Data Report:
Facebook Use Data from the 2015 Mechanical Turk Sample

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Abstract

This data report provides a summary of the Facebook Use Dataset from the 2015 Mechanical Turk sample. Subjects were recruited through Amazon's Mechanical Turk over summer 2015. The report explores the dataset by assessing key variables and characteristics of the sample through descriptive statistics and data visualizations, and identifies potential relationships between variables to test in future research.

Description of the Data Generation Process

Participants were recruited for an online survey experiment (n=225) through Amazon's Mechanical Turk (MTurk). MTurk is a crowdsourcing online marketplace often used for running social science experiments. Researchers publish Human Intelligence Tasks (HITs) and pay respondents who choose to complete them. For our experiment we required that respondents be citizens who live in the United States, are at least 18 years old, and use Facebook.

Respondents completed a survey comprised of the following:

1) A section collecting information on sociodemographic indicators, such as gender, age, and race, as well as political ideology. This section also included a personality traits battery assessing individuals' Big Five personality traits and their willingness to self-censor. We also asked questions about their Facebook use habits.

2) An experiment involving a counterattitudinal political message stylized as a Facebook post. Respondents were randomly assigned to four experimental groups according to their initial response to whether they agreed with the Ferguson grand jury decision not to indict Officer Darren Wilson. All four groups were instructed to imagine themselves coming across a friend's post about the decision while scrolling through their online social network newsfeed. Respondents in Group 1 viewed a post with which they should agree, based on their initial survey responses about their opinion on the decision, and that had no "likes." Respondents in Group 2 viewed a post with which they should disagree, and that had no "likes." Respondents in Group 3 viewed a post with which they should agree,

and that had 15 "likes." Group 4 viewed political messages with which they should disagree, and that have many "likes."

Thus, the first experimental manipulation was agreement/disagreement with the decision. The second experimental manipulation was the number of "likes" on the post, which conveyed the level of social endorsement of the post.

3) A post-survey assessing the respondent's willingness to express his/her opinion on the decision by liking or commenting on the post, as well his/her willingness to like, comment, sign, or share a petition, either the "Support Officer Darren Wilson" or the "Prosecute Officer Darren Wilson" campaign, from one of two subsequent posts. The last question on the survey presented the initial post again, and asked respondents to click on the part of the post that stood out the most to them.

<center>**Data Report**</center>

Variables

Of the 209 respondents in the experiment, 51 were assigned to view a post about the Ferguson grand jury decision with which they should agree, based on their initial survey responses, and that had no "likes." 46 respondents viewed a post with which they should disagree, and that had no "likes." 63 respondents viewed a post with which they should agree, and that had 15 "likes." 49 respondents viewed a post with which they should disagree, and that had 15 "likes."

Both the *Big Five* personality traits and *willingness to self-censor* may affect individuals' likelihood to express opinions online. These two indicators are measured as follows in our sample:

Big Five

The Big Five personality traits were measured on a 10-item, five-point inventory (BFI-10). Each of the five traits (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness) corresponded to a pair of statements in the inventory. One statement in each pair was reverse-scored. Studies suggest that the BFI-10 provides sufficient reliability and validity to assess personality when respondent time is limited (Rammstedt and John 2007). In this sample, the mean score on each personality trait assessed by the BFI-10 was as follows:

Extraversion: 7.152/10
Agreeableness: 7.73/10
Conscientiousness: 8.403/10
Neuroticism: 6.781/10

Openness: 8.033/10

We expect scores on extroversion to be positively correlated with respondents' self-reported likelihood to speak out online across all four groups. We expect scores on agreeableness to be positively correlated with respondents' self-reported likelihood to speak out online across the two agree treatments, but negatively correlated across the two disagree treatments.

Willingness to Self-Censor

The Willingness to Self-Censor Scale (WTSCS) is an eight-item, five-point self-report scale used to measure an individual's willingness to withhold an opinion from a group perceived to disagree with the opinion (Hayes, Glynn, & Shanahan, 2005). The mean score on the WTSCS in this sample was 25.16 out of 40.

We expect scores on the WTSCS to be negatively correlated with respondents' self-reported likelihood to speak out online across all four groups.

Sample

The unit of analysis in this data set is the individual. Survey respondents use Facebook, are at least 18 years old, are US citizens, and live in the United States. They were recruited from Amazon Mechanical Turk during summer 2015.

Of the 211 respondents recruited through MTurk, 52.1% were male, and 47.9% were female. The most heavily represented age bracket (44%) was between 25-34 years old. 13.2% of the

sample was 18-24 years old, 2.9% was 35-44 years old, 8.1% was 45-54 years old, 11.8% was 55-64 years old, and 1.9% was 65 or older.

The overwhelming majority of the sample (71.4%) identified as white, while 8.1% identified as Black or African American. The remaining 20.5% identified as either Hispanic/Latino, Native American/American Indian, Asian/Pacific Islander, Biracial, or Other.

In terms of ideology, the sample leaned left with 55.6% identifying as either extremely liberal, liberal, or slightly liberal. 17.5% identified as moderate/middle of the road, and 25.1% identified as either extremely conservative, conservative, or slightly conservative. The remaining 1.9% reported that they "haven't thought much about it" at all.

Data Exploration

Facebook Use and Online Political Discussion Habits

Respondents were asked how often they discuss politics and public affairs with others, as well as how often they do certain activities on Facebook.

Table 1 displays respondents' self-reported frequency of political discussion, both online and offline. The majority of respondents (61.6%) reported spending less than 1 hour on Facebook on a typical day, while 26.1% reported spending 1-2 hours, 5.2% reported spending 2-3 hours, and 7.1% reported spending more than 3 hours. Additionally, most respondents (36.5%) reported having 100 or less Facebook friends, while 19.4% reported having 101-200 friends, 15.2%

reported having 201-300 friends, 10.9% reported having 301-400 friends, 7.1% reported having 401-500 friends, and 10.9% reported having more than 500 friends.

Table 2 displays respondents' self-reported likelihood frequency of standard online social media behaviors, such as "liking," commenting, or sharing a post. According to the survey responses, these behaviors are relatively rare; for each of the listed behaviors, about half of respondents responded "very rarely." The least common behaviors were encouraging other people to vote and encouraging other people to take action on a political or social issue that is important to you.

Future research should attempt to develop standard operational definitions for online social behaviors, and identify their real-life counterparts. Some behaviors are more straightforward than others. "Liking" a post, for example, means endorsing it. Commenting or sharing behaviors, however, are less understood. Furthermore, social media users may perceive some behaviors, such as encouraging other people to take action on a political or social issue, as more of an investment, or more "risky" than other behaviors. Researchers could use personality batteries to better understand which types of people are more likely to take certain actions online. This research would better identify opinion leaders online, and help refine our understanding of how political and social opinions diffuse through online social networks.

How often do you discuss politics and public affairs with others...?	Response				
	Daily	At least once a week	At least once a month	Less than once a month	Never
In person, by phone call, or by letter	8.1%	37.9%	19.9%	22.7%	11.4%
On Facebook	0.95%	16.6%	17.1%	28.9%	36.5%

Table 1: Self-Reported Frequency of Offline and Online Political Discussion

How often do you...?	Response			
	Very rarely	Somewhat rarely	Somewhat often	Very often
Post links to political stories or articles for others to read	59.0%	24.8%	14.3%	1.9%
Post your own thoughts or comments on political or social issues	48.8%	31.3%	15.2%	4.7%
Encourage other people to take action on a political or social issue that is important to you	59.2%	24.2%	13.7%	2.8%
Encourage other people to vote	60.0%	24.3%	8.1%	7.6%
Repost content related to political or social issues that was originally posted by someone else	53.1%	28.9%	13.3%	4.7%
"Like" or promote material related to political or social issues that others have posted	36.5%	31.8%	21.3%	10.4%

Table 2: Self-reported frequency of standard Facebook social behaviors

Attitudes toward the Ferguson Grand Jury Decision and Perceptions of the Opinion Climate

Respondents were also asked about their attitudes toward the Ferguson grand jury decision not to

indict Officer Darren Wilson, as well as about their perceptions of the opinion climate regarding

the issue. Agreement/disagreement with the decision was split, with 43.8% of respondents

reporting disagreeing either "strongly" or "a little" with the decision.

Table 3 displays respondents' opinions about their perceptions of the opinion climate

surrounding the issue. Respondents were most likely to "agree a little" that their acquaintances

would express the same opinion as they would in both their online and offline communities. A

sizeable portion of respondents, however, remained unsure of the opinion climate within their

communities.

Most of the people…	Response					
	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly	Don't know
In my community would express the same opinion as me about the Ferguson grand jury decision.	6.16%	21.8%	8.06%	31.8%	15.2%	17.1%
I am friends with on Facebook would express the same opinion as me about the Ferguson grand jury decision.	8.57%	18.6%	7.14%	34.3%	18.6%	12.9%

Table 3: Self-Reported Perceptions of the Opinion Climate on the Ferguson Decision

We also collected information about the personal relevance of the topic for respondents, their

perception of knowledge on the topic, and how closely they said to have followed the topic in the

news. Future research should further examine the relationships among these variables and the willingness to express an opinion online.

Hypothesis Testing

Willingness to Like Initial Post

- H1. Respondents will be less willing to endorse a post with which they disagree.

- H2. Respondents' willingness to endorse a post will not differ for no social endorsement vs. social endorsement.

- H3. The effect of social endorsement on respondents' willingness to endorse a post depends on whether the post is counterattitudinal or attitude-consistent.
  - H3a. A high number of "likes" on a counterattitudinal post about the Ferguson grand jury decision will have no effect on willingness to "like" the post.
  - H3b. A high number of "likes" on an attitude-consistent post about the Ferguson grand jury decision will increase willingness to like the post.

We conducted a two-way between subjects ANOVA to compare the effect of agreement and social endorsement on respondents' willingness to like the post. The analysis yielded a significant main effect for agreement/disagreement with the post F (1, 184) = 81.6, p=0.0, such that willingness to like the post was significantly higher for the agreement conditions (M=2.41, SD=1.11) than for the disagreement conditions (M=1.22, SD=.52). The main effect of social endorsement, however, was not significant at F (1, 184) = .160, p=.69. The interaction effect, F (1, 184) = 0.242, p=.62, was also not significant. Thus, respondents were significantly more likely to like posts with which they agreed than those with which they disagreed, regardless of whether the posts were socially endorsed.

Willingness to 'Like' Post by Opinion Group
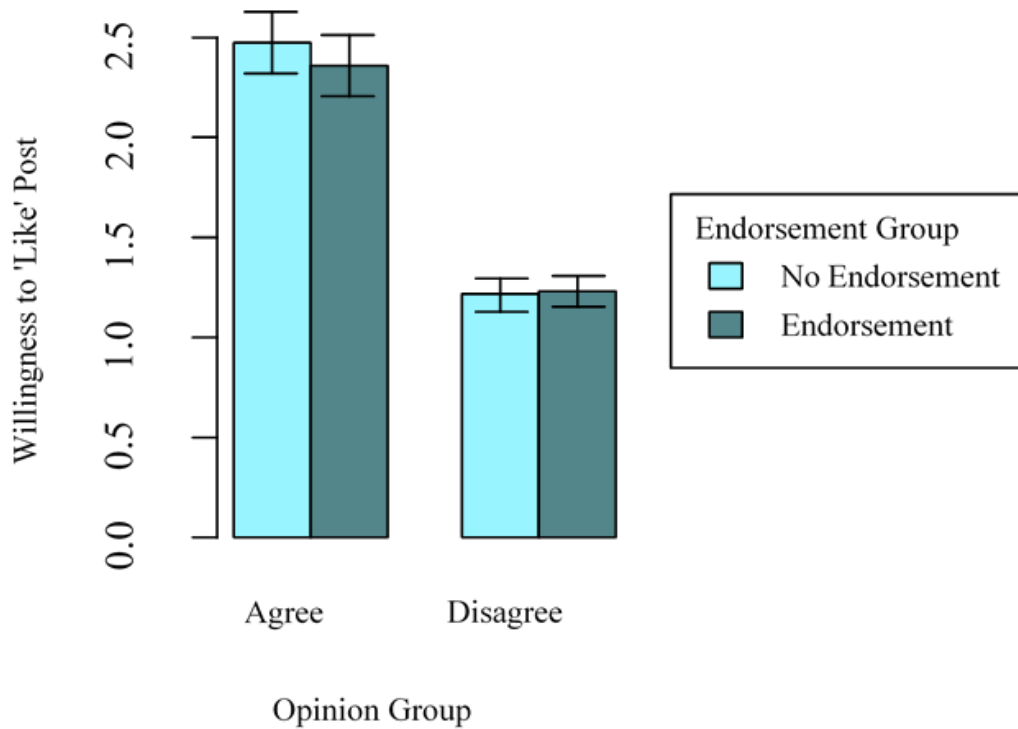
Willingness to Comment on Initial Post

- H1. Willingness to comment on a post will not differ for agreement vs. disagreement.

- H2. Willingness to comment on a post will not differ for no social endorsement vs. social endorsement.

- H3. The effect of social endorsement on willingness to comment on a post depends on whether the post is counterattitudinal or attitude-consistent.

  - H3a. A high number of "likes" on a counterattitudinal post about the Ferguson grand jury decision will decrease willingness to comment on the post.

  - H3b. A high number of "likes" on an attitude-consistent post about the Ferguson grand jury decision will increase willingness to comment on the post.

We conducted a two-way between subjects ANOVA to compare the effect of agreement and social endorsement on respondents' willingness to comment on the post. The main effect of agreement/disagreement with the post, $F (1, 184) = .144$, p=.705, was not significant. The main effect of social endorsement, $F (1, 184) = 1.508$, p=.221, was not significant. The interaction effect, $F (1, 184) = 1.337$, p=.0.249, was also not significant.

**Willingness to Comment on Post by Opinion Group**
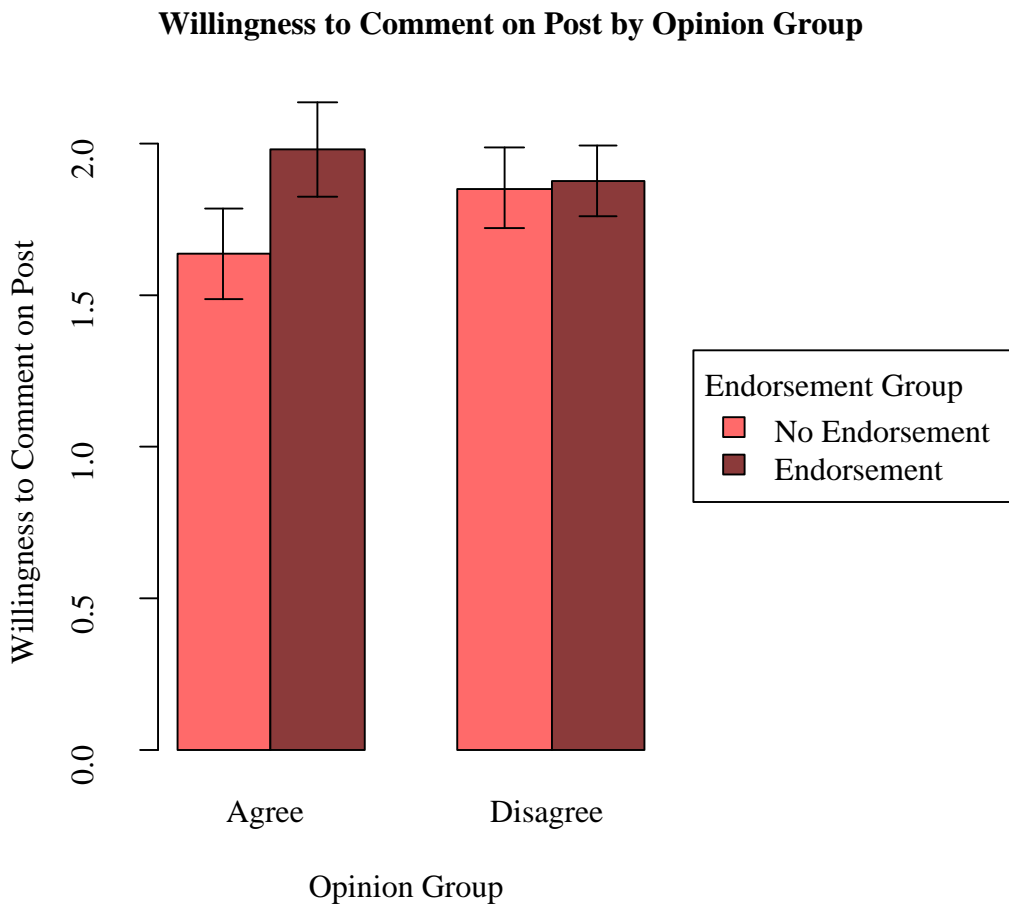
Willingness to Like Follow-up Petition

- H1. Respondents will be less willing to endorse a petition with which they disagree.

- H2. Willingness to "like" the petition will not differ for no social endorsement vs. social endorsement.

- H3. The effect of social endorsement on willingness to "like" the petition depends on whether the post is counterattitudinal or attitude-consistent.

  - H3a. A high number of "likes" on a post linking to a petition with which respondents disagree will have no effect on willingness to like the post.

  - H3b. A high number of "likes" on a post linking to a petition with which respondents agree will increase willingness to like the post.

We conducted a two-way between subjects ANOVA to compare the effect of agreement and social endorsement of the initial post on respondents' willingness to like a post linking to a petition from either the "Support Officer Darren Wilson" or "Prosecute Officer Darren Wilson" campaign. The main effect of agreement/disagreement with the initial post, F (1, 184) = .951, p=.331, was not significant. The main effect of social endorsement of the initial post, F (1, 184) = 1.269, p=.261, was not significant. The interaction effect, F (1, 184) = 1.306, p=.255, was also not significant.

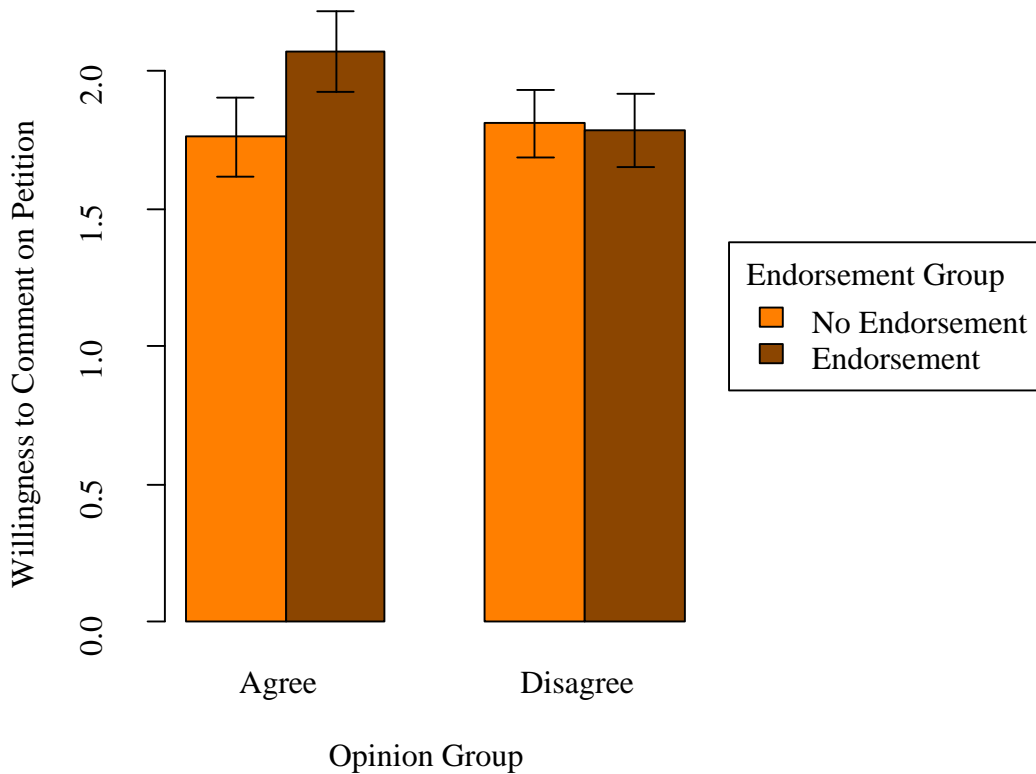**Willingness to 'Like' Follow-up Petition by Opinion Group**
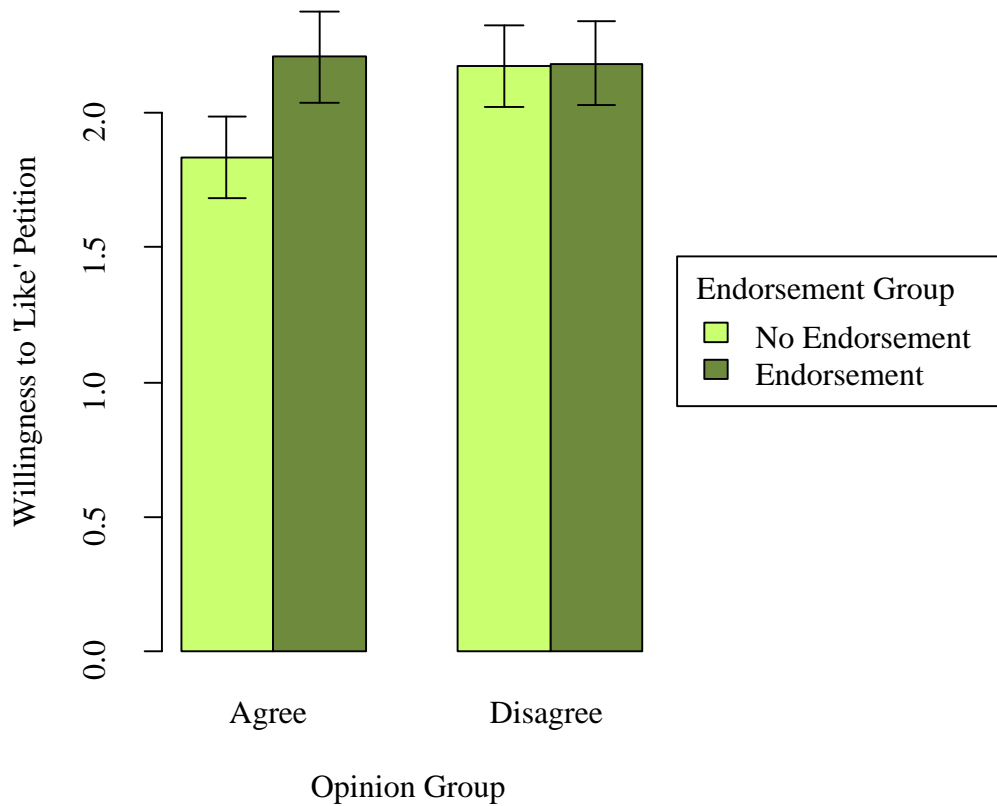
Willingness to Comment on Follow-up Petition

- H1. Willingness to comment will not differ for agreement vs. disagreement.

- H2. Willingness to comment will not differ for no social endorsement vs. social
  endorsement.

- H3. The effect of social endorsement on willingness to comment on a post linking to a
  petition depends on whether the respondent agrees or disagrees with the petition.

  - H3a. A high number of "likes" on a post linking to a petition with which respondents
    disagree will decrease willingness to comment on the post.

- H3b. A high number of "likes" on a post linking to a petition with which respondents agree will increase willingness to comment on the post.

We conducted a two-way between subjects ANOVA to compare the effect of agreement and social endorsement of the initial post on respondents' willingness to comment on a post linking to a petition from either the "Support Officer Darren Wilson" or "Prosecute Officer Darren Wilson" campaign. The main effect of agreement/disagreement with the initial post, $F(1, 185) = .797$, p=.373, was not significant. The main effect of social endorsement of the initial post, $F(1, 185) = .868$, p=.353, was not significant. The interaction effect, $F(1, 185) = 1.434$, p=.233, was also not significant.

Willingness to Comment on Follow-up Petition by Opinion Group
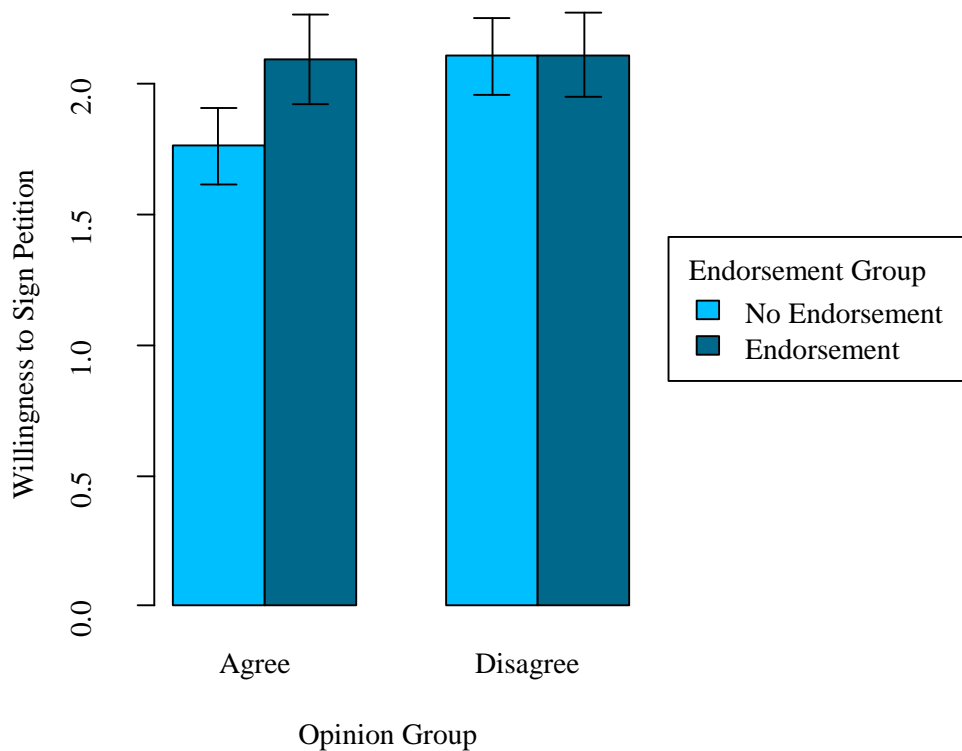
Willingness to Sign Follow-up Petition

- H1. Respondents will be less willing to sign a petition with which they disagree.

- H2. Willingness to sign the petition will not differ for no social endorsement vs. social endorsement.

- H3. The effect of social endorsement on willingness to sign the petition depends on whether the post is counterattitudinal or attitude-consistent.

  - H3a. A high number of "likes" on a post linking to a petition with which respondents disagree will not affect willingness to sign the petition.

  - H3b. A high number of "likes" on a post linking to a petition which respondents agree will increase willingness to sign the petition.

We conducted a two-way between subjects ANOVA to compare the effect of agreement and social endorsement of the initial post on respondents' willingness to sign the petition from either the "Support Officer Darren Wilson" or "Prosecute Officer Darren Wilson" campaign. The main effect of agreement/disagreement with the initial post, F (1, 183) = 1.268, p=.262, was not significant. The main effect of social endorsement of the initial post, F (1, 183) = .930, p=.336, was not significant. The interaction effect, F (1, 183) = 1.071, p=.302, was also not significant.

Willingness to Sign Follow-up Petition by Opinion Group

Willingness to Share Follow-up Petition

- H1. Respondents will be less willing to share a petition with which they disagree.

- H2. Willingness to share the petition will not differ for no social endorsement vs. social endorsement.

- H3. The effect of social endorsement on willingness to share the petition depends on whether the post is counterattitudinal or attitude-consistent.

  - H3a. A high number of "likes" on a post linking to a petition with which respondents disagree will not affect willingness to share the petition.

  - H3b. A high number of "likes" on a post linking to a petition which respondents agree will increase willingness to share the petition.

We conducted a two-way between subjects ANOVA to compare the effect of agreement and social endorsement of the initial post on respondents' willingness to share the petition from either the "Support Officer Darren Wilson" or "Prosecute Officer Darren Wilson" campaign. The main effect of agreement/disagreement with the initial post, $F(1, 185) = .604$, p=.438, was not significant. The main effect of social endorsement of the initial post, $F(1, 185) = 2.354$, p=.127, was not significant. The interaction effect, $F(1, 185) = .143$, p=.706, was also not significant.

Willingness to Share Follow-up Petition by Opinion Group

19
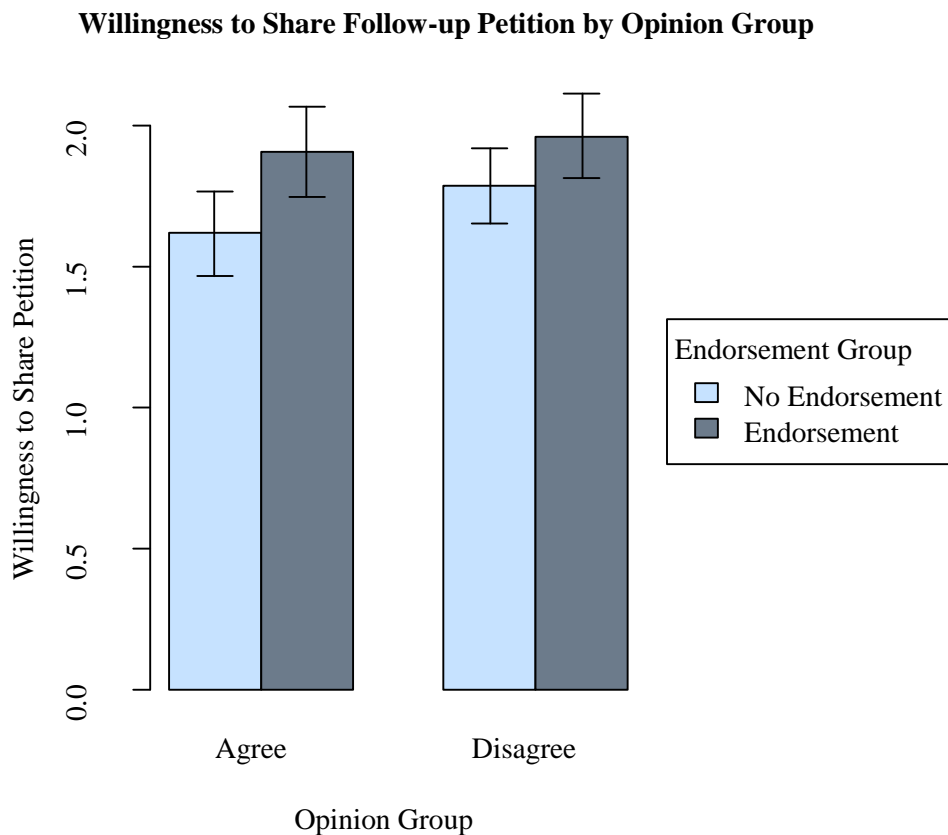
Conclusions

The results from this online survey experiment indicate no significant relationship between social endorsement and willingness to either "like" or comment on a post, or "like," sign, or share an online petition about the Ferguson grand jury decision. We also detected no significant interaction effect between opinion group and social endorsement. With only roughly 50 respondents in each of the four treatment groups, however, we were underpowered to detect underlying true effects. Future research should thus replicate this experiment with a larger sample size, in addition to developing standard operational definitions for online social behaviors as well as assessing relationships between individual personality traits and online opinion expression.

References

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