

✨L-derly Stereotypes✨: A Replication of Bargh et al. 1996

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Abstract

This is a direct replication of Experiment 2 in [Bargh, Chen, and Burrows's](#) Automaticity of Social Behavior: Direct Effects of Trait Construct and Stereotype Activation on Action (1996). The original experiment, which sought to study the effect of behaviorally priming subjects with stereotypes of elderly people, asked participants to complete a scrambled-sentence activity with words relevant to elderly stereotypes and then timed participants as they walked down a hallway after exiting the lab room. Initially the experimenters led participants to believe they would be participating in a study of language proficiency and they were only informed of the actual purpose of the study after they had been timed walking down the hallway. The original paper found that priming with elderly stereotypes caused participants to walk more slowly at the end of the experiment. Our replication used similar methods and found no significant difference between the mean walking speeds of participants in the priming condition ($M = 12.72$ seconds, $SD = 1.78$) and those in the control condition ($M = 12.84$ seconds, $SD = 1.003$). However, our sample size was only 8 participants.

Introduction

Bargh et al.'s (1996) original paper tested the effect of priming with elderly stereotypes on the basis of automatic social behavior. Automatic social behavior is a theory that situational factors surrounding a person can trigger specific behavioral patterns. For example, mentioning terms associated with the elderly such as *lonely*, *frail*, *wrinkled*, and *Florida*, will cause a person to walk slower than people who were not shown these words.

The original study found that participants primed with elderly stereotype words in a word search walked much slower than those primed with neutral words. Both Experiment 2a and Experiment 2b found statistically significant evidence, ($p < .01$) and ($p < .05$), respectively.

In contrast, another replication (Doyen et al., 2012) led half of the people running the experiment to believe that participants would walk faster when primed with elderly-associated words in a word search, while they led the other half to think that participants would walk slower. The experiment found that participants would *only* walk slower in tests where the experimenter thought that would be the result, suggesting that the effect lies not in the priming word search but in the experimenter's intent.

This study is a direct replication of Experiment 2 from the initial study by Bargh et al. (1996).

Methods

We created two lists of scrambled sentences, each containing 30 sentences. One list included sentences containing words related to stereotypes involving older people (for example: “gray,” “traditional,” “wise”), sourced from the original study by Bargh et al. (1996). The other list was a control, with words taken from the replication by Doyen et al. (2012), which had no relation to the words commonly associated with older people. (See Appendix A for the word scramble lists.)

We asked people to sign up for a psychology study and explained what they would do when they arrived. When participants arrived, they stopped at a “front desk” area. One experimenter provided them with the consent form and instructed them to walk to a second table, where another experimenter provided them with the sentence scramble task. Each participant was instructed to discard one word from each set of terms and unscramble the remaining words into a new sentence. Once the participants finished, they were thanked and instructed that they may leave. Next, an experimenter sitting near the middle of the hallway recorded how long the participant took to walk down said hallway, starting the timer once they passed a box and stopping the timer once they reached a line of tape on the floor in front of the front desk. (See Appendix B for all scripts and instructions.)

We conducted this experiment double-blind, meaning the experimenters involved did not know which sentences the participant was given. This would ensure that our experimenters would not influence the participants or their timing when they walked down the hallway once they finished the sentence scramble task. To maintain blinding, each stack of sheets, control or condition, was placed in envelopes noted by either heads or tails. The designation of which set of lists was heads and which was tails was completed by an experimenter that was not involved in conducting the tests. This designation was necessary to ensure randomization and the ability to keep track of the data without knowing what was on the paper.

After the experiment was completed and the data collected, we sent a survey to the eight participants. It asked what the participants thought the purpose of the study was, whether they

thought the sentence scramble task had any impact on their behavior, if they were aware of any similarities between any of the words, and whether they noticed the line of tape we had placed on the floor (See Appendix C for all questions). Only five participants responded. Of those five, each confirmed that they were not aware of the ulterior motive of the experiment.

Results

This study included eight participants. Five participants were primed for automatic social behavior by taking the “old stereotype” condition sentence scramble sheet, while three were given the control or “no stereotype” sentence scramble sheet. We expected 27 participants; however, 13 didn’t show up, and we had to remove 6 participants’ data, leaving us with usable data from 8 trials. We had to remove data due to experimenter error, as well as participants not following instructions.

Based on the results, $t(5.996) = 0.123$, $p = .907$, there is no significant difference between the mean walking speeds of participants in the priming condition ($M = 12.72$ seconds, $SD = 1.78$) and those in the control condition ($M = 12.84$ seconds, $SD = 1.003$). The t-value is very small (0.123), and the p-value is .907, which is not statistically significant. The 95% confidence interval $[-2.290, 2.531]$ suggests that the true difference in means between the two groups could be anywhere from -2.290 to 2.531, which includes 0.

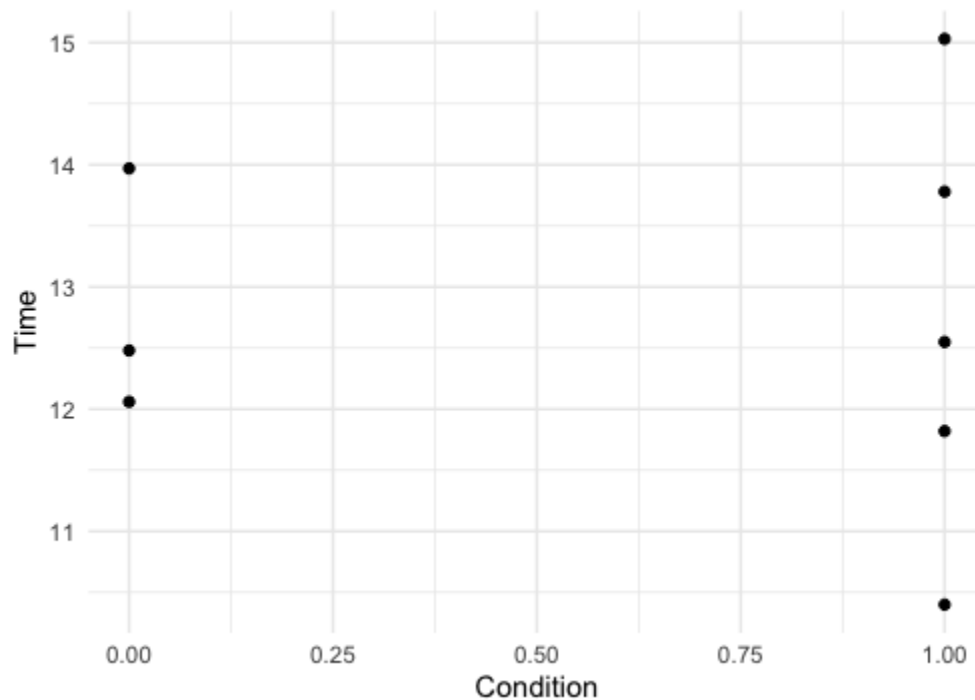


Figure 1. Scatter plot of time (in seconds) on the y axis and control vs experimental (elderly priming) condition on the x axis. Control = 0, elderly priming = 1.

Conclusion

In conclusion, we were unable to replicate the findings from Experiment 2 of Bargh et al. (1996). The original study found that priming participants with elderly stereotypes caused them to walk more slowly down a hallway. However, our replication found no significant difference in the mean walking speeds of participants in the priming condition and those in the control condition. This suggests that the effect observed in the original study may not be a reliable phenomenon.

Our replication used similar methods to the original study, with participants completing a scrambled-sentence activity with words relevant to elderly stereotypes before being timed as they walked down a hallway. We also conducted our experiment double-blind to avoid any experimenter bias. Finally, we sent a survey to participants afterward to ensure they were unaware of the study's true purpose.

Even though our study only included eight participants, as we had to remove data from six participants due to errors, our findings are consistent with another replication study ([Doyen et al., 2012](#)) that found the effect observed in the original study may be due to experimenter bias rather than the priming of stereotypes. It is important to note that the small sample size (only 8 participants) and the high dropout rate could limit the generalizability of these results. Additionally, factors such as the setting, context, or cultural differences could have influenced the results of this study.

In conclusion, our replication study highlights the importance of replication research in psychology and the need for further investigation into the replicability of automatic social behavior research. In addition, future studies could explore the possible factors contributing to these findings' inconsistencies, including the role of experimenter bias and sample size.

Author Contribution Statement

A.B. Experimenter, Methods, Edited Manuscript, Recruited Participants, Appendix C

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E.N. Materials, Methods, Manuscript, Lead Methods Writer

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V.M. Experimenter, Experiment Time Setup, Results, Methods Photos, Data Analysis, Experiment Setup, Experiment Trial

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A.Q. Results, Data Analysis, Conclusion/Discussion, References, Manuscript Editing

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K. R. Manuscript Editing

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C.G. Methods and Materials

A.S.L. Experimenter, Recruitment, Methods

L.J. Introduction, Appendix, Editing

A.F.B. Experimenter

I.R, A.L.H.G., T.R. and E.L.-P. supervised the project.

References

Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of personality and social psychology*, 71(2), 230.

Doyen, S., Klein, O., Pichon, C. L., & Cleeremans, A. (2012). Behavioral priming: it's all in the mind, but whose mind?. *PloS one*, 7(1), e29081.

Appendix A

1. Consent Form
2. Neutral word scramble sentences:
 - a. A Purchase Egg Present Christmas
 - b. Bass The Is Small Mouse
 - c. He's For Starved Attention Pen
 - d. Platinum Hat Blond Color In
 - e. She Candle Generously Candy Gave
 - f. Training Rigorous Go Book Through
 - g. Get I Needle Sometimes Nervous
 - h. Scissors And Good I'm Feeling
 - i. Eating Mashed Leopard Loaded Potatoes
 - j. An Steak Ample Cord Portioned
 - k. Jewelry Its Is Fur Brown
 - l. They Anxiety Magazine Their Disguised
 - m. You Something Banana Wore Different
 - n. Yellow Acetone Smell Flowers Good
 - o. It's Canvas Known Been Always
 - p. Blankets The Warm Were Corn
 - q. Eat Pin Don't Bananas Brown
 - r. Control Empirical Tissues Their Destroy
 - s. Go Razor Catch Rebound The
 - t. Tall Is Orange Giraffe The Giraffe
 - u. Complete Your Jurist Duties Bird
 - v. Predators Zebra Perplex Pillow Stripes
 - w. I'm Cactus Right Busy Now
 - x. Card They Mastery Show Here
 - y. Arrived Rollercoaster In We Time
 - z. Medicine Figurine With Play Your
 - aa. Uphill Remote Struggle Skiers The
 - bb. He Freezing His Enjoyed Meal
 - cc. Red Bubbles Laying Bricks Colored

dd. Boat A Freezing Owns She

3. Primed word scramble sentences:

- a. Hottdog The Gray Is Today Sky
- b. Cake All Shoes The Selfishly She Ate
- c. John Yesterday Leprosy Sentimental Felt
- d. Getting More Butter Conservative I'm
- e. Make Smile Rainbows Me Traditional
- f. Men Most Courteous Southern Are The Slap
- g. My Confession Is Grandmother Old
- h. Are Weird People Knits Super
- i. Sometimes So Lonely Gets Away Sally
- j. Spaghetti The Are Pyramids Ancient
- k. Is Dog My Enormous Obedient
- l. Florida Be Eat Your Soup Sure To
- m. Bingo What A Poster Cool
- n. Very Are Owls Underpants Wise
- o. Is Helpless Great Alphabet Soup
- p. From Race Bones Tommy The Withdrew
- q. Yummy Stubborn Is Pretty Meatloaf
- r. Wrinkle A Dress Alligator Your Has
- s. Bears Blue Be Around Careful
- t. Stubborn Lemons Are So Mules
- u. Pass Please Forgetful The Sugar
- v. Recently Helicopter Aunt My Retired
- w. Laundry Is Bitter Coffee This
- x. Gullible Children So Rain Are
- y. Jeans Ocean These Too Are Rigid
- z. I Jello A Farm On Live
- aa. Favorite Alone Color My Yellow Is
- bb. Worried Mother Is Your Long
- cc. Smells Night Dependent The Air Lovely
- dd. Horse You Did Slow That See

Appendix B

Script for Front-Desk Person **[WHEN SOMEONE COMES IN]**

Hello! Are you here for the study?

[WHEN THEY SAY YES]

Thanks so much for coming in!

Go ahead and take a consent form and please fill that out and put it on the desk, then take a seat and the experimenter will come get you soon!

Script for Experimenter **[BEFORE WORD SCRAMBLE]**

Hello!

Thank you for joining us! We'll get started right away.

Here's what to expect from this study today:

You will receive a paper containing some scrambled sentences.

To the best of your ability, please unscramble these words to make a coherent sentence. The sentences have five words and you'll need to choose one to discard and then unscramble the remaining words and write down the new sentence.

Here's your paper. Make sure not to tell or show me what's on it. Take as much time as you need to unscramble the sentences. When you are finished, you may place the completed sheet face down on the table where I will be seated.

[AFTER WORD SCRAMBLE]

Thanks for participating!

Feel free to take a piece of candy if you'd like one.

Instruction Sheet

Hello and welcome to the Sentence Unscramble task!

Please take out your sheet. It contains a list of scrambled sentences. Please rearrange these words into a comprehensive sentence containing all but one of the words provided.

When you are finished, please put your sheet **back into the envelope**.

Have a good day!

Appendix C

Questions in the survey sent to participants after the data was collected:

1. What did you think this experiment was about?
2. Were you aware of any way your behavior might have been influenced by the sentence scramble task?
3. Did you notice any similar themes in the words in the sentence scramble task?
4. Did you notice a line of tape on the floor?
5. Is there anything else you would like to say about the experiment?