Reproducible analysis of Schroeder & Epley, 2015: Do you come across as smarter when people read what you say or hear what you say

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Abstract

This is a reproducible report based on a reanalysis of study 4 from Schroeder & Epley (2015) entitled “Do you come across as smarter when people read what you say or hear what you say?” Their analyis and the reproduced analyis here do indeed provide compelling support for their hypothesis speech conveys information about a persons’ mental capacity which cannot be capatured in text.

Keywords: communcation, speech, mental capacity, reproducible analysis

Word count: 882

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Method

This report reproduces the analysis from experiment 4 in Schroeder & Epley (2015). The data were downloaded from the "open data" folder for this class, from the file named "SchroederEpley2015data.csv." In experiment 4 Schroeder & Epley (2015) replicated the results of experiments 1-3 but here enlisted professional recruiters as participants to improve the ecological validity of their experiment.

Participants

The participants N=39 (mean age=30.85 years, SD= 6.24, 30 females) in experiment 4 were professional recruiters from fortune 500 companies who had agreed to evaluate potential candidates at the University of Chicago Booth School of Business. The experimenters reached out to 66 recruiters who had attended such a jobs conference at the University of Chicago via email to request their participation in a survey. Of the 66 recruiters contacted, 39 responded and agreed to participate.

Materials

The stimuli which were developed for experiment 1, of which a subset were used here in experiment 4, were created from video recordings of MBA students spoken elevator pitches made for potential employers. It was predicted that evaluators would respond more positively to the pitches that they heard rather than those they read, as this would make the candidates appear more thoughtful and intelligent.

The survey then asked participants to rate each potential candidate on 3 dimensions: the candidate's competence (as compared to the average candidate for a similar position),

their thoughtfulness, and intelligence. The recruiters were then asked to rate their general impressions of the candidates with questions that probed how much they liked the candidate, how positive and negative their overall impressions were and whether or not they would opt to hire the candidate.

Procedure

Participants responded to an online survey and were randomly assigned to either listen to recordings of spoken pitches (audio condition) or the same pitch in text (transcript condition) and answered survey questions. The materials were the same as experiment 1 (except that there was no video condition in experiment 4). The survey questions were rated on a likert type scale from 0-10 (e.g. 0 = much less thoughtful, 10 = much more thoughtful).

The recruiters ratings of the job candidates pitches were collapsed into into composite measures of intellect (cronbach's alpha = .92) and general impressions (cronbach's alpha = .93).

Data analysis

We used R [Version 4.0.2; R Core Team (2020)] and the R-packages *apaTables* [Version 2.0.8; Stanley (2021)], *crayon* [Version 1.4.0; Csárdi (2017)], *csvread* [Version 1.2.1; Izrailev (2018)], *data.table* [Version 1.13.6; Dowle and Srinivasan (2020)], *dplyr* [Version 1.0.3; Wickham, François, Henry, and Müller (2021)], *forcats* [Version 0.5.1; Wickham (2021)], *ggplot2* [Version 3.3.3; Wickham (2016)], *ggpmisc* [Version 0.3.8.1; Aphalo (2021)], *kableExtra* [Version 1.3.1; Zhu (2020)], *latex2exp* [Version 0.4.0; Meschiari (2015)], *latexpdf* [Version 0.1.6; Bergsma (2018)], *pandocfilters* [Version 0.1.4; Schwendinger and Hornik (2019)], *papaja* [Version 0.1.0.9997; Aust and Barth (2020)], *purrr* [Version 0.3.4; Henry and Wickham (2020)], *pwr* [Version 1.3.0; Champely (2020)], *readr* [Version 1.4.0; Wickham,

Hester, and Francois (2018)], *stringr* [Version 1.4.0; Wickham (2019)], *tibble* [Version 3.0.6; Müller and Wickham (2021)], *tidyr* [Version 1.1.2; Wickham (2020)], *tidyverse* [Version 1.3.0; Wickham et al. (2019)], and *tinytex* [Version 0.29; Xie (2019)] for all our analyses.

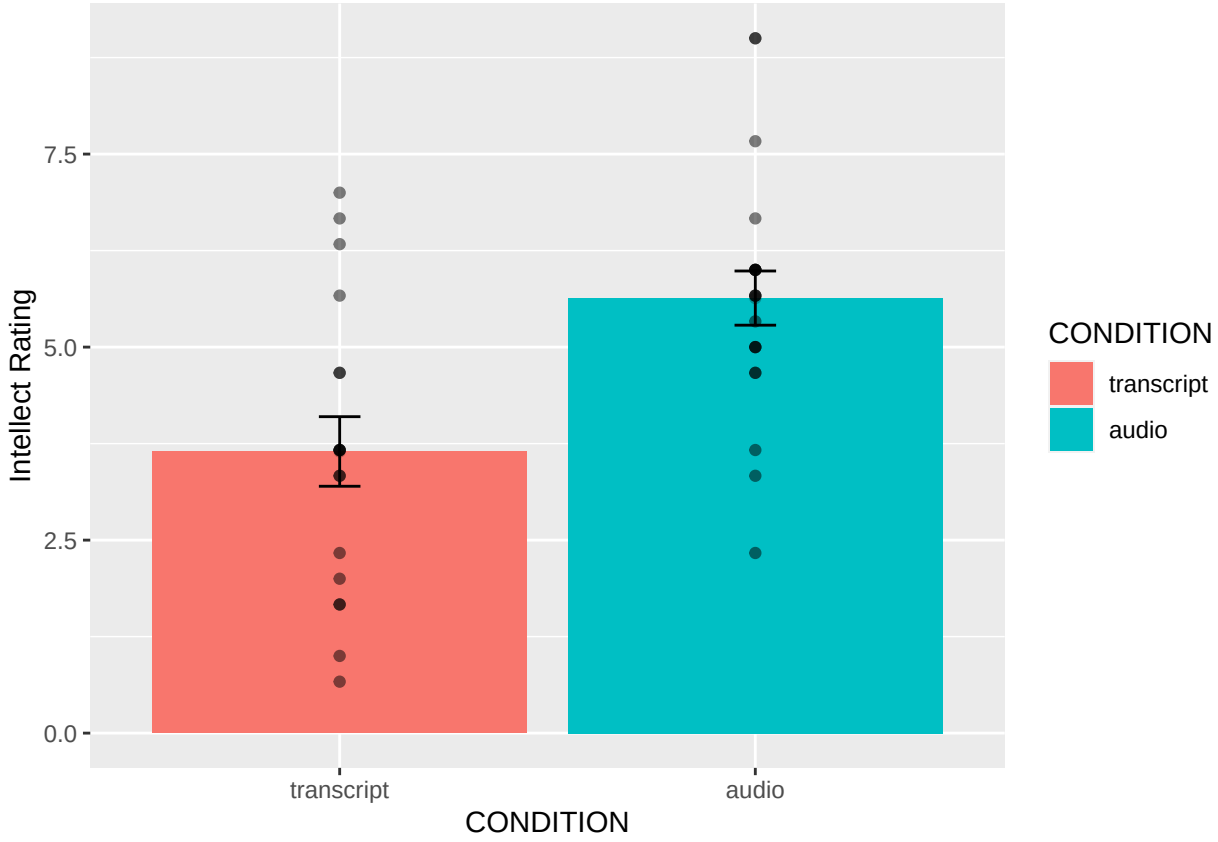
Results

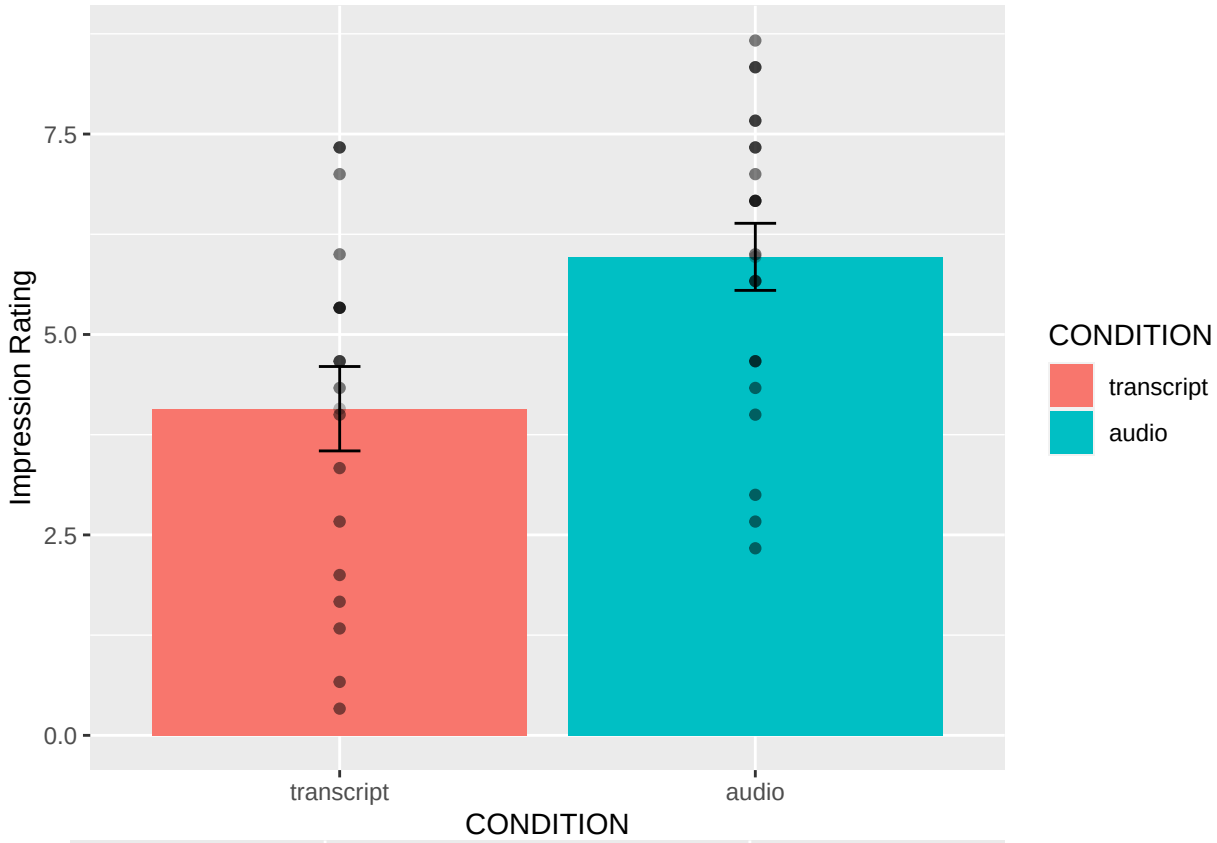
```
##    CONDITION Intellect_Rating
## 1 transcript         3.648148
## 2      audio         5.634921

##    CONDITION Impression_Rating
## 1 transcript          4.074074
## 2      audio          5.968254

##    CONDITION Hire_Rating
## 1 transcript    2.888889
## 2      audio    4.714286

##
##  Two Sample t-test
##
## data:  Intellect_Rating by CONDITION
## t = -3.5259, df = 37, p-value = 0.001144
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.1284798 -0.8450652
## sample estimates:
## mean in group transcript      mean in group audio
##                 3.648148                 5.634921
```

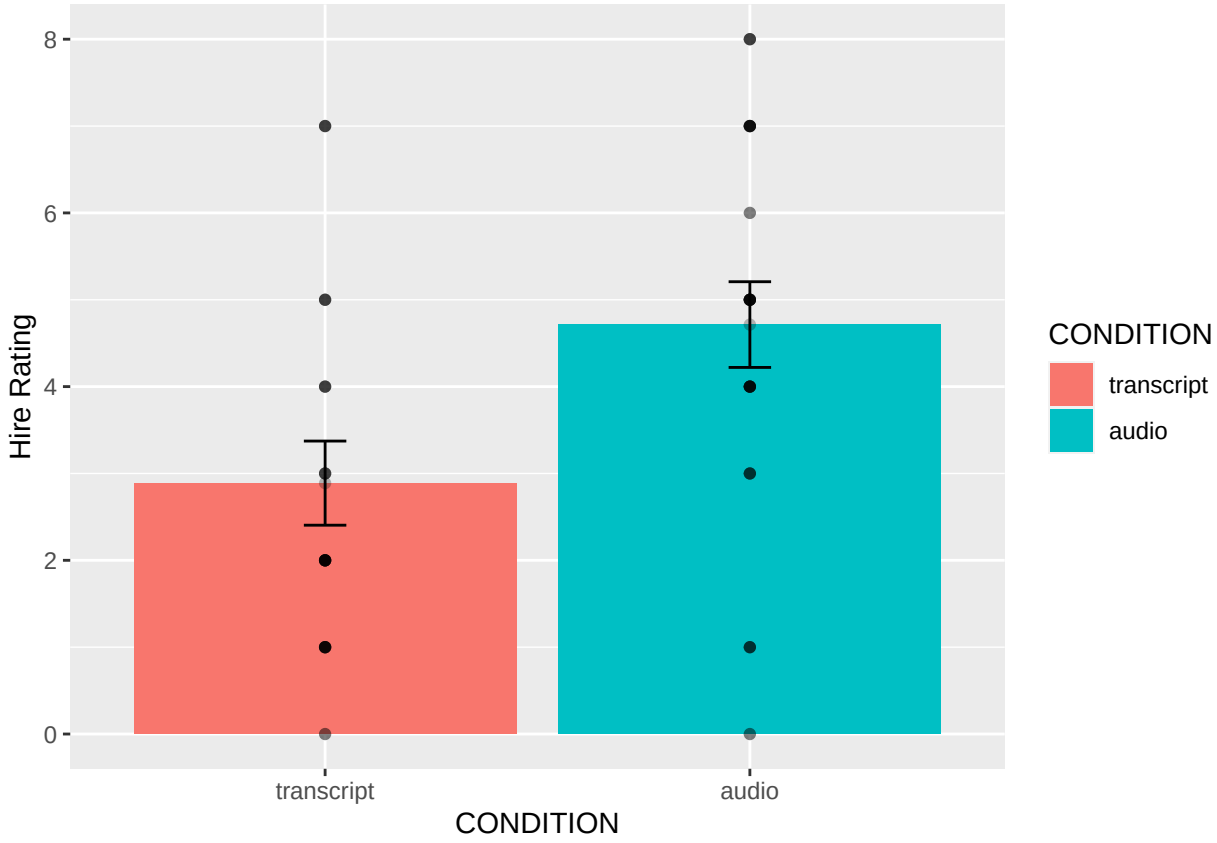
```
##
##  Two Sample t-test
##
## data:  Impression_Rating by CONDITION
## t = -2.8508, df = 37, p-value = 0.007091
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.2404752 -0.5478846
## sample estimates:
## mean in group transcript      mean in group audio
##                 4.074074                 5.968254

##
##  Two Sample t-test
##
## data:  Hire_Rating by CONDITION
## t = -2.6201, df = 37, p-value = 0.01267
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.2370242 -0.4137694
## sample estimates:
## mean in group transcript      mean in group audio
##                 2.888889                 4.714286
```

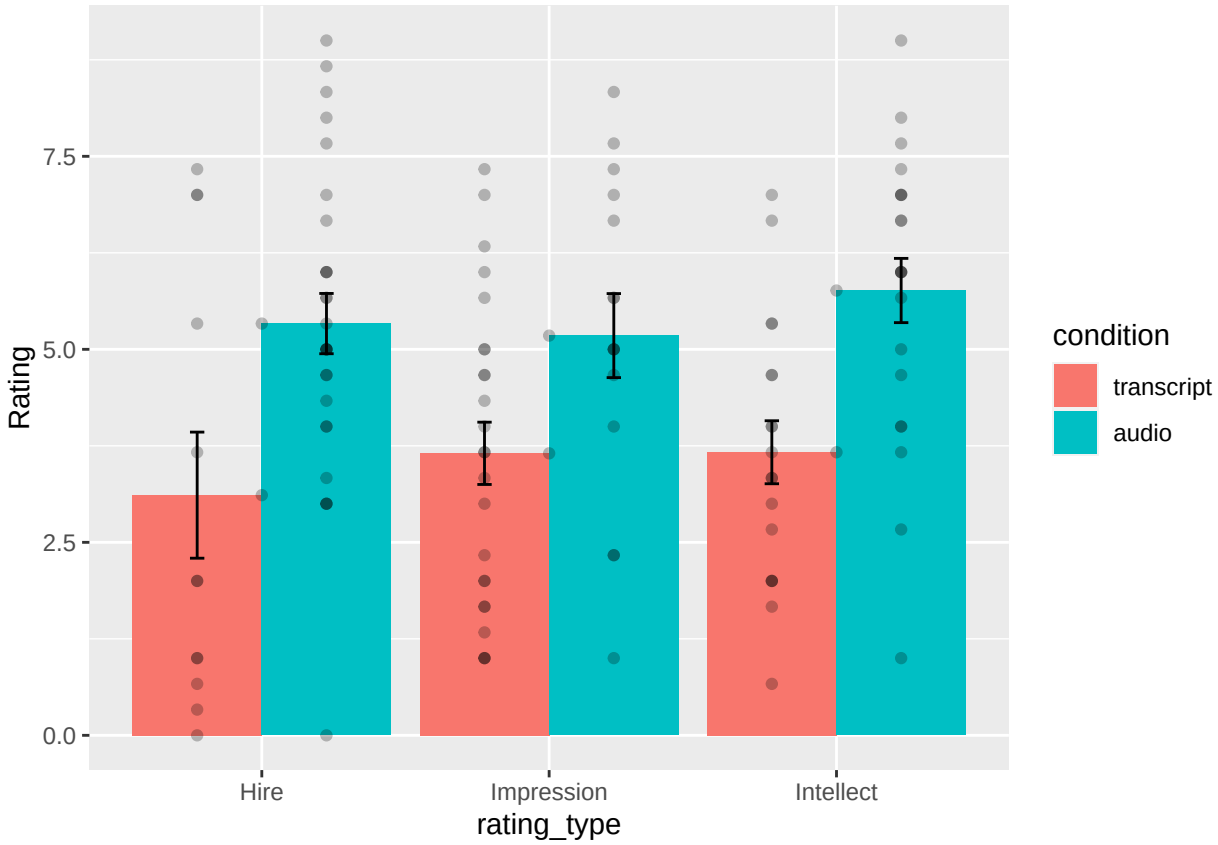
The results of this analysis are consistent with the original authors in that the mean ratings of the professional recruiters were greater in each condition when they heard audio recordings than read the job seekers elevator pitch. As is also the case of studies 1-3, in study 4 the recruiters rated candidates as more intelligent in the audio than transcript

condition $\Delta M = -1.99$, 95% CI $[-3.13, -0.85]$, $t(37) = -3.53$, $p = .001$, likewise their overall impression of the candidates $\Delta M = -1.89$, 95% CI $[-3.24, -0.55]$, $t(37) = -2.85$, $p = .007$ and the likelihood that they would hire the candidate $\Delta M = -1.83$, 95% CI $[-3.24, -0.41]$, $t(37) = -2.62$, $p = .013$ was greater in the audio than transcript condition.




Impression Rating
7.5
5.0
2.5
0.0
transcript
audio
CONDITION
CONDITION
transcript
audio

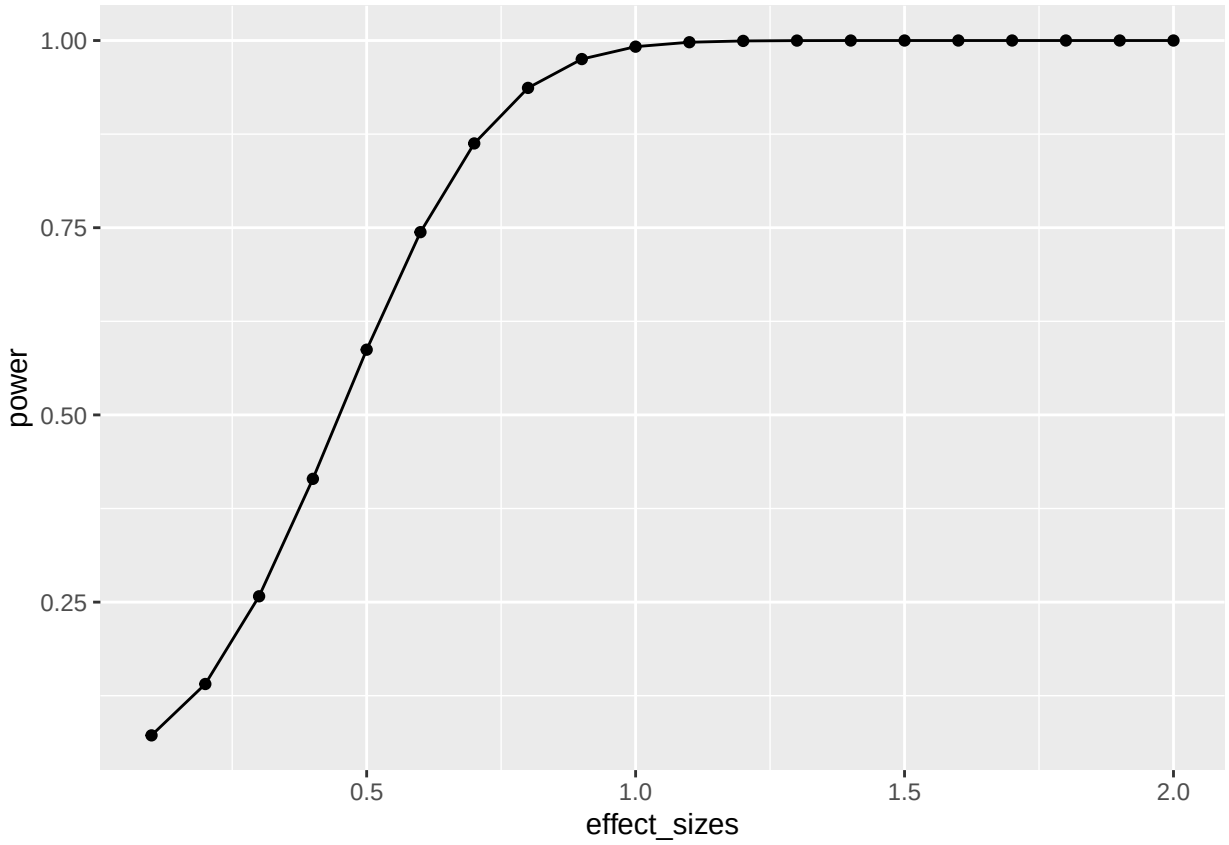

Hire Rating
8
6
4
2
0
transcript
audio
CONDITION
CONDITION
transcript
audio



Discussion

The results here conform with those found by Schroeder & Epley (2015) from experiment 4. Recruiters rated candidates more favorably across all dimensions when they heard rather than read candidates' elevator pitches. They argue convincingly that speech allows us to infer information, especially that of another person's mental capacity that cannot be captured in text alone.

#Powercurve


1.00
0.75
0.50
0.25
power
0.5
1.0
1.5
2.0
effect_sizes

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