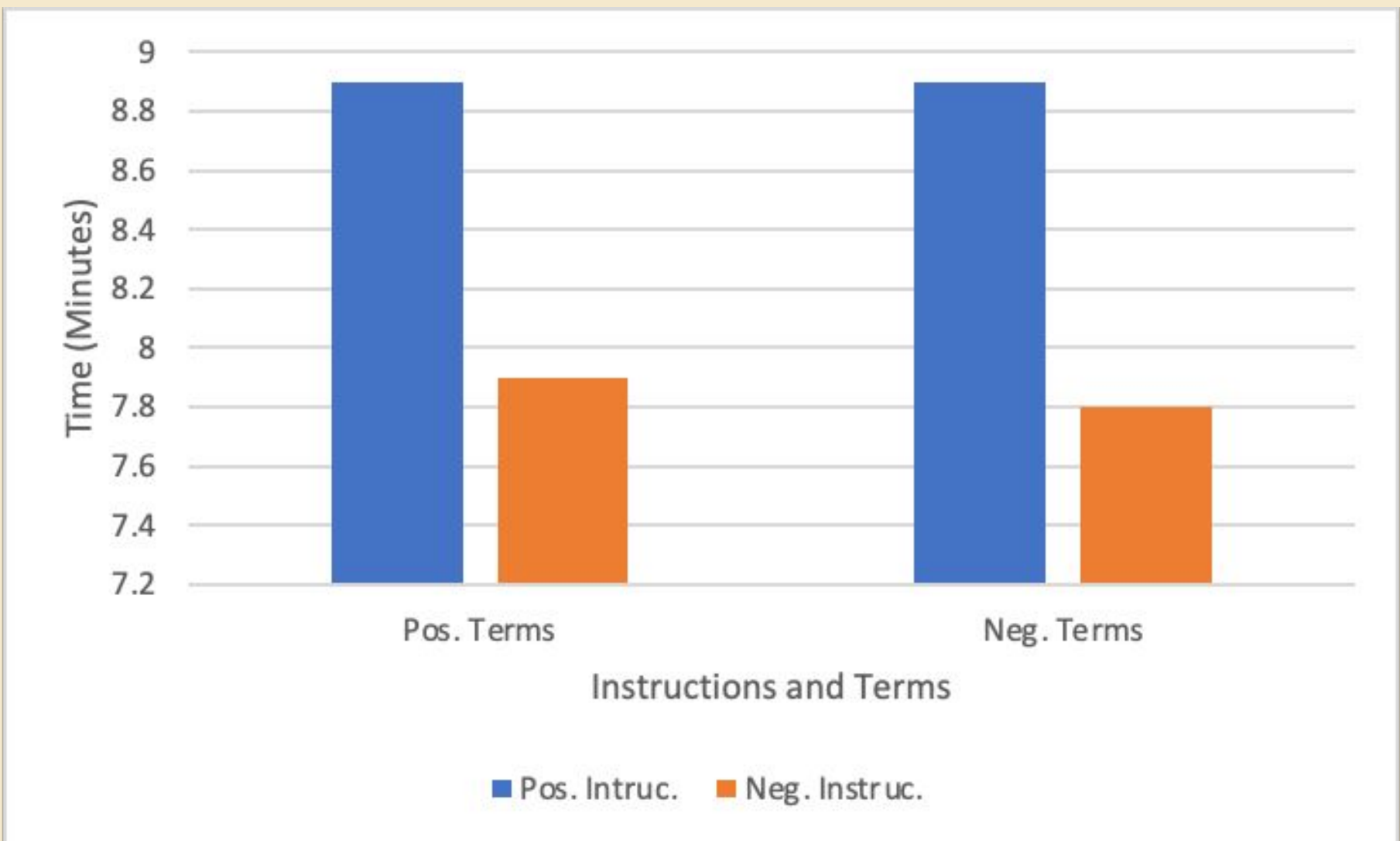


Figure 2. Results after participants completed a basic word search task. Positive instructions, regardless of the positive or negative terms, resulted in participants taking longer to complete the search. Negative instructions, regardless of the positive or negative terms, resulted in participants completing the search quickly.

- There is a main effect on the instruction type, and this main effect is beginning to approach significance.
- There is a non-significant trend such that participants were faster after reading the negative instructions.
 - The trend was to be 1.06 minutes faster to complete the word search after reading negative instructions. Although a trend existed, it was not significant [$t(42)= 1.17$, $p = .247$].

Discussion

Observations

- It is suggested that negative framing is a more natural way of speaking, and this is observed in the faster times for the negatively framed word searches.
- It is believed that the faster times were observed due to negative framing being comfortable to the participants, and positive framing having a more conscious effort to be spoken or read.

Limitations

- Since the emails were generally positive in framing (aside from the key terms and phrases that were switched from a positive to a negative framing), it is believed that the manipulations of framings were less effective, explaining the insignificant impact on ease of comprehension.

Future Directions

- For future studies, it is suggested a larger sample size be tested, and more data collection is needed.
- Manipulate the emails in a more negative frame, since those manipulations may have an impact on ease of comprehension.
- Future studies could do a time-based trial where participants are either told *don't rush* or *take your time*, and see how that impacts the timing of their task performance.

Materials

Student-

I am writing to let you know that you missed the exam held in class last Friday. (Keep calm / don't worry), this exam may be made up anytime throughout this week when we are both free. This is (fairly trivial / not a big deal), but please (try to schedule a makeup appointment / don't put this off for too long), as I would prefer to be able to finish up the grading by the end of the week. Please view my availability through the link on canvas, and let me know what times this week work for you. (You must make up this exam by the end of this week, or you will receive a zero.) (Feel free / Don't hesitate) to reach out to me with any further questions!

Best,
Professor A

Figure 3. Example of a mock email set from initial email study. The phrases in parentheses indicate the differing phrases used in the various email sets, with the first phrase being positively framed and the later negatively framed. The text highlighted in red represents an example of a phrase that could be added or omitted from emails to introduce or remove urgency to a set.

Thank you for participating in our word study. We are asking you to complete a word search. Circle each term in the puzzle and mark the corresponding term in the list. The terms will not overlap or be spelled out backwards. (Take your time / Don't rush) in finding all of the words. It is (okay / no problem) if this takes you longer than other participants. Record your time once you finish the word search. Please (feel free / don't hesitate) to let us know if you have any questions before we begin. (It's okay / don't worry) if you miss one or more terms, you got this.

Figure 4. Example of the instructions from the word search study. The phrases in parentheses indicate the differing phrases used in the instructions for the word search, with the first phrase being positively framed and the later negatively framed.

References

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