How Do Periods Affect the Perception of Tone in Text Messages?

Alisha Arora, Danica Foster, Elia H. Burke, Ravneet Sandhu, & Laiba Abid

KPU KWANTLEN POLYTECHNIC UNIVERSITY

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ABSTRACT

The increased use of computer mediated communication (CMC) in the present time prompted our research to verify if the use of a period at the end of a sentence affects the perception of the tone of the text message. We hypothesized that text messages ending with a period would be perceived as more passive-aggressive compared to text messages without a period by college-aged students. We used two groups of participants where the control group was presented with text messages ending in a period and the experimental group was presented with text messages ending without a period. Using an independent samples t-test, we found a significant difference between the two groups, in the direction of our hypothesis.

INTRODUCTION

- With the ever-changing rules of language brought about by the growth of texting, our ability to assess the emotional state of a message is reduced (Hancock et al., 2007). This is exacerbated as a result of lack of physical cues like facial expressions, gestures, tone of voice etc. (Houghton et al., 2017).

- Other linguistic features like punctuation, emojis, etc., take over to account for the reduction in emotional cues caused by the dry nature of text messages. For example, period use has different connotations when used with positive versus negative sentences. On the one hand, a period after a positive reply, may make it seem sarcastic and insincere. On the other hand, a period after a negative response may not change how it is perceived (Houghton et al., 2017).

- With the increased online presence introduced through the coronavirus pandemic, people rely more on computer-mediated communication (CMC); especially text messages (Hamstra, 2020). Additionally, current research lacks a focus on the reader's perception of the message received when a "period" was or was not used at the end of the message. Current academic research was limited and generally based on punctuation or emojis. Upon noticing this limitation, and the trend of increasing dependence on CMC in our own lives, we were prompted to research the perception of periods in text messaging.

- Hypothesis:
  - The group that is presented with text messages with a period at the end will perceive the message to be more passive-aggressive. This is because linguistic features like punctuation compensate for the lack of emotional cues in text messages.

METHODS

PARTICIPANTS

- Sample size n = 60, with an age range of participants of 20 – 32 , where group 1 averaged at 24.61 years with the standard deviation being 3.63 and group 2 averaged at 22.85 years with the standard deviation being 3.37. They were recruited via convenience sampling as friends and family of the researchers.
- Each participant, using Qualtrics, was assigned to either "with period group" or "without period group" where they were provided with 10 questions that were to be answered on a five-point Likert scale. The questions were identical for both groups with the exception of the use of a period at the end of the sentence, which was the independent variable.
- Group 1: Control Group, n = 34 (female - 58.8%, male - 38.2%)
- Group 2: Experimental Group, n = 26 (female – 61.5%, male – 38.5%)

MATERIALS

- As this was an online anonymous study conducted via Qualtrics, every participant was required to have an electronic device to partake in the survey. This survey was designed to collect data on perception of a "period" in text messages.

METHODS (Cont.)

Materials (Contd.)

- Participants in both the groups were presented with 10 text messages along with one survey question with each message asking them to rate the tone of the message as passive-aggressive or not on a 5-point Likert scale. The messages presented were the same for both the groups except for the use of a period at the end. All the messages presented were self-developed by the researchers.

PROCEDURE

- The participants were provided with text messages that they might come across daily like "I will see you later" for group 1 and "I will see you later." for group 2. Questions provided to each participant were required to be answered on a 5-point Likert-scale [1-Not at all passive-aggressive, 5-Extremely passive aggressive]. The main question remained the same throughout the survey (Do you think the above text message has a passive aggressive tone?), but the text message to be rated changed with each question. Some of the examples of text messages provided for rating are "I am going home now", "Its fine" for the control group, and "I am going home now.", "Its fine." for the experimental group. The dependent variable was the perception of the message as passive-aggressive or not by the participants.

- Participants were prompted to fill out the consent form. Upon gaining consent, participants were randomly assigned to one of the two groups: (1) Control Group with no period at the end of the sentence, and (2) Experimental Group with period at the end of the sentence. Finally, participants were thanked and debriefed at the end of the survey.

RESULTS

- The assumption of homogeneity of variances was assessed via Levene's test; no violations were found. Upon meeting the criteria for homogeneity, an independent samples t-test was conducted.

- The results of the two-tailed test indicated that there was a significant difference between the control and the experimental groups, in the direction of our hypothesis; $t(58) = -2.59$, $p = .012$, $r^2 = 0.10$ (medium effect). The p value [.012] was lower than the alpha value [0.05], thereby indicating that college-aged students did perceive text messages ending with a period to be more passive-aggressive.

- See Figure 1 for group means and standard deviations.

Figure 1.
Group Means and Standard Deviations for Tone Perception
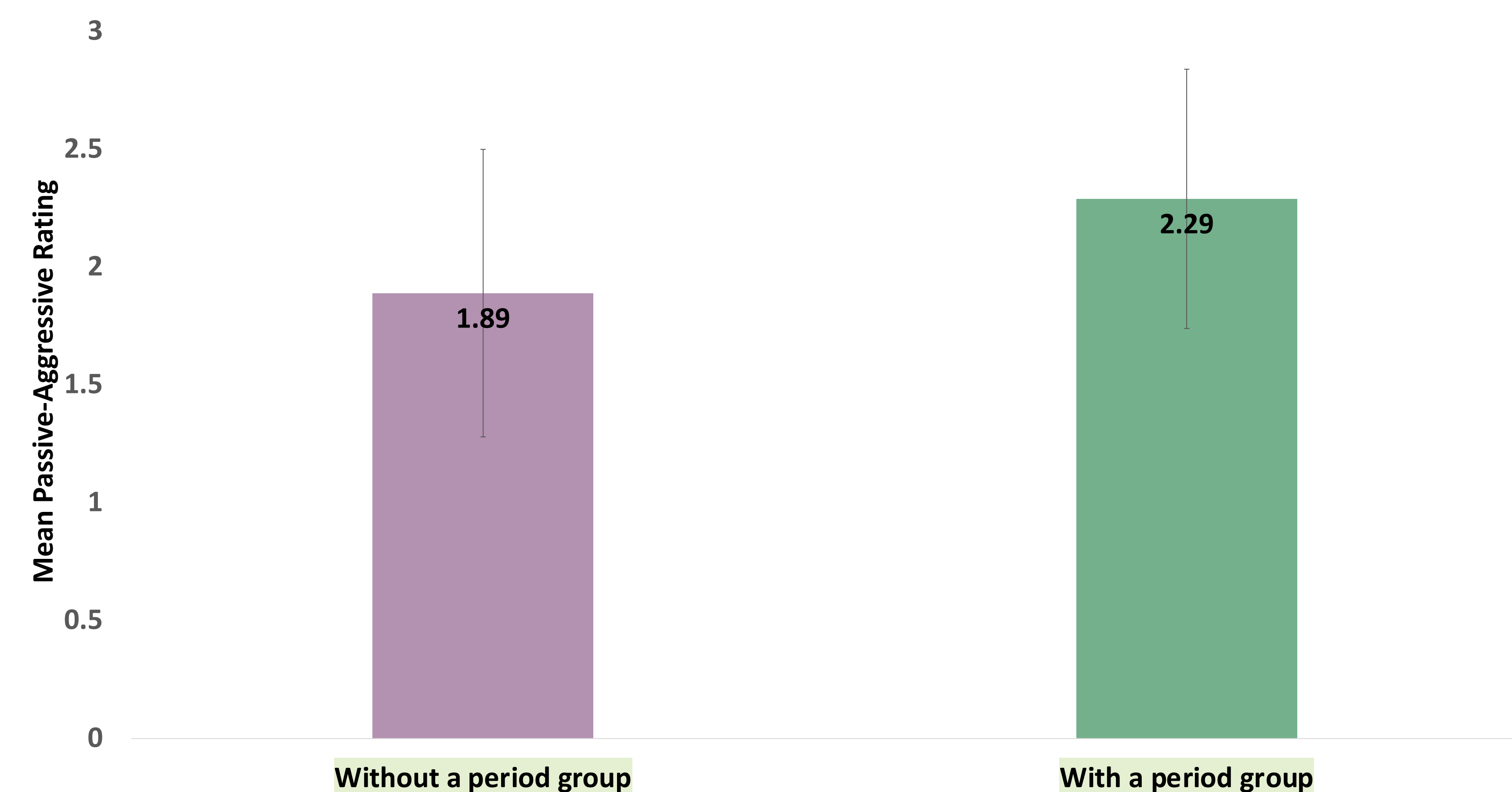
DISCUSSION

- Our hypothesis was supported by our data. A significant difference was detected between the two groups with a medium effect size, in the direction of our hypothesis, indicating that messages ending with a period, indeed, are perceived as being more passive-aggressive by the college-aged students.

- With the consistent rise in the use of text messages as a mode of communication, this research paves a way for future studies to enhance our understanding of Computer Mediated Communications (CMC) and to avoid misunderstandings that can occur, due to lack of verbal cues, in this form of communication.

- Strengths: Confidentiality and anonymity of the participants, the easy accessibility of the survey, the implementation of random assignment, simplicity of design for easy replication.

- Limitations: Potential threat to internal validity due to selection effects as the participants were recruited via convenience sampling and resulted in an unbalanced female to male ratio, with female being the dominant gender. Additionally, the smaller sample size used in this study could lead to over-generalization of the results to the general population. Furthermore, the way the text messages are perceived can also be affected by unaccounted extraneous variables like the big-five personality factors, participant's social environment etc. that could have affected the results (Holtgraves, 2011).

- Suggestions for future research:
  - Replicating the study with a larger sample size and controlling for gender variances.
  - Accounting for the influence of personality factor variances.
  - Getting participants to decipher the message and form an open-ended responses in real-time; this could perhaps encourage them to further reflect on the tone of the message rather than passively observing a conversation that has already taken place.

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