A Reproducibility Study of Barari,Lucas & Munger's (2021)'s Research on Deepfake Videos

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Abstract

Background

This project is a reproducibility study of Barari,Lucas & Munger's (2021)'s article titled "Political Deepfake Videos Misinform the Public, But No More than Other Fake Media," in which they conducted two field experiments to examine what factors contribute to susceptibility to bogus information generated by fabricated videos. Their research results suggest that deception effects of deepfake videos are mininal. In addition, compared to other medium formats, such as text, audio, or skits, their are not more effective in deceiving viewers.

Methods

This reproducibility study uses the same research methods to replicate the experimental results under the same circumstances. Special attention will be paid to assess the results generated with the two field experiments, including the "exposure experiment" and "detection experiment." Two field experirmented, namely the "exposure experiment" and the "detection experiment" were performed by Barari,Lucas and Munger (2012) to test deceptive effects across different media formats. Specifically, in the exposure experiment, the authors conducted a factorial expeirment by randomly incorporating a fake video message as a treatment into the experiment where respondents were presented with political attacks with different media formats, including the video, audio, and skit conditions, against Elizabeth Warren and were asked to report how belieable the messages were. In the detection experiment, the respondents were tasked with distinguishing fake information from real one. Half of the respondents were noted that they would be exposed to deepfake videos while the other half remained untold until the experiment was concluded. Repondents were then assignmend randomly to three condictions, in which they were exposed to deepfakes at three levels, namely high-fake, low-fake or no-fake.

Results

This reproducilibity project is an attempt to replicate the results of the original study. My results are summarizeds as follows:

Conclusions

This study indicates that reproducibility of disinforamtion studies can be achieved.

Introduction

Reproducibility of scientific studies is an important issue that needs to considered when performing IHC, imaging, and quantitative microscopy. Articles in the Economist, Nature, and other scientific journals have highlighted reproducibility as a significant concern and identified animal models and antibodies as problem areas. Therefore, it is imperative when performing IHC that the concerns raised about the reproducibility of antibodies be addressed.

Data analysis

Descriptions of the experiments

Exposure experiment

The exposure experiment is a 2 by 6 factorial design, in which subjects were assigned to 6 groups, including video, audio, text, skit, ad, and control groups. Subjects in the video group received deepfake videos, while subjects in the skit group received the exact same information with only one variation - instead of Wallren herself, an actor was hired to impersonate her.

Condition	video	audio	text	skit	ad	control

video vs. skit analysis

only one varition

insistencies

Used two datasets from same source but with different age groups. Why? One with a lot of NAs, the other without? Why join? skew the results. - haven't heard from the authors

age data: 323156, including <18

That denominator was hard coded in from the census website when I realized the CPS crosstabs file was incorrect / didn't correctly include all age categories (including <18). I'll double check this though and let you know if I find anything different but that 323156 number should be right as a denominator.

- Soubhik

total cases should be: 253508

Questions about the demographic categories datasets

H1 testing

Deepfakes more deceptive than text/audio/skit

description of H1 testing

EDA

Conclusions and discussions