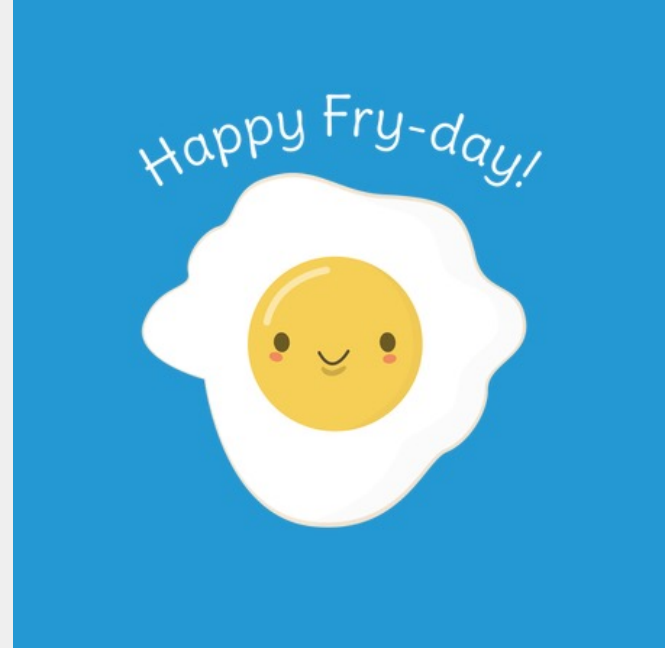# Effects of Humor on Behavioral Intervention and Perceived Interruption:
An Online Survey Study

Outlines

Introduction

Related Work

Method

Results

Discussion

Conclusion

Introduction

- Prolonged sedentary is associated with many chronic diseases, such as CVD (cardiovascular disease) and obesity (González, Fuentes, & Márquez, 2017).
- Prolonged sedentary behavior is currently prevalent in the workplaces.
- For example, a study among office employees (Kazi, Duncan, Clemes, & Haslam, 2014) found that up to 70% of working hours were spent sedentary.
- Likewise, Thorp et al. (Thorp et al., 2012) also agreed that workplace was the key setting for prolonged sedentary time.
- Moreover, unfortunately, increasing their physical activity or reducing their sedentary time outside work does not compensate for the negative effects of their prolonged sedentary behavior during work time (Clemes, Oêconnell, & Edwardson, 2014).
- Bergouignan et al. (Bergouignan et al., 2016) revealed that introducing short bouts of activity during the workday routine is a promising approach to improve overall well-being at work, without detrimentally impacting worker performance.

- While there are a number of ways to help trigger the behavior change, one way to increase the frequency of employees taking short breaks during work is delivering prompts.

Introduction

*very briefly
Describing issues with current methods

What are the current methods. And their issues. Need for novel approach.

!may not be effective in the workplaces.
!may be too interrupting and annoying to the receivers,
        Leading to future abandonment of the function or app

Introduction

*very briefly
Then this novel approach proposed is humor!

Justify why humor

Introduction

*Describe overall goals

-> To investigate a way to improve user experience while keeping the prompts functional.
-> To use humor into the content of prompt to investigates how humor can influence behavioral intention and perceived interruption.

Hypotheses

*describe specific research questions/hypotheses

❖ **Humor for Behavioral Intention**
   1) Prompt with humor content is related to higher behavioral intention to take a break.
   2) Higher perceived humor level is related to higher behavioral intention.

❖ **Humor for Perceived Interruption**
   3) Prompt with humor content is related to lower perceived interruption.
   4) Higher perceived humor level is related to lower perceived interruption

Related Work

- ❖ **Prompt for Prolonged Sedentary Behavior**
- ❖ **Interruption of Notification**
- ❖ **Humor for Behavioral Intention**
- ❖ **Humor for Perceived Interruption**

Prompt for Prolonged Sedentary Behavior

Definition:

Prompts are also called digital nudges, cues, triggers, calls to action, and so on (Fogg, 2009). A prompt is "something that tells people to perform a behavior now".

*add prior papers that focused on reducing sedentary behaviors using nudges.

*What are their limitations. Paper's limitations?(explain why they cannot cover the problem I wanna solve)

Limitations:

May not be effective enough to trigger positive behavior changes

Motivation:

To make prompts more persuasive to increase behavior changes or behavioral intentions.

Interruption of Notification

Problem:

Prompts could be intrusive if not delivered appropriately, leading to less engagement or even elimination of the related apps (Dennison, Morrison, Conway, & Yardley, 2013).

*no previous work on user experience while reducing prolonged sedentary behavior

Motivation:

To keep prompt functional (be able to interrupt)

But also increase user experience (reduce users' perceived interruption)

Humor for Behavioral Intention

Why Humor:

***theoretical justification for using humor**

Humor is useful to increase behavioral intention

humor also fits in the workplaces

Mechanism:

Increasing persuasion and arousal

Reducing workplace stress and increasing self-efficacy

*what other work has used humor?

Humor for Perceived Interruption

*theoretical justification for using humor

Why Humor:

The use of humor would not impact the function of prompt but help them to get more attention.

Mechanism:

Attracting attention

Making content more likeable

*what other work has used humor?

Why This Study

*describing novel contributions from this work

Method

Participants

Design and Procedure

- ❖ **A Between-subject Design**
- ❖ **Materials**
- ❖ **Measures**

Data Analysis

Participants

From Amazon Mechanical Turk

Inclusion Criteria

- In the United States

- An acceptance rate of over 95%

Screening

- A match between MTurk Work ID at the end of survey and survey code

- Three attention check questions in the survey

- Speeders (finish in 30% of the median time)

- Duplicate responses using the same IP address

Design and Procedure- A Between-subject Design

A between-subject design with two conditions

(humor level of prompt: humor vs. non-humor)

Design and Procedure- Materials

"Alexa is a graduate student working in her lab office. She is busy and under stress. It was 3pm on Monday. She had been sitting and working in front of her computer screen for over six hours. She knew that she needed to be prompted to take a walk as a short break, so she had scheduled several prompts among the day. Sometimes she ignored the prompt and kept working; sometimes she followed the prompt and took a walk as short break.

At the moment, her phone on the desk vibrated. She took a glance on the screen and saw the prompt:"
*hard to read

Design and Procedure- Materials

Participants in the **humor condition** were presented with the prompt:

"📱: Do you remember the joke I told you recently about your spine? It was about a "week" back. Anyway, time to take a walk!"

Those in the **non-humor condition** were presented with the prompt:

"📱: Standing up can make a difference on your body. It's good to take a break and lower your stress. Time to take a walk."

Design and Procedure- Measures

Perceived Humor Level of Prompt

Manipulation Check

To rate the level of agreement (1 = strongly disagree, 5 = strongly agree) with the following statement:

This prompt is humorous.

Behavioral Intention

To rate the level of agreement (1 = strongly disagree, 5 = strongly agree) with the following statement:

After reading this prompt, now I'm gonna take a walk.

Perceived Interruption

To rate the level of agreement (1 = strongly disagree, 5 = strongly agree) with the following statement:

I feel interrupted by this prompt.

Data Analysis

Transcription

"strongly disagree" is transcribed to 1

"strongly agree" is transcribed to 5

Non-humor condition is labeled as -1

The humor condition is labeled as 1

(for linear regression)

Rstudio

One-way ANOVA

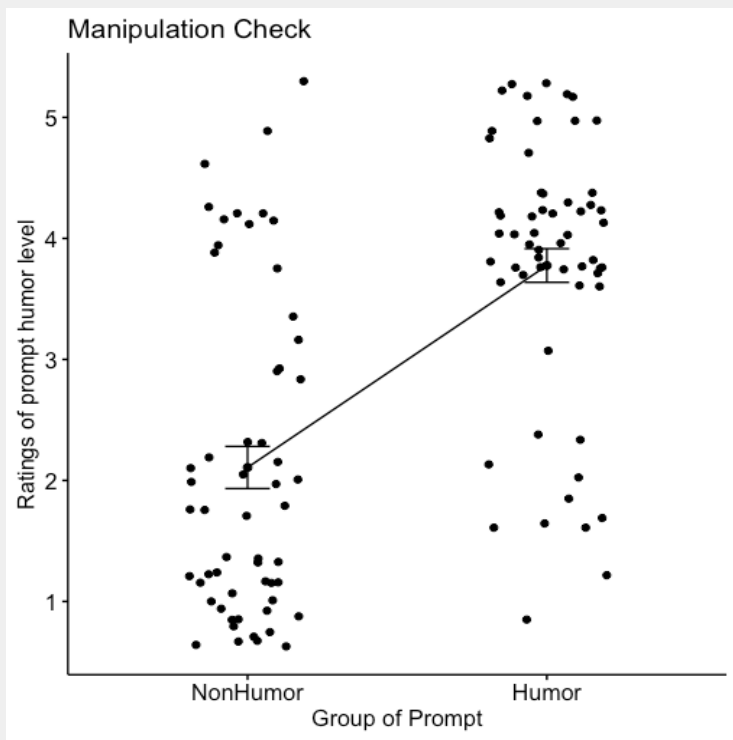Linear Regression

Results

Manipulation Check
Hypothesis 1
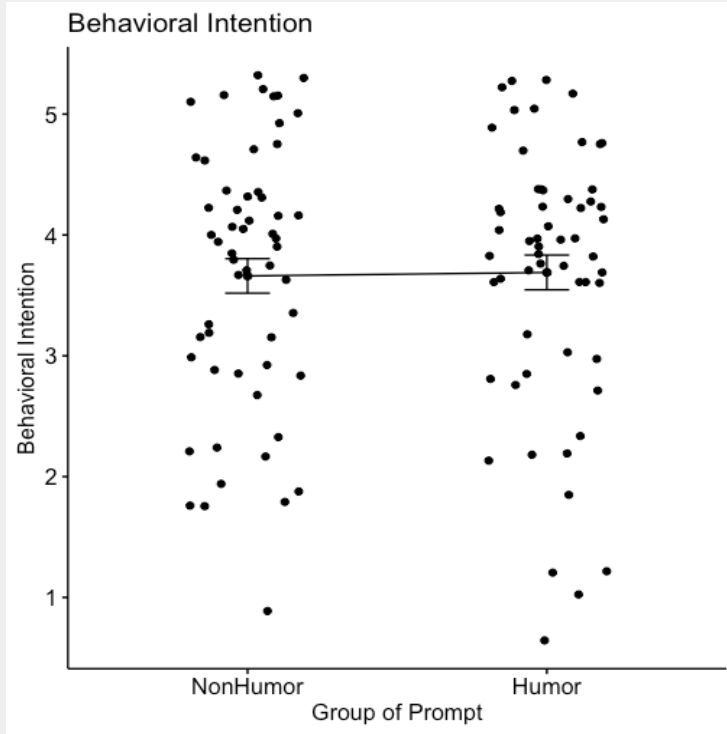**Hypothesis 2**
Hypothesis 3
Hypothesis 4

Manipulation Check

Ratings of prompt humor level by group of prompts (Manipulation Check). The straight line showed that humor level of the prompt content was successfully manipulated (F[1,112] = 56.44, p = 3.6e-11). However, the dots at the up-left and bottom-right corner showed that the manipulation was not perfect

The manipulation check results suggested that the humor level of the prompt content was successfully manipulated.
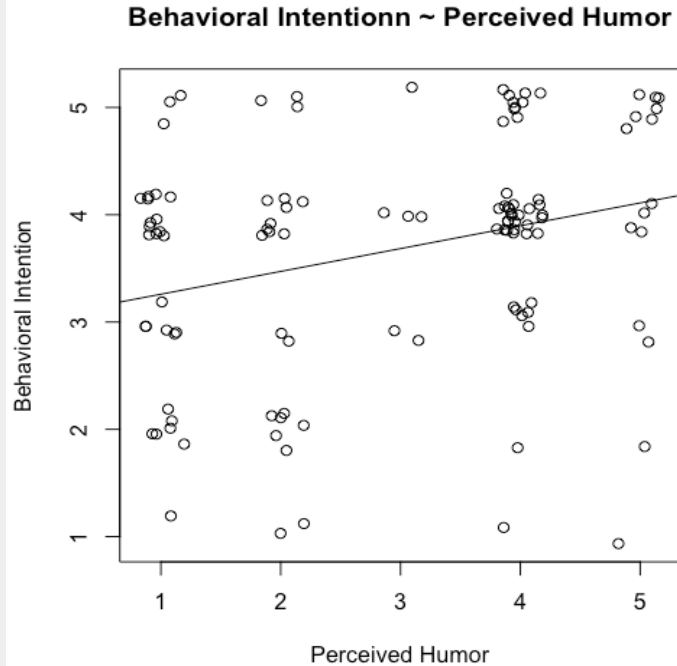
Hypothesis 1

Behavioral Intention by group of prompt humor level. There was hardly a difference of behavioral intention existing between groups of humor (F[1,112] = 0.02, p = 0.887).

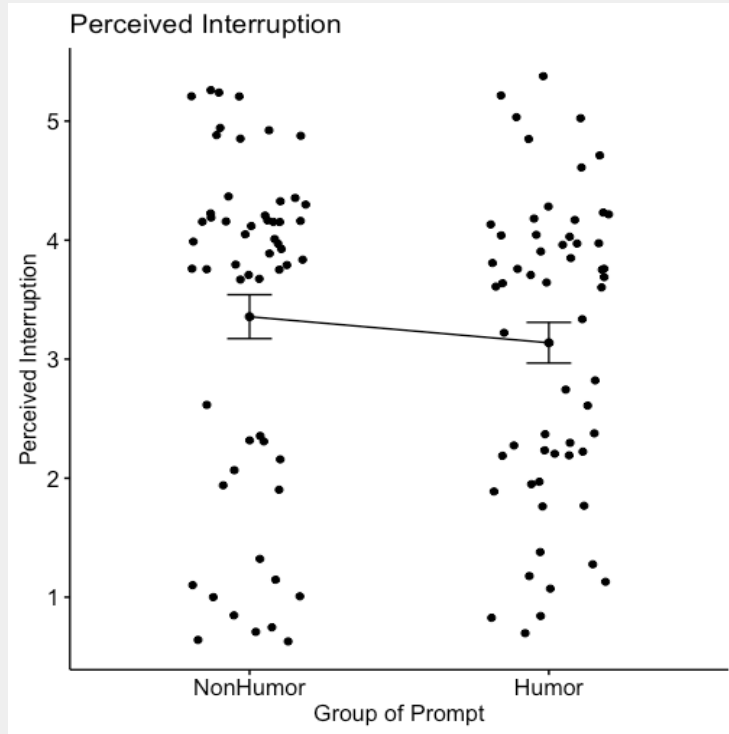**These results do not support the hypothesis 1, but all means were in the predicted direction.**

Hypothesis 2

Behavioral Intentionn ~ Perceived Humor

Perceived Interruption by perceived humor level. The positive linear regression line showed a significantly positive relationship between behavioral intention and perceived humor (b = 0.213, p = 0.002).

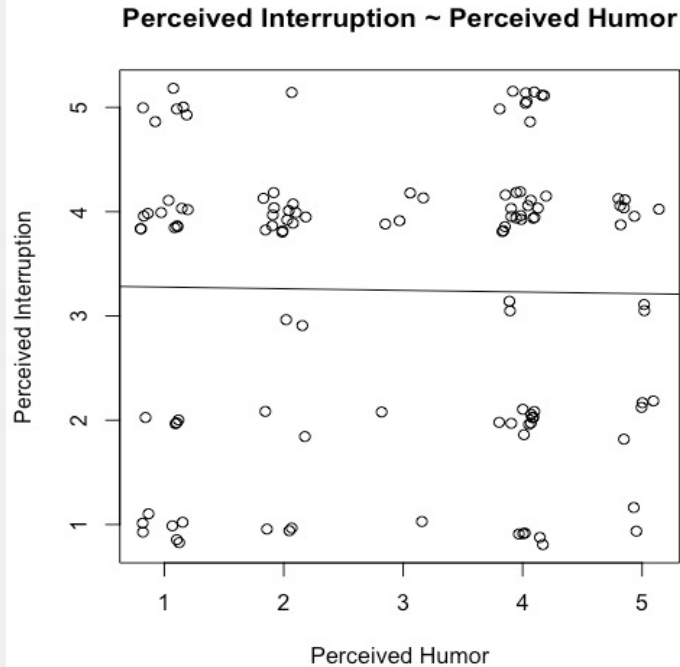**These results strongly supported hypothesis 2.**

Hypothesis 3

Perceived Interruption by group of prompt humor level. The perceived interruption in the non-humor group was higher, but the difference was not significant ($F_{[1,112]} = 0.76$, $p = 0.385$).

These results did not support the hypothesis 3, but all means were in the predicted direction.

Hypothesis 4

Perceived Interruption by perceived humor level. A pretty flat linear regression line. There was no correlation between the perceived humor and the perceived interruption (b = -0.016, p = 0.856).

These results did not support the hypothesis 4, but all means were in the predicted direction.

Discussion

- ❖ Behavioral Intention
- ❖ Perceived Interruption
- ❖ Limitations
- ❖ Future Directions

Behavioral Intention

- There is a positive correlation between perceived humor and behavioral intention, but it would be difficult to manipulate humor for all participants due to individual differences.

* Briefly reiterate the findings

Perceived Interruption

- The relationship between humor and perceived interruption stayed unclear based on the results of this study.

- * Briefly reiterate the findings

- The reason might be individual difference on the perception of humor, and the moderating effects of humor appreciation and attitudes towards humor.

- The practical implications of the findings, therefore, need further supports from future research work.

Limitations

1. The manipulation of humor levels of prompt

The study could choose other types of humor, following other generation process, such as arousal-safety theory, that may have better manipulation.

2. Only used one pair of prompts

The results may not be generalizable to a different pair of prompts, according to the language-as-fixed-effect fallacy (Raaijmakers, Schrijnemakers, & Gremmen, 1999).

3. A between-subject design

Besides random assignment, as a between-subject design, the study failed to consider the individual differences among participants which may impact their perception of humor.

Limitations

4. A survey study measuring behavioral intentions and perceived interruption

The results of the actual behavior and perception from a field study may be different from the results of this scenario-based online survey study.

5. Participants

Are not required to be "Masters" from the Amazon Mechanical Turk. Their data may not be valid even though they pass the attention check questions.

Future Directions

- More pairs of prompts using other types of humor, to increase generalization of the results and reduce language-as-fixed-effect fallacy (Raaijmakers, Schrijnemakers, & Gremmen, 1999).

- A within-subject design or other design, to avoid or reduce the effects of individual differences, such as ethnicity and gender, on perception of humor.

- Field studies could be conducted to collect real feelings and actions, using passive sensing devices, to see their short-term and long-term effects.

- The effect of stress, appreciation of humor, and attitudes towards humor as covariates, to test the mechanism of the hypotheses in the study.

Future Directions- Implications

- The results of the study may be inspiring for the fields of behavior change intervention and notification systems.

- Practitioners from health care and application or system designers may find the preliminary results interesting and intend to try it out to their product, with little harm to the receivers even if not having the expected results.

- The practical use of humor should take individual differences into consideration, thinking about how to tailor appropriate prompts with preferred humor types to trigger expected results.

*provide more concrete examples of implications

In total, the use of humor in behavior change and notification systems has potentials, but its practical implications still need further supports from future studies.

Conclusion

1. A novel approach to help improve the effectiveness and user experience of the prompts by exploring the relationships between humorous prompt, perceived humor, behavioral intention, and perceived interruption.
2. Adding to the extant literature by providing some evidence supporting the use of humor to increase behavioral intention of taking a break from long sitting in the workplaces.
3. A humorous prompt, if agreed by the receiver, may trigger higher behavioral intention of taking a break from prolonged sedentary behavior in the workplaces.
4. The relationship between humor and perceived interruption stays unclear and needs further investigation with potential moderators, such as stress level, appreciation of humor, and attitudes towards humor.

Thank You!

Do you have any questions?