THE IMPACT OF SOCIAL MEDIA ON INFORMATION PROCESSING: IS CARING SHARING?

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THESIS ABSTRACT

The Impact of Social Media on Information Processing: Is Caring Sharing?

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Social media use is becoming more frequent with people across many ages and cultures. This raises the question of how social media usage affects cognition. Previous research shows that social media may negatively impact task performance across a range of domains. The current studies aim to determine if “shareworthy” experiences themselves may prime social media. In each study, we primed participants to think about social media and included a neutral control condition. After the prime, participants completed a modified Stroop task. We predicted that reaction times on the Stroop task would be slower for social media words after being primed to think about social media. In Study 1, participants read both a set of bizarre stories and a set of stories about finance. In Study 2, participants viewed a set of images similar to those found on social media (the priming condition) and also a set of images of mundane scenes and activities. In Study 3, participants were explicitly primed to think about social media and then took the modified Stroop task. Only Study 2 revealed significant differences in RTs, but in the opposite direction of what was predicted. Limitations and broader implications of these studies are discussed.

Introduction

Social media is becoming a part of most people's daily lives. While its usage is most common in adolescents and teens, 68% of all adults in the United States now use at least one form of social media (Greenwood, Perrin, & Duggan, 2016). With such widespread use, it is important to think about the different effects and implications social media use can have on development and on information processing. Many of these implications are thought to be involved in brain development and cognition. Though studies have started to examine these effects, this is still a new field with relatively little research. Although some studies have found relationships between social media and attention, memory, knowledge, and executive functioning (Wilmer, Sherman, & Chein 2017) and the effect of social media usage on brain functioning has been investigated (Sherman, Payton, Hernandez, Greenfield, & Dapretto, 2016), it is important to further observe and record the many ways in which social media can affect cognition. This study will focus on how mere thoughts about social media can affect performance on a task.

Media and Attention

While the use of social media is fairly new, there have been studies about different types of media over the past few decades. Many of the concepts related to media can be related to social media. The Media Multitasking Index (MMI) is a self-report measure that is used to separate heavy media multitaskers from light media multitaskers (Ophir, Nass, & Wagner, 2009). This measure has been widely adopted to investigate the many impacts of media use (Wilmer et al., 2017). The MMI takes into account the average number of media a person uses simultaneously (Ophir et al., 2009). Examples of media included in this index would be listening to music, text messaging, watching television, and playing computer games. Studies have been conducted to determine if there are any differences in cognitive abilities in heavy media multitaskers and light media multitaskers. Some evidence suggests that those who report heavy media multitasking have a more difficult time filtering out irrelevant information during tasks (Ophir et al., 2009). Heavy social media users appear to be less effective at focusing on the task at hand when faced with multiple forms of media. Heavy media multitaskers may be more focused on environmental cues and information than on the task at hand (Wilmer et al., 2017). Heavy media multitaskers also have been shown to perform worse on a task when distractor stimuli were presented (Moisala et al., 2016). Although people tend to believe in their ability to multitask, attempting to perform two tasks at the same time tends to decrease task performance. An important limitation to keep in mind with the MMI is that it is calculated by self-report responses that weigh each potential form of media multitasking the same way (Wilmer et al., 2017). This means that media requiring less attentional demands are weighted the same as media requiring more attentional demands. While the MMI is still useful, those who fall in the middle of the spectrum may not follow the trends of either the heavy media multitaskers or the light media multitaskers.

Media and Executive Functioning

Exposure to different forms of media also has been found to affect executive functioning. Abramson and colleagues (2009) have found that adolescents who reported more cell phone activity per week had a slower reaction time for Stroop word naming tasks. Slower reaction times in the Stroop task show a lack of the ability to filter out distracting stimuli. This effect was found for both cell phone calls and text messages. This greater cell phone use also was found to have a speed-accuracy tradeoff for higher level cognitive tasks. Although response times were quicker, the accuracy of the responses decreased. Some studies have found that smartphone usage is positively related to intuitive thinking and negatively related to analytic thinking (Barr, Pennycook, Stolz, & Fugelsang, 2015). It is thought that people leave that analytic thinking to their smartphones and focus on natural, instinctive thinking themselves. Brooks (2015) found that social media usage led to lower performance on primary tasks. This is another example of how multitasking decreases performance on each task involved. The effects of using different forms of media while learning has been investigated. Hollis and Was (2016) investigated mind wandering and its effect on learning performance. Mind wandering probes related to social media and text messaging were presented while participants completed complex tasks. Mind wandering was found to be negatively related to performance and it was found that many subjects thought about social media and technology while mind wandering. It is important to note that not all studies have shown negative effects of social media and media multitasking. Some studies found positive relationships between heavy media multitasking and cognitive abilities or even no relationship at all (Alzahabi & Becker, 2013; Lui & Wong, 2012; Ralph, Thomson, Seli, Carriere, & Smilek, 2015). However, the majority of the research thus far has found that media multitasking and social media use negatively predicts cognitive function.

Social Media and Academic Performance

Aside from its effects on executive functioning, social media has been shown to have an effect on academic performance. Lau (2017) found that social media multitasking was negatively related to academic performance. In addition, Paul, Baker, and Cochran (2012) found a negative relationship between time spent on online social networks and academic performance. This is believed to be influenced by attention span. The greater the attention deficit, the greater the amount of time was spent on online social networks (Paul et al., 2012). There is also evidence that people who spend more than an hour a day on Facebook perform significantly worse on free recall tests (Frein, Jones, & Gerow, 2013). This study did not allow any participants to participate in any type of multitasking during the study. The only difference in groups was the degree to which the participant used Facebook. Facebook use was also found to be a negative predictor of overall GPA (Junco, 2012). This study also found that posting updates was more strongly related to lower GPA than the frequency of other activities on the site (Junco, 2012). A study of college students found that students in the United States who spent more time on social networking sites had lower overall GPAs, an effect that was moderated by multitasking while studying (Karpinski, Kirschner, Ozer, Mellot, & Ochwo, 2013). Aside from affecting GPA, studies have shown that students who show higher levels of media multitasking performed worse on standardized tests in math and English (Cain, Leonard, Gabrieli, & Finn, 2016).

Neuroscience of Social Media

While much research has been conducted on the effects of media on task performance and executive function, some studies have been done to discover the neuroscience behind using social media. It is believed that social media helps humans to satisfy the needs of social cognition, self-referential cognition, and social rewarding processing (Meshi, Tamir, & Heekeren, 2015). Social media has been shown to activate areas of the brain associated with sharing and receiving information, sharing information about the self, and social rewards (Meshi et al., 2015). Sherman and colleagues (2016) also have found that social media activity activates brain regions linked to reward processing, social cognition, imitation, and attention. In another study investigating the Media Multitasking Index, Loh and Kanai (2014) found that heavy media multitaskers had decreased gray matter in the anterior cingulate cortex. This area of the brain is linked to cognitive control which could help explain the inability to filter out distractions. However, this research is strictly correlational, and more research needs to be done to determine causality. Along with poorer performance on a given task, when influenced by distractor stimuli heavy media multitaskers also show increased activity in the prefrontal cortex (Moisala et al., 2016). This area is known to be implicated with attentional control.

Interference and the Stroop Task

Different tasks and tests have been used in research to discover effects of social media usage on performance. One such task is the Stroop task. It is a well-known phenomenon that people have a difficult time performing more than one task at the same time. There are many theories as to what causes interference in these tasks. Some of these theories involve shared mental resources, task-switching, temporal uncertainty, attention and automaticity (Pashler, 1994). The most common demonstration of dual-task interference is in the Stroop task. In the classic Stroop task, the participant must identify the color of the ink in which a word is written. Participants take longer to name the color in the incongruent trials (e.g. the word BLUE printed in green ink) than in the congruent trials (e.g. the word GREEN printed in green ink) or the control trials (e.g. the word BOX printed in green ink). Another version of this task is the emotion Stroop task. In this version of the task, emotion words are in varying colors and the participant must once again name the color of the ink. Evidence has shown that people with various disorders have a slower reaction time in naming the color of disorder-relevant words and that general reaction time is slower for naming the color of negative words (Cothran & Larsen, 2008). It is said that the self-relevance or negativity of the words interferes with naming the color of the ink. Thinking about the meaning of the words impedes the ability to focus on the task at hand. This task, whether in its original form or the modified emotion form, demonstrates the difficulty in responding to certain stimuli while ignoring distractor stimuli (Zysset, Müller, Lohmann, & Von Cramon, 2001). People are unable to always filter out irrelevant information in a task (MacLeod & MacDonald, 2000). This is similar to the problems found in heavy media multitaskers.

Sparrow, Liu, and Wegner (2011) experimented with interference related to the Google effect, or digital amnesia, in a modified Stroop task. It was theorized that when people think about a topic then they will show slower reaction times on a modified Stroop test for words about the topic. Attention and internal encoding would be focused on the topic and that information would be more accessible than the color naming task. In this case the participants were primed with general-knowledge questions in an easy and a difficult question condition. The difficult questions were believed to make people automatically think about computers and search engines. Indeed, in a modified Stroop task, participants had slower reaction times for computer words than for general words after having been asked difficult versus easy trivia questions. Thus, merely being asked a difficult question primed participants to think about computers and therefore interfere with the speed at which they could identify the color of the word.

The Current Study

The study conducted by Sparrow and colleagues aimed to show that people use the internet as a transactive memory source (2011). It was suggested that people rely on technology such as search engines when they need to find out information, and therefore immediately think of the concept of search engines when asked difficult questions. This priming of the concept of search engines was believed to slow responses to search engine terms on a modified Stroop task compared to control words. If this phenomenon occurs with search engine terms, it may be that the effect could be found when trying to prime thoughts of other types of technology that people rely on for information processing and sharing. If priming participants to think about computers in the Sparrow et al. study resulted in slower reaction times for computer related words, would using similar methods but instead priming participants to think about social media result in slower reaction times for social media related words? It is clear that social media is involved in many aspects of life and that it may be affecting brain activity. Media multitasking studies have demonstrated an inability to filter out irrelevant stimuli during a task that is similar to Stroop interference. If thoughts of social media disrupt a person's ability to focus on the task at hand, this could lead to things such as car accidents or lack of efficiency on everyday tasks. The knowledge that social media can have these practical implications could lead to stricter social media policies at places such as schools and places of business. The current studies test whether priming people to think about social media affects their internal coding and reaction time on a modified Stroop task. More specifically it is hypothesized that those who are primed to think about social media will have slower reaction times on a modified Stroop task for social media terms than for general terms after being exposed to material they may normally share on social media. The current study also investigated whether thoughts of social media are constantly interfering with internal coding. The second hypothesis is that participants will have slower reaction times on a modified Stroop task for social media terms than for general terms whether they are specifically primed to think of social media or not. This effect might not be as salient as in the social media priming effect, but a significant effect is still predicted.

Study 1

Method

Participants

Study 1 consisted of 60 undergraduate students enrolled in psychology courses at Rutgers University Camden. The participants must be at least 18 years old to take part in the study. This is a convenience sample using the human subject pool. The participants were given course credit for participating. Although this is a convenience sample, college students are a good population to use for this study because of their frequent use of social media. As of November of 2016, 86% of adults between the ages of 18-29 were using at least one social media site (Pew Research Center, 2017).

Procedure

The participants were recruited using the Experimetrix scheduling system. The experiment used a slight degree of deception in that social media was not be mentioned at the outset. The study was listed as an experiment focusing on attention. The participants picked a time slot in which they would take part in the experiment to receive credit for class. They were instructed to come to a psychology lab to complete the experiment. When they arrived at the lab, the participants filled out the informed consent form and demographics form. The participants were told that if they were not comfortable with the study that they were able to leave free of penalty and would still receive their course credit. The contact information for the principal investigator was made available as was a number for the Rutgers Camden counseling center that the participant could call in the event that the study made them experience an adverse event. They were asked what questions they had about the experiment and those questions were answered without revealing that the study is about social media.

The experiment was a within-subjects study with two conditions. The order in which these conditions occurred during a session was counterbalanced via an alternating schedule. Each odd number participant received the priming condition first and each even number participant received the control condition first. In the control condition, the participants received a packet including 5 short stories about finance. The participants read through the packet and rated how much they enjoyed each story on a scale from 1 to 5 with 1 being "not interesting to me at all" and 5 being "very interesting to me." In the experimental, or social media priming, condition they received a packet including 5 short, bizarre stories from around the world. These stories were found on the internet. They also rated these stories on a scale from 1 to 5 with 1 being "not interesting to me at all" and 5 being "very interesting to me." The thought behind the choices in control stories versus social media priming stories is that people will be more likely to be uninterested in the stories about finance and therefore less likely to think of sharing them and ways to share them, such as on social media. Factors such as how surprising or interesting something is are positively correlated to how much a piece of content will be shared online (Berger & Milkman, 2012). With the bizarre stories, the participants might find them interesting and it could lead them to want to share them with others, activating their thoughts of social media. Although the bizarre stories are supposed to prime participants to think about social media, there was a chance that this would not happen. If this is the case, then we would most likely not see a significant difference between conditions in the results.

After the participants finished rating their packet, they then moved on to the modified Stroop task. This task measures reaction time. In this modified version, each word is randomly presented many times. Reaction time has been found to be a valid measure for many different versions of the Stroop task. In the Stroop task the participant was required to identify the color of the text (green or red) that each word presented was written in as quickly as possible. If the word appeared in green ink, the participant would use their left index finger to press a key indicated on the keyboard with a green sticker. If the word appeared in red ink, the participant would use their right index finger to press a key indicated on the keyboard with a red sticker. This modified Stroop task tested color-naming reaction times of social media terms (Twitter, Facebook, Snapchat, Instagram) and general (control) terms (backpack, swimmer, etc.). The control words were matched with the social media words based on word length and number of syllables. There were 128 trials. Of these trials, 64 included social media words and 64 included control words. The participants were read the instructions as they followed along silently with the instructions that were printed on a piece of paper. After the participant completed the first condition they completed a Sudoku puzzle as a distractor task. The distractor task was included to wane possible spill-over effects from the first to the second condition. The participant had up to 10 minutes to complete as much of the puzzle as possible. The participant then read the stories from the second condition and completed the same modified Stroop task again.

Once the Stroop task was complete, the participants filled out a social media questionnaire indicating their social media habits. This questionnaire included information about which social media networks the participant used and how often they used them. It asked if the participant uses Facebook, Twitter, Instagram, and Snapchat. The participants indicated how often they use each of these platforms on a scale ranging from 'Never,' 'Once a week,' 'A few times a week,' 'Every day,' and 'Multiple times a day.' This type of self-report should be reliable considering how important social media is expected to be to the participants. Each participant should have had a relatively accurate idea of how often they use each of these platforms, if they use them at all. This questionnaire should be valid because social media is so common that participants would not have had a reason to inaccurately report the frequency in which they use these platforms. The participants were then debriefed and told the study was actually about social media priming and its effects on cognition and reaction time.

Materials

The stories were provided in two separate packets given to the participant at the beginning of each condition. The Stroop task was completed on a computer with MATLAB. This modified version of the Stroop task is being created specifically for this study. This program recorded reaction times for color-naming on all trials. These reaction times were used for data analysis. A medium-difficulty Sudoku puzzle was provided to each participant.

Results of Study 1

To analyze the data, we computed a composite social media RT value for each participant in each condition. To do so, we identified the two most utilized social media platforms for each participant and used only RTs for the names of these social media. We then compared the RTs for those cases against the RTs for control words for both the control and the experimental condition (the interesting stories). Results are shown in Table 1. The results failed to show a significant difference (M = .457 s, SD = .09 for control condition and M = .457 s, SD = .09 for the experimental condition); $t(58) = .051$, $p > .05$.

Study 2

Results from the social media questionnaires revealed that the most commonly used social media platforms (such as Instagram) contain more visual imagery than written words or stories. This study focuses on more visual stimuli as opposed to written text as in Study 1. The participants viewed two sets of images and videos. One set consisted of types of pictures often found on social media and one set consisted of pictures of mundane scenes and activities. It was expected that the participants would rate that they would be more likely to share the priming images than the control images and therefore would think about the concept of social media more. Another difference in this study is that instead of viewing all the stimuli first and then completing the entire Stroop task, the participants viewed one image at a time, rated how likely they would be to share the image if they took it themselves, and then completed 16 trials of the social media Stroop task. We believe that the expected effect will not be long-lasting and feel that short sets of Stroop trials after each picture would capture the effect more so than a long set of Stroop trials after the entire set of pictures would.

Method

Participants

Study 2 consisted of 62 undergraduate students (16 males, 46 females) enrolled in psychology courses at Rutgers University Camden. The mean age of the participants was 19.45. This is a convenience sample using the human subject pool. All participants were given course credit for participating.

Procedure

Participants were recruited using the Experimetrix scheduling system as in Study 1. This study also used a slight degree of deception in that social media was not mentioned in the study description. The study was listed as an experiment focusing on attention. Students who took part in Study 1 were unable to take part in Study 2. The participants picked a time slot in which they would take part in the experiment to receive credit for class. They were instructed to come to a psychology lab to complete the experiment. When they arrived at the lab, the participants filled out the informed consent form and demographics form. The participants were told that if they were not comfortable with the study that they were able to leave free of penalty and would still receive their course credit. The contact information for the principal investigator was made available as was a number for the Rutgers Camden counseling center that the participant could call in the event that the study made them experience an adverse event. They were asked what questions they had about the experiment and those questions were answered without revealing that the study is about social media. The experiment was broken up into two blocks. The order in which these blocks occurred during a session was counterbalanced via an alternating schedule. Each odd number participant received the social media priming condition first and each even number participant received the control condition first. The priming condition included 15 pictures similar to those found on social media while the control condition included 15 pictures of mundane scenes and objects. The participant saw a picture and then rated how likely they would be to share that picture if they had taken it themselves on a 9-point Likert Scale. They then completed 16 trials of the social media Stroop task after each of the 15 pictures. As in Study 1, the words would be presented in either green or red ink. If the word appeared in green ink, the participant would use their left index finger to press a key indicated on the keyboard with a green sticker. If the word appeared in red ink, the participant would use their right index finger to press a key indicated on the keyboard with a red sticker. Participants completed 480 total trials. Of these trials, 280 included social media words and 280 included control words. Reaction times for each response were recorded as in Study 1. All instructions appeared on the computer screen.

Once the first block was complete, the participants completed a Sudoku puzzle as a distractor task. As in Study 1, the purpose of the task was to wane any spill-over effects from the first to the second condition. The participant had up to 10 minutes to complete as much of the puzzle as possible. The participant then continued to the second block of pictures. They went through the same process as in the first block but with the other set of pictures. Once the second block of the experiment was complete, the participants filled out a social media questionnaire indicating their social media habits. The same questionnaire from Study 1 was used. The participants were then debriefed and told the study was actually about social media priming and its effects on cognition and reaction time.

Materials

The images were shown using a program on MATLAB. The Stroop task was completed on a computer with MATLAB. This modified version of the Stroop task is being created specifically for this study. This program records reaction times for color-naming on all trials. These reaction times were used for data analysis. A medium-difficulty Sudoku puzzle was provided to each participant.

Results of Study 2

A manipulation check was conducted comparing sharing ratings between control images and priming images. A paired-samples T-test revealed that the control images (M = 2.07, SD = 1.27) were rated as significantly less likely to be shared than the social media priming images (M = 8.478, SD = .85); $t(60) = -38.104$, $p < .01$.

Each individual image was rated based on how likely the participant would be to share the image if they had taken it themselves. The images were separated into categories by interest based on these ratings. The low interest images, or unlikely to share images, were those in the first quartile of ranking, or the ¼ of pictures rated as the least likely to be shared by that participant. The high interest images, or likely to share images, were those in the fourth quartile of ranking, or the ¼ of pictures rated as the most likely to be shared by the participant. The first and fourth quartile of images based on participant rating were used to allow for individual differences in image sharing interest. The decision to use the first and fourth quartile of data was made to ensure that possible RT differences would be based on images that were deemed to be sufficiently different.

The words in the social media Stroop task were separated into categories for each participant. These categories were relevant social media, control social media, and control. The results from the social media questionnaire that each participant filled out determined the word types for each participant. Relevant social media terms included the social media terms that the participant reported they did use. Control social media terms included the social media terms that the participant reported they did not use. Control words included the non-social media terms.

Reaction times were calculated for each word type. Error trials (less than 2%) and outliers (mean RT ± 2 standard deviations within each word type) were removed before further analysis. A 2 (image interest: low/high) x 3 (word type: relevant social media/control social media/ control/) repeated measures ANOVA was conducted on the reaction times. Results are shown in Tables 2-4. There was no significant main effect of image interest, $F(1,60) = 1.862$,
$p > .05$. There was also no significant main effect of word type, $F(2, 120) = 1.312$, $p > .05$. The interaction between image and word type was significant, $F(2, 120) = 4.919$, $p < .01$. In the low interest (unlikely to share) images condition, participants were slowest to respond correctly to relevant social media words and fastest to respond correctly to control words, although these differences were not significant. However, in the high interest (likely to share) images condition, participants were significantly slower to respond to control words than to control social media words, $t(60) = -2.039$, $p < .05$. (See Figure 1 and Figure 2). Neither control words nor control social media words significantly differed in reaction time from relevant social media words. These results are the opposite of what was hypothesized. From these data, it appears that there was less interference from social media words than control words in the likely to share condition.

Study 3

After not finding the expected results when attempting to implicitly prime the concept of social media, we decided to try to explicitly prime the concept of social media and see if we could find the effect. Instead of exposing participants to materials that we believed would prompt thoughts of social media, participants would instead be asked questions about their social media habits before taking the modified Stroop task. In this task words (social

Method

Participants were again recruited through Experimetrix. Participants were given course credit for participating. They came in to the lab and after completing the informed consent and demographics forms, completed the social media questionnaire. This was meant to explicitly prime the participants to think about social media. After they filled out the social media questionnaire, the participants completed the modified Stroop task. When they completed the Stroop task, the participants were debriefed and informed of the purpose of the study. 20 participants were recruited for this study. 19 participants were retained for data analysis.

Results of Study 3

A paired- samples T-test revealed no significant differences between mean reaction times for control words (*M*= .474 s, *SD*= .10) and social media words (*M*= .461 s, *SD*= .11743), $t(18)= 1.600$, $p > .05$ (See Table 5). To ensure that outliers were not skewing the results, a paired-samples T-test between median reaction times was also conducted but still did not reveal significant differences between control words (*Mdn*= .436 s, *SD*= .10) and social media words (*Mdn*= .441 s, *SD*= .11), $t(18)= -.934$, $p > .05$ (See Table 6). Even when explicitly primed to think about social media, reaction times were not significantly slower for social media words.

Discussion

This study was aimed to conceptually replicate the findings from Sparrow and colleagues (2011) relating to how technology may be impacting how people process information. While the methods of this study were modeled closely based on the Sparrow and colleagues' study, we were unable to find the results that we had expected. It was hypothesized that people who are primed to think about social media will have slower reaction times on a modified Stroop task for social media terms after being exposed to material that they may normally see on social media. This concept was explored through textual stimuli (Study 1) visual stimuli (Study 2), and then explicitly priming participants to think about social media with a social media questionnaire. However, the results of this study revealed either non-significant differences (Study 1 and Study 3) or differences in the opposite direction of what was hypothesized (Study 2).

One possible reason that this occurred is that the social media priming manipulation was not effective. The social media priming packet of stories in Study 1 was rated as more interesting than the control packet of stories, and the social media priming pictures were rated as more likely to be shared than the control pictures. Even further, in Study 2 participants' ratings of the images were used to separate them into likely to be shared and unlikely to be shared groups for each participant. Although this seemed to support that the social media priming manipulation worked, perhaps stories being interesting or images being rated as likely to share do not prime people to think of social media in the way that we expected. It may be that there is a better manipulation that would prime this concept, therefore making participants slower to respond to those social media words on the Stroop task.

Another possibility is that some of the control words used in the modified Stroop task could have affected the results. The social media priming pictures included images of people on vacation and scenic views. Many of these pictures involved travel. Both "swimmer" and "backpack" were used as control words. People may associate these words with traveling and therefore may be slower to respond to them as well, making them poor choices for control words. A future study could be more cognizant of word choice in relation to picture choice.

It is also possible that a study could be more successful if it is set up in a way that mimics actual social media usage. If a person is given a device that has some sort of social media- type application on it where the participants are made to feel as if they are rated people's actual posts, this may be a better manipulation that would prime thoughts of social media.

It could also be that the expected effect simply does not exist. Although this effect was found in regard to the "Google effect", perhaps it does not transfer over to the concept of social media. It could be that social media is not yet as heavily relied upon as search engines and other technologies and therefore is not immediately primed in the same way. Also, while not finding the differences that were hypothesized, a significant interaction between image interest and word type did appear. In the likely to share image condition, participants were significantly slower to respond to control words than to control social media words. Perhaps there is something about the particular control words used in this modified Stroop task that triggered the slowed reaction time compared to other words.

As previously mentioned, this study was conceptually based on Sparrow and colleagues (2011), in which they found that people primed with difficult questions showed slower reaction times for computer (search-engine) words on a modified Stroop task. These authors claimed that the difficult questions primed people to think of search-engines and therefore interfered with the task of choosing the color of the presented words. Over the course of the current studies, the work by Sparrow et al. (2011) was one of the evaluated studies in the context of the replicability of social science experiments that were published in *Nature* and *Science* between the years 2010 and 2015 (Camerer et al., 2018). This report found errors in data reporting and analysis and found that many facets of the Sparrow et al. study failed to replicate. With this piece of information, it is plausible to believe that the methodology of the study and the predicted results were not to be expected as we believed. This highlights the importance of being transparent with the methodology, results, and raw data in studies.

Although there was an indication that participants slowed down after rating high versus low interest images (Study 2), the results did not show a significant effect. In addition, any slowing did not appear to be specific to relevant social media terms. However, internet and social media is becoming more popular as time goes on. There have been published effects of social media on information processing and cognition, and although significant results were not found here, there is much more to be learned about how technology affects the way people live their lives. Further research should be done to explore how social media and the increasing availability of technology modifies everyday social and cognitive experiences.

Table 1. Mean reaction time (s), standard deviation, and standard error for relevant social media words as a function of condition.

Condition	Reaction Time (s)	Standard Deviation	Standard Error
Social Media Priming	.457	.09	.012
Control	.457	.09	.012

Table 2. Mean reaction time (s), standard deviation, and standard error as a function of image interest.

Image Interest	Reaction Time (s)	Standard Deviation	Standard Error
Unlikely to Share	.444	.081	.010
Likely to Share	.454	.105	.014

Table 3. Mean reaction time (s), standard deviation, and standard error as a function of word type.

Word Type	Reaction Time (s)	Standard Deviation	Standard Error
Relevant Social Media	.451	.097	.012
Control Social Media	.444	.088	.011
Control	.452	.092	.012

Table 4. Mean reaction time (s), standard deviation, and standard error as a function of image interest and word type.

Image Interest	Word Type	Reaction Time (s)	Standard Deviation	Standard Error
Unlikely to Share	Relevant Social Media	.450	.096	.012
	Control Social Media	.441	.077	.010
	Control	.440	.081	.010
Likely to Share	Relevant Social Media	.451	.107	.014
	Control Social Media	.448	.110	.014
	Control	.463	.112	.014

Table 5. Mean reaction time (s), standard deviation, and standard error as a function of word type.

Word Type	Mean Reaction Time (s)	Standard Deviation	Standard Error
Relevant Social Media	.461	.113	.027
Control	.474	.120	.027

Table 6. Median reaction time (s), standard deviation, and standard error as a function of word type.

Word Type	Median Reaction Time (s)	Standard Deviation	Standard Error
Relevant Social Media	.441	.113	.026
Control	.436	.104	.024

Figure 1. Mean reaction time on accurate Stroop trials after Unlikely To Share images as a function of word type.

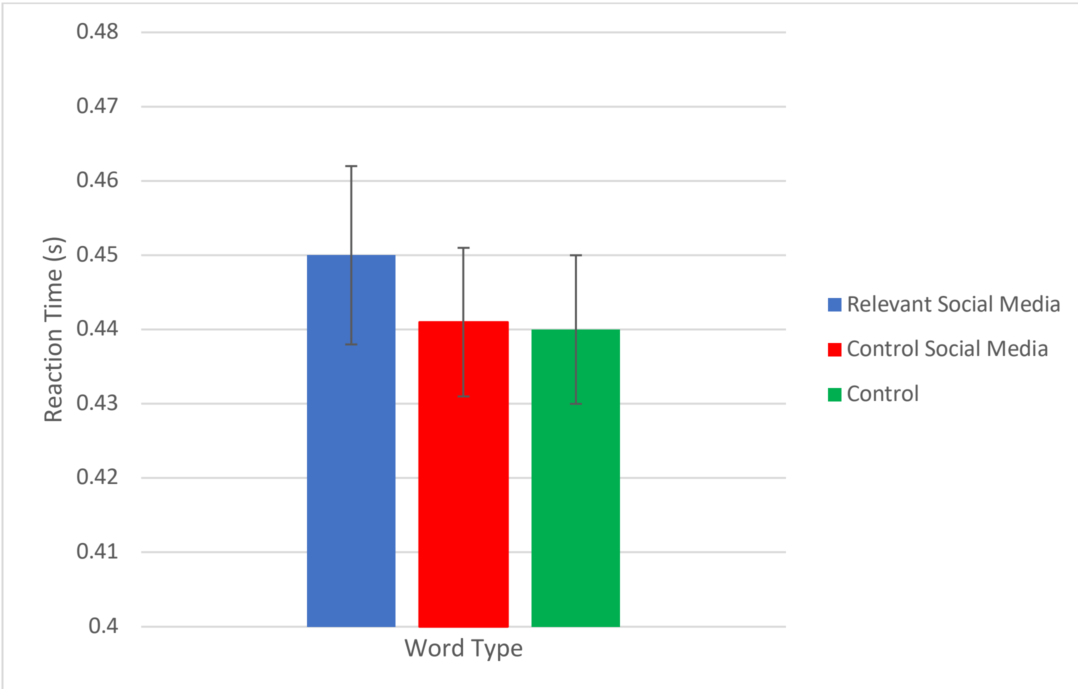
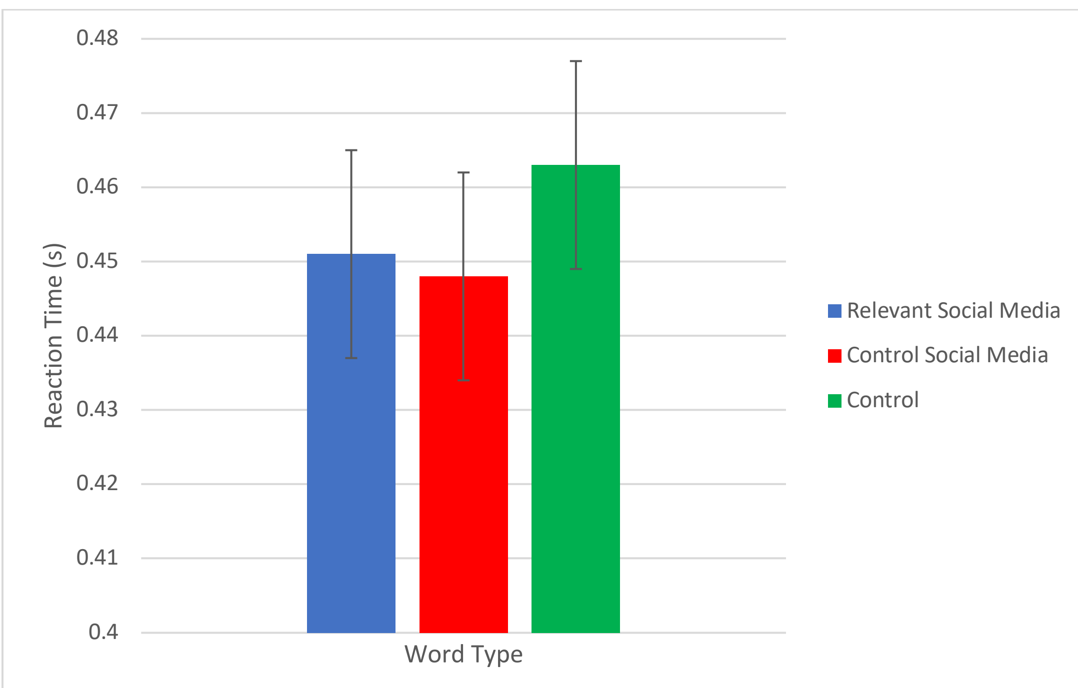


Figure 2. Mean reaction time on accurate Stroop trials after Likely to Share images as a function of word type.



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