



LUNDS
UNIVERSITET

DEPARTMENT of PSYCHOLOGY

How Does the Experience of Social Power Affect the Amount of Facebook Activity?

Ray Pohjanheimo

Master's Thesis (30 hp)
Spring 2017

Supervisor: Åse Innes-Ker

Abstract

Our study sought to reveal whether social power affects Facebook behaviour in a similar manner that it affects behaviour in the real world. We predicted that participants in the high power condition would be more active on Facebook compared to both low power and control conditions, while low power participants would be less active on Facebook. Participants in the experimental condition went through a double manipulation of heightened or lowered social power and were instructed to login on Facebook and use it for five minutes afterwards. A self-report questionnaire was presented after the Facebook task in order to measure the amount of messages, comments, posts, reactions, and shares participants made on Facebook. The total amount of Facebook activity was compared between the groups, however, no significant results were discovered. Methodological limitations and suggestions for future research are discussed.

Keywords: power, social psychology, social media, behavioural activation, facebook

How Does the Experience of Social Power Affect the Amount of Facebook Activity?

“The FAKE NEWS media (failing @nytimes, @NBCNews, @ABC, @CBS, @CNN) is not my enemy, it is the enemy of the American People!”

- Donald J. Trump (2017)

The current president of the United States has an active presence on the social media platform Twitter. Whether or not his sources or tweets reflect reality is an issue on its own, however, one may ask how does his powerful position influence what he says on social media? Social power makes people approach, behave in a disinhibited manner, pay more attention to rewards, and feel good. Powerful people disregard rules, act inappropriately, treat people as means to their own ends, and all in all, walk to the beat of their own drum. A plethora of evidence (see for example Keltner, Gruenfeld, & Anderson, 2003) backs up these brash claims about people with power that many may have felt are entirely accurate but have not had the means to prove. In everyday life one may notice bosses and informal leaders carry themselves in a different manner, speak directly, and act more liberally in their social environment - sometimes to the dissatisfaction of other people. What powerful people gain in confidence and effortless decision-making, they lose in understanding other people's perspectives. They may act out in their self-interest and later discover that other people do not share their sentiment. While power makes people take more for themselves, it also makes them contribute more to common goals. Power has many consequences - some good, some bad. What characterises power fundamentally however, is that it makes people act.

In our current times, people are increasingly engaged in social media with a projected one third of the population using social media worldwide by the end of the year 2016 (eMarketer.com, 2016). People holding powerful positions in office, as leaders of corporations, and as widely followed celebrities are a part of this shift towards social media presence. They are active on twitter, Facebook, and a multitude of other social media platforms, communicating directly and indirectly to millions of people worldwide. While their vast following arguably affects what they communicate, how does their prior sense of power affect what they post and how often? Much of real life human behaviour translates to behaviour online in different ways, as we come to witness shortly, giving us an exciting predicament on how power affects

behaviour on social media. Given how power makes people disinhibited, tend to approach, and take action, we investigate how it might impact social media behaviour through the use of previously used methods of manipulating the experience of power and measuring its effect on self-reported Facebook behaviour during the experiment. The main research question we seek to answer is does the experience of social power increase engagement in social media behaviour, Facebook in our specific scope.

Theoretical Background

Facebook Behaviour. The study of social media behaviour is relatively new, seeing that the emergence of social media has only been evident within the past decade. According to Boyd and Ellison (2007), a social network site, such as Facebook, is characterised by profiles, identifying other users, and being able to make connections. They further argue that social network sites “mirror, support, and alter known everyday practices” (Boyd & Ellison, 2007). Of various social network sites, Facebook remains the largest in most of the world (eMarketer.com, 2016). Studies on the relation of Facebook and cultural differences (Brailovskaia & Bierhoff, 2016; Vasalou, Joinson, & Courvoisier, 2010), personality factors (Ross et al., 2009; Weiqin et al., 2016), self-esteem and narcissism (Brailovskaia & Bierhoff, 2016; Christofides et al., 2009; Gonzales & Hancock, 2011; Mehdizadeh, 2010), and social connectedness (Sheldon, Abad, & Hinsch, 2011) have been previously researched, giving us insight on the methodology and past findings in the field. We will shortly discuss some of these findings in relation to our present research.

As a preface to the motivations behind Facebook use, Nadkarni and Hofmann (2012) constructed a literature review based model to explain what drives people to use Facebook. They proposed Facebook use is determined by the need to belong and the need for self-representation, mediated by a number of personality, demographic, and cultural factors. Karapanos, Teixeira, and Gouveia (2016) further studied the need fulfilment of different social media platforms, Facebook and WhatsApp. They prompted participants to recall a recent experience - either satisfying or unsatisfying - on one of the assigned platforms. Afterwards, the participants were asked to rate how they experienced the fulfilment of the specific needs, namely, competence, relatedness, pleasure, security, self-esteem, and popularity. Finally, they were asked to rate their intensity of use of the platform in question. From the quantitative and qual-

itative results of these measures, their main findings were that Facebook users' most satisfying aspects of the platform were its capabilities for expressing one's self, while WhatsApp was related to more intimate conversations.

Culture and demographical differences in Facebook use were studied by Vasalou, Joinson, and Courvoisier (2010). They drew comparisons between American, British, Italian, Greek, and French Facebook users and discovered that for example, French Facebook users used the social media platform the least out of the groups, as well as deeming status updates and photos as less important for themselves. British users valued photographs the most out of the groups and Italians preferred games the most in comparison to the other nationalities. These findings suggest that culture plays a role in the way people choose to use social media, as well as demonstrating methods of studying preferences in Facebook behaviour.

Ross and his colleagues (2009) found support for the positive relation between extraversion and Facebook use. Further research by Weiqin and his colleagues (2016) studied the relation of extraversion and social capital on Facebook. They used an earlier definition of social capital from Woolcock (2001), which essentially described it as a social resource of various benefits that people can obtain from relationships. They sought to uncover if extraversion is related to gaining social capital on Facebook and how online communication behaviour mediate the pattern in question. Their most important finding showed that extraversion was positively correlated with maintaining behaviours, which in turn were greatly related to both bridging and bonding social capital. The way extraversion is evident in social interaction outside social media seems to show similar patterns on Facebook as well, according to past research.

Christofides and her colleagues (2009) found a relation between the desire for popularity and Facebook use. Perhaps unsurprisingly, Mehdizadeh (2010) discovered that high levels of narcissism and low levels of self-esteem were also related to increased Facebook use. Gonzales and Hancock (2011) on the other hand found that looking at and modifying one's own profile on Facebook enhances self-esteem. Bridging together cross-cultural Facebook behaviour and narcissism, Brailovskaia and Bierhoff (2016) showed that open and covert narcissism were related to increased self-presentation on Facebook, in both German and Russian participants. The general finding seems thusly, that the need for attention and

self-representation evident in narcissism manifests itself in Facebook behaviour. This further suggests that certain real life psychological phenomena translate to social media behaviour.

In sum, past research on Facebook has displayed certain patterns and relations that reflect real life behaviour. While these results are not directly related to power, they shed light on past methodology in studying Facebook behaviour and most importantly, that some of the individual differences in real life reflect in differences in Facebook behaviour as well. Experimental studies on the direct effects of psychological manipulations on Facebook behaviour have been sparse, however, given the evidence for various psychological phenomena exhibiting themselves in social media, we may expect that certain manipulations could have a direct impact on immediate Facebook behaviour. Facebook offers various different types of communication, ranging from private messages to public status updates, giving us a larger palette to measure different behaviours. For our purposes, we constructed a short self-report survey to measure the frequency of Facebook activity that participants engage in after the power manipulation, the details of which are discussed shortly.

The Experience of Power. For the sake of our research, social power is defined as an individual's comparatively advantageous capability to control other individuals' states through control over resources or through punishments. This definition has been used in past research by Keltner, Gruenfeld, and Anderson (2003) and it is in line with earlier definitions of power (Thibaut & Kelley, 1959). The experience of power - when an individual feels they have relative power over their environment and other individuals - has been shown to have an impact on individuals. Past research has argued that power changes the affect, cognition, and behaviour of an individual (Keltner et al., 2003). One of the early studies on power by Kipnis (1972) showed that when given power, people perceive their subordinates as objectified means to one's own end. For example, researchers have discovered in experimental settings that people who have been induced with the experience of power are more likely to turn off an annoying fan in a waiting room (Galinsky et al. 2003), that people with power are more prone to stereotype people (Fiske, 1993) and even perceive their subordinates as having sexual desires towards them (Kunstman, J. & Maner, J., 2011).

Power makes people approach. The behavioural approach system (BAS) has been a speculated basis of certain approach-related behavioural characteristics held by an individual (DePue, 1995). When the system is activated, people are more likely to approach other people

and objects in their environment. The existence of the behavioural approach system and its complement, the behavioural inhibition (BIS) system has a neurological basis (Depue, 1995; Sutton & Davidson, 1997). Anderson and Berdahl (2002) showed empirical evidence to the claims on the impact of power on approach and inhibition tendencies. They demonstrated that power made participants disinhibited in expressing their true attitudes, more likely to pay attention rewards, and more likely to try and influence other people. Keltner and his colleagues (2003) suggested that the BAS translates to action and the framework was later applied by Galinsky and his colleagues in their studies of power and action (Galinsky et al., 2003). Relatedly, the behavioural inhibition system is proposed to be activated when an individual experiences powerlessness. This inhibition was proposed to cause individuals to refrain from taking action and this preference for inaction was confirmed by Galinsky et al. (2003) as well. The behavioural approach system serves as a basis for the behavioural aspects of the experience of power.

Power makes people take action. In their research, Galinsky and his colleagues argued that the underlying cause for their proposed action tendency caused by power stems from the independence from others and the freedom to act without restrictions, along with the underlying behavioural approach system (Galinsky et al. 2003). They conducted a series of studies and confirmed that participants assigned to the high power condition were more likely to take action compared to low power and control participants. Participants induced with a sense of power were more likely to take another card in a game of Blackjack, when the hand was at 16 - also showing evidence for power making people more prone to risk-taking. In another experiment in the same study, they further displayed that participants going through a high power priming manipulation were more likely to turn off an annoying fan that was present in the experimental setting. In addition to the action-taking tendency, high power participants were shown to both contribute resources and withdraw more resources from a common goods pool compared to low power and control participants. Galinsky and his colleagues' work on the behavioural aspects of power serves as a fundamental basis for our research as well.

Power makes people feel more positive. The positive affect that was proposed to be related to power has been studied by Anderson and Berdahl (2002), who discovered that participants who were higher in social dominance experienced more positive, rather than negative emotions, paid more attention to rewards, and were disinhibited in expressing their atti-

tudes. In their study, participants answered a questionnaire measuring their predisposed social dominance which correlated with the amount of influence they had in a dyadic resource allocation task, the absence of negative emotions, and disinhibition of expression of attitudes. They also confirmed the same effects for participants who were assigned to a higher power status in another experiment included in the same paper. This shows that positive emotions are not only more common in people higher in social dominance but also with people who have temporarily gained social power. Additionally, their study sheds light on the approach and disinhibition tendencies related to power, seeing as participants with power were more likely to express their true attitudes.

Power makes people engage in automatic cognition. Fiske (1993) proposed that heightened power is related to stereotyping. She reviewed a variety of research in support of her claims and indeed most notably a study by Goodwin and Fiske (1993) displayed that dominant people engaged in more stereotyping and paid less attention to disconfirming information. These findings have been further expanded to abstract processing caused by power. In a series of experiments, Smith and Trope (2006) showed that priming participants with power made them think more abstractly compared to priming participants with low power. The abstract processing of the high power participants was prevalent both in tasks where it led to a better performance and a weaker performance, suggesting that the effect was not due to any possible performance enhancing factors caused by a power prime. They also revealed that a high power prime resulted in more activation on the right hemisphere, which has been linked to more abstract processing of stimuli (Fink et al., 1996). To sum up the research we have presented here, power has been shown to have activating effects on behaviour, elevating effects on affect, and automating effects on thinking.

Manipulating the Sense of Power. The experience of power has been manipulated through power priming (Galinsky et al., 2003; Smith & Trope, 2006;), assigning participants to powerful or powerless roles, for example that of a manager or an employee (Anderson & Berdahl, 2002; Galinsky et al., 2003; Kipnis, 1972; Scholl & Sassenberg, 2014), and as a combination of both (Galinsky et al., 2003). Power priming in previous research has been conducted by having participants write about an event when they had power over other people or alternatively when other people have had power over them. Control participants have been commonly writing about an event without a power-loaded theme, such as the previous day. In

past research, blind judges have evaluated the content of the writing tasks and consistently rated the high power prime participants as describing having more power in their stories, whereas the low power prime participants have been rated as being powerless relative to the high power participants (Galinsky et al., 2003; Smith & Trope, 2006;). Power priming had an effect on the various tasks measuring abstract and automatic cognition in Smith and Trope's (2006) series of experiments, as well as on participants' tendency to act on the annoying fan in Galinsky and colleagues' (2003) work.

Assigning participants to a position of power or that of a subordinate as a means of inducing a sense of power has shown effective results. In Kipnis' (1972) early works, participants were assigned to the position of a supervisor in charge of a team of workers. The supervisors were told that they were being kept separate from the workers to prevent arguments, however, in reality the workers were imaginary and their behaviour was decided prior to the research setting. The supposed behaviour was reported by an assistant arriving from the mock-up workers' quarters. Participants in the high power condition were given "a range of institutional powers with which to influence their workers" (Kipnis, 1972), whereas in the no-power condition participants did not receive these. The majority of participants with power reported feeling they had authority. In a similar fashion, Anderson and Berdahl (2002) - later Galinsky and his colleagues (2003) and Scholl and Sassenberg (2014) - assigned participants in supervisory or subordinate positions in dyadic tasks. Participants filled a leadership questionnaire, which was told to assign them to the role that would fit them best. In reality, the assignment was random. The power manipulation resulted in high power participants having more influence in the tasks regardless of their prior social dominance (Anderson & Berdahl, 2002). In other applications of the position manipulation, high power participants reported feeling in charge of their subordinates (Galinsky et al., 2003) and low power participants reported having less power in comparison to the high power participants (Scholl & Sassenberg, 2014), displaying evidence that the manipulations worked.

Galinsky and his colleagues (2003) further enforced the power priming manipulation by combining it with the assignment to a position of power in their second experiment of their series of studies on power and action. In essence, the power priming essay, where participants wrote about an experience where they either held power or someone had power over them, was completed first. This was then followed up by the bogus leadership questionnaire adapted

from Anderson and Berdahl's (2002) work and the associated assignment to the position of a leader or a follower, depending on the experimental condition. Blind judges as well as the high participants themselves rated the holding more power based on the essays compared to the low power participants. As a result, high power participants were more likely to take action on an annoying fan in a room that was videotaped by the researchers.

Social Power and Online Behaviour. Limited research has been conducted on the consequences of power on online behaviour, however, one study that stands out investigated the impact of power on deliberation when writing e-mails. Scholl and Sassenberg (2014) assigned participants in a role of a manager or an employee for a bogus dyadic creativity task to manipulate the experience of power and gave each of the experimental groups an "unrelated" task to compose business e-mails. They discovered that individuals in the high power condition would deliberate significantly less than individuals in the low power condition when typing the e-mails. The findings were measured by a deliberation index consisting of factors related to time spent before starting to type and time spent on typing rather than not typing. As an additional curiosity, high and low power participants did not differ significantly in the politeness of the messages. These discoveries are in line with the premises of earlier research about the action tendency and the disinhibition that are related to increased sense of power. Further, they show that some of the effects of power on real world behaviour also translate to online behaviour what comes to deliberation and action tendency.

The Present Study

In our current research we seek to investigate how the effects of power we have discussed translate to a social media environment. Power has various effects on individuals, affecting cognition, behaviour, and emotion. While cognition and affect would be interesting fields of study, in our research we have chosen to study the behavioural effects of power on social media usage. The reason for choosing behavioural effects stems first and foremost, from the perceived accuracy of measurement. Quantifying the frequency of activity on Facebook, we predict manipulating individuals with power will affect the amount of activity on various Facebook behaviours, as per the activating effects of power. Power has been shown to make people take action and deliberate less in online behaviour, which is why we predict that elevated power results in more Facebook activity.

Judging by the results of past research, we arrived at the decision to use a double manipulation with power priming essays combined with the assignment to a supervisory or a subordinate role with modifications to accommodate to our ethical guidelines and the design of our study. That is, we combine the power priming essays with role assignment to a role of a supervisor or a follower, adapted from past research (Anderson & Berdahl, 2002; Galinsky et al., 2003). In detail, high power participants write about a powerful experience and later get assigned to a role of a supervisor, whereas low power participants write about a powerless experience combined with the role of a subordinate. We then instruct the participants to use Facebook and afterwards complete a self-report questionnaire to measure what they did on Facebook, e.g. how many messages, comments, updates, shares, and reactions they made. We also ask participants to report on their average Facebook use, in order to control for a possible confounding factor affecting their activity during the experiment.

Our hypotheses are that participants undergoing the high power manipulation would be the most active on Facebook during the task and that participants in the low power manipulation would be the least active. In detail, we predict that participants in the high power condition would report most actions taken during the Facebook task compared to the low power and control groups, as determined by the self-report measures of reactions, comments, messages, posts, and shares made during the Facebook task in the experiment. Conversely, we predicted that participants in the low power condition would report the least amount of activity during the task compared to either high power or control conditions. Control condition was predicted to act as a baseline between the two experimental conditions. To sum up, our hypotheses are as follows:

Hypothesis 1: High power participants make more Facebook comments, messages, reactions, posts, and shares during the experiment than control or low power participants.

Hypothesis 2: Low power participants make less Facebook comments, messages, reactions, posts, and shares during the experiment than control or high power participants.

Method

Participants

Participants were 70 Facebook users (32 male, 37 female, 1 other) recruited via a variety of channels on the internet. The age of the participants ranged from 18 to 60 ($M = 27.0$ $SD = 1.1$). The effect size for the power calculation was set at 0.2 for a relatively small effect, however, this estimation was based on what the effect size had been in past research on power (see e.g. Galinsky et al., 2003). The initial power calculation showed that in order to have 80% power to detect the allotted effect size, the sample size would have to be at least 98. However, due to time constraints and poor turnover we made the decision to stop data collection at 70 participants, having 66% power to detect the effect size of 0.2.

Materials

The experiment directly implemented a power priming task used in previous research by Galinsky et al. (2003). In the power priming task participants were asked to recall and elaborate on an experience from their past when they had held power over other people, where someone held power over them, or about their previous day, depending on the condition (see Appendix 1 for full details). Additionally, the study implemented a resource allocation task, adapted with modifications from previous research (Anderson & Berdahl, 2002; Galinsky et al. 2003; Scholl & Sassenberg, 2014). Instead of using the incentive of real money due to ethical issues, high power participants were placed in the role of a supervisor who would decide how to split an imaginary €750 worth of bonus money among themselves and their subordinate team member. Low power participants in turn were instructed to estimate how their supervisors would divide this sum of money (see Appendix 2). Control participants were exempt from this task. A five minute timer (LeMieux, D. & Lew, B., 2014) was implemented in conjunction with the Facebook activity task, where participants received instructions to start the timer, open and use Facebook how they like, and return to the study after the timer alarms them. Lastly, a self-report survey was included, asking about the participants' Facebook activities during the five minute period on Facebook and the frequency of their Facebook usage.

Design

The study applied a three independent samples experimental design with two experimental conditions, high power and low power, and a control condition. The independent vari-

able was the power manipulation condition and the dependent variables were the amount of reported Facebook comments, messages, reactions, posts, and shares. Later, the groups would be compared against each other to discover differences in frequency of Facebook activity. Participants were assigned to either high power, low power, or the control condition through a link to a html-coded website that redirected them to a random version of the experiment.

Procedure

The study took place online in order to reach a wider, more relevant audience. The link to draw participants was posted on Facebook, reddit, and swapsurvey.com. Forms of informed consent and a brief introduction to the experiment were presented at the first screen and prior to the actual experiment. The screen gave a detailed overview of the experiment, and stated that it consisted of two studies, one studying how individuals work in a resource allocation task and the other on how individuals behave on social media. It also reminded the user that in order to participate in the experiment, the participant has to be a Facebook user. Participants were asked to provide brief demographics, gender and age. Second, the participants were presented with the power priming task consistent with their randomly assigned condition. After the power priming, participants moved forward to the resource allocation task with the corresponding experimental group assignment.

After the resource allocation section, participants were thanked for their participation in the first study and instructed to proceed to the second study. In the following screen, participants were asked to spend five minutes on Facebook. Following the Facebook task, participants were presented with a survey asking about their Facebook activities in the five minute time period and about their usual frequency of Facebook usage. After the last questionnaire, participants were brought to a debriefing screen, where the goals and manipulations of the study were described.

Ethical Issues

The most obvious ethical consideration of the experiment was the power manipulation. Participants in the low power condition were faced with past experiences where they were not in control of the interaction, which in turn could lead to some negative emotions. While we cannot control how people perceive their own past experiences, in the debriefing we addressed the task and ensured the participant of the intentions of the research and the purpose of recalling a possibly negative memory. Further, low power participants undertook a

task where they again, are placed in the position of a follower. On the other side, being put in a position of heightened power may also cause some people to abuse that power. However, in the current study the amount of power individuals were allowed to have is retained at a minimum - that is, they are only in control of a fictional sum of money - in order to for the individuals to have a sense of power without causing irrevocable harm to any of the other participants, nor themselves.

The part of the study where participants were asked to use Facebook and later respond to questions about their Facebook usage could pose ethical issues in terms of privacy. The study sought to gain knowledge about the Facebook usage of the participants, which often-times contained personal and private information. To ensure that no identifying, personal or private information that the participants would not consent to was withdrawn, participants were not monitored during their Facebook usage period and they were explicitly told so. Further, participants were not asked to elaborate further on their activities, outside of the frequency of their engagement. By not implementing Facebook activity monitoring algorithms in the study, nor asking for any potentially identifying information, we ensured that participants Facebook profiles would not be linked to their responses in the study and that any information that they would not want to disclose about their Facebook profiles or behaviour, was not retained. Finally, participants received a debriefing form to explain the purposes and goals of the experiment.

Results

Preliminary Analyses

Analysis of the content of the stories produced by the participants showed that most participants described situations and events relating to the instructions. Low power participants described situations where someone had control over their desired outcomes, whether in a professional or a private setting. One low power participant reported never having experienced anyone having power over them. For the high power participants, most described situations where they had power over other people, while three participants reported not having experienced a situation where they had power over someone else. Control participants did not elaborate on situations where social power had any role, as was expected. Main analyses were conducted both including all the participants and excluding the participants who reported not having experienced the prompted situations, the results of which are described along with the main findings.

Distribution and trends were analysed for the resource allocation tasks to determine how much the low power participants would estimate their supervisors would differ from an equal allocation of resources and how much the high power participants would keep for themselves. Low power participants consistently estimated that their supervisors would keep more than half of the allotted money for themselves ($M = 445.43$, $SD = 140.09$), while high power participants decided to keep a slightly more equally divided portion of the money ($M = 403.36$, $SD = 60.95$). The data for the resource allocation task barely passed the normality assumptions for the low power condition (Shapiro-Wilk, $F(23) = 0.909$, $p = 0.060$) but not for the high power condition (Shapiro-Wilk, $F(22) = 0.909$, $p < 0.05$). A one-sample t-test showed that the upwards estimation of low power participants on how much the supervisor would keep for themselves was significantly different from an equal division (€375) of the resources ($t(19) = 4.534$, $p < 0.001$). High power participants' allocation differed from an equal distribution significantly as well ($Z = 164.50$, $p < 0.05$), according to a Wilcoxon signed rank test. These findings suggest that low power participants expected their supervisors to hold on to more power over them through majority control of resources and that high power participants tended to exert their power to keep the majority of the resources for themselves, in line with expectations of the power manipulation.

Main Results

Our hypotheses were that high power participants would report the most activity on Facebook and that low power participants would report the least. The data for the dependent variables (reactions, comments, messages, shares, and posts) did not pass normality assumptions (see Table 1).

Table 1

Normality tests for the dependent variables

	<i>Tests of Normality^{b,c,d}</i>		
	Shapiro-Wilk		
	Condition		
	Control (df=25)	Low Power (df=23)	High Power (df=22)
	Statistic	Statistic	Statistic
Reactions	0.743**	0.766**	0.626**
Messages	0.517**	0.534**	0.642**
Comments	0.520**	0.538**	0.221**
Shares	0.308**		
Posts	0.203**		0.221**

b. Shares is constant when Condition = Low Power. It has been omitted.

c. Shares is constant when Condition = High Power. It has been omitted.

d. Posts is constant when Condition = Low Power. It has been omitted.

** Significant at $p < 0.001$

In addition, the data tended to skew towards zero in all of the measures (see e.g. Figure 1 for Reactions, Appendix E for all variables). The descriptive statistics for the measures are seen in Table 2. Due to normality violations, a non-parametric Kruskal-Wallis test was conducted to determine if the conditions differed from each other in reported Facebook activity. The results were not significant for any of the dependent variables (see Table 3) and the null hypotheses were retained. Another set of tests were run, excluding the participants who reported never having experienced the prompted power-related situations. The normality assumptions for the dataset where these participants were excluded were violated as well and a Kruskal-Wallis test showed that excluding the participants had no difference on the overall results either (see Table 4). Analysing the distribution of the data for high power and low power participants in Reactions (Figure 1) and Messages (Appendix E), it seemed there was a rather noticeable difference between the groups, high power participants displaying less Facebook activity than the low power participants. The two groups were compared with a Mann-

Whitney U-test for two independent variables, however, the results were not significant for Reactions, $U = 194.5, p = 0.137$, nor Messages, $U = 238.0, p = 0.669$. Neither of the two hypotheses could be confirmed.

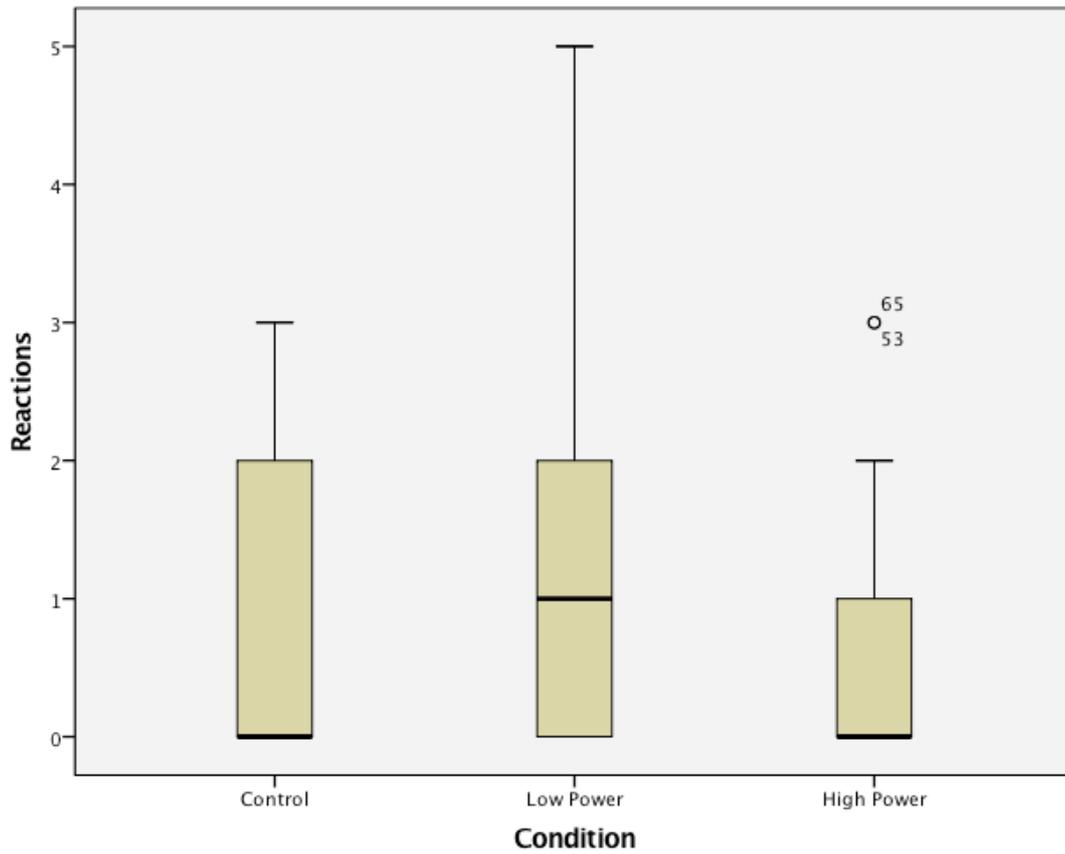


Figure 1. The Distribution of the Amount of Facebook Reactions Across Conditions.

Table 2

Descriptive Statistics for Facebook Reactions Across Conditions.

Case Summaries^a

	Condition							
	Control		Low Power		High Power		Total	
	Total		Total		Total		Me an	SD
	Mean	SD	Mean	SD	Mean	SD		
Reactions	0.84	1.106	1.13	1.486	0.55	0.963	0.84	1.211
Messages	0.48	1.085	0.43	0.945	0.45	0.739	0.46	0.928
Comments	0.24	0.523	0.30	0.635	0.05	0.213	0.20	0.499
Shares	0.08	0.277	0.00	0.000	0.00	0.000	0.03	0.168
Posts	0.04	0.200	0.00	0.000	0.05	0.213	0.03	0.168

a. Limited to first 100 cases.

Table 3

Kruskal-Wallis Test for Between-Groups Differences

Test Statistics^{a b}

	Reactions	Messages	Comments	Shares	Posts
Chi-Square	2.221	0.463	3.117	3.653	1.005
df	2	2	2	2	2
Asymp. Sig.	0.329	0.793	0.210	0.161	0.605

a. Kruskal Wallis Test

b. Grouping Variable: Condition

Table 4

Kruskal-Wallis Test for Between-Groups Differences Excluding Non-reporting Power Prime Participants

Test Statistics^{a,b}

	Reactions	Messages	Comments	Shares	Posts
Chi-Square	2.213	0.960	2.646	3.331	1.073
df	2	2	2	2	2
Asymp. Sig.	0.331	0.619	0.266	0.189	0.585

a. Kruskal Wallis Test

b. Grouping Variable: Condition

Discussion

We predicted that inducing participants with the experience of power would increase their activity on Facebook and in addition that inducing participants with the experience of powerlessness would in turn decrease the amount of Facebook activity. In detail, our first hypothesis was that high power participants would report more activity on Facebook than either control or low power participants. Our second hypothesis was that low power participants would report the least amount of activity on Facebook out of all the conditions. Our predictions were based on the previous findings that power increases action taking, disinhibition, and approaching, while powerlessness has the opposite effect. However, our results showed that the implemented power manipulation had no effect on the amount of reported Facebook activity. This could be due to a number of reasons. While a manipulation check was not implemented, in the assumption that the double manipulation would be sufficient as has been demonstrated by past research, it can be difficult to determine whether the lack of discovered effects was due to lack of statistical power, a failed manipulation, an inaccurate measurement instrument on Facebook activity or because the experience of power had no significant effect on Facebook behaviour. Future research should address these issues in order to reveal any possible effects.

Limitations

Statistical Power. The statistical power was less than optimal, giving us reduced confidence that our results - had they been significant - would have been correct. According to our initial power calculations with the estimated effect size we chose, we would have reached adequate but not good statistical power. Increasing the sample size would arguably ameliorate the issue or at least aid in narrowing down the reasons for no apparent effects. However, our data collection with regards to attracting participants turned out to be a problematic task. Participant turnover was reasonable, however, the dropout rate was rather sobering. It is under speculation whether or not it was the writing task that made participants quit the study prematurely or if it was the Facebook task that made participants sufficiently distracted to not return to the study after using Facebook. The experiment had known issues on mobile devices, which was mentioned in the first page of the experiment along with the informed consent, however, there's no telling if some participants glossed over it and tried to complete the experiment on mobile, resulting in dropouts.

Another issue concerning the statistical power was that the resulting effect sizes were smaller than predicted when the initial calculations for an adequate sample size were made. While a larger sample size could have helped in discovering significant results, another factor influencing the results would be a better measurement instrument - after all, most participants reported no activity at all. The fact that most participants did not report any activity does make the data much more skewed and further decreases the effect size as well. Whereas results where most people would have reported activity could have resulted in clearer differences between the means of the different conditions and thus a larger effect size, the data we have is different from what we expected it to be. This has an impact on how feasible our initial power estimations are to the end result of our study. A better measurement instrument could more accurately track differences in Facebook activity and ultimately show whether or not there is an effect to speak of.

The Facebook Task. One of the major methodological limitations was the implementation of the Facebook task. Due to ethical considerations, participants' Facebook behaviour was not tracked directly during the task so that their anonymity would be ensured. Instead, participants were instructed to open Facebook and report their behaviour after the timer had alerted them of its expiration. There was no failsafe way to control whether or not the participants actually used Facebook during the allotted time or if they even used Facebook at all. Future research on the topic should develop methods to more accurately measure Facebook activity within the appropriate ethical guidelines.

An additional potential limitation of the task was the allotted time. It could be that five minutes was not a large enough time window to accurately witness any change. Had the Facebook task been longer, participants might have been more active during the task and displayed more variance between the experimental conditions. All of the reported Facebook activity was skewed towards zero, violating normality and most other common distributions. Given more time for the task, we could have witnessed more variance in the reported activity. It should also be noted that while in past research on the experience of power the effects have been immediate or near immediate, Facebook behaviour could differ in that sense. However, the reason for the chosen short time window for the Facebook task in our study was because it was predicted that a longer experiment would reduce turnover and completion of the task.

Thirdly, the self-report measure that was implemented did not guarantee that the participants accurately reported their activities. They might have downplayed, exaggerated, or forgotten their amount of activity during the task. Our instruments did not track the participants' Facebook behaviour during the task due to ethical concerns, which is the reason we opted for a self-report measure after the task. This may have produced additional noise to the measurement. To eliminate the noise and to better measure the amount of activity, a live tracker should be implemented with the consent of the participants. The tracker would track all of the participants' actions on Facebook during the experiment, which would have the additional advantage of analysing the content of their activities. An important consideration here is that participants might not act in a way they normally would, since Facebook usage is personal and private. However, being tracked could also have no effect, seeing as Facebook already keeps track of the users' data. A means to go around this would be to not tell the participants that they were being tracked during the experiment but this is yet another ethical issue.

The Experience of Power. Another explanation to the lack of discovered effects is that there was no effect. It is entirely in the world of possibilities that power does not affect Facebook behaviour. While power has been demonstrated to induce behavioural activation and result in action in real world situations, perhaps the activation of the behavioural approach system does not translate to social media behaviour in a similar manner. Individuals might be more inclined to act in the real world and disregard Facebook when they have been induced with the experience of power. Being active on Facebook may be experienced as not being active in the real world. This would explain the low reported average Facebook activity for high power participants in the experiment, however insignificant.

Alternatively, the experience of power may indeed increase activity on Facebook, however, the extent of the effect might be overshadowed by other variables. A person might feel powerful and want to engage on Facebook but the people they oftentimes engage with might not be present at that current moment. It could also be that the content they see on Facebook discourages from posting or engaging conversation. Although power has been shown to make people disinhibited, perhaps the extent of disinhibition caused by power is not enough in the social media context, which arguably is an abnormal representation of human interaction. Conversely, feeling less powerful might originally discourage people from engag-

ing in Facebook activities but encountering certain social stimulus might override the feeling and instead encourage people to take action.

In addition to the possibility that there was no effect and to the possibility that the effect was overshadowed by other factors, we must consider if the manipulation simply was not strong enough. Participants differed from equally distributing or estimating an equal distribution of the resources in the allocation task, suggesting that they would assume a role-specific position in terms of power dynamics. However, this alone does not adequately tell whether or not the participants felt truly powerful or powerless. While the manipulations we applied had a successful track record in past research, it could be that it simply did not work in our study. One possible explanation would be that the participants did not feel that there were any consequences for the resource allocation. In past research, participants had been for example told that the division of the raffle tickets to win \$500 between the low power and the high power participant would be final and up to the high power participant to decide (Anderson & Berdahl, 2002). This imagined real control over the outcomes might be the crucial factor that was missing in our research due to ethical concerns about deception in an online study.

Future Research

Future research should address all the limitations we have discussed. Firstly, an appropriately sized sample should be obtained to ensure sufficient statistical power. In addition, the instruments for gathering data about the participants' Facebook usage after the manipulation should be developed further, as there are several concerns about the effectiveness of the instruments used in the current research. Related to the instruments, ethical approval should be ensured for the implementation of future instruments, as it was one of the most limiting factors in deciding on the measurement instruments in the experiment. Elements of deception may have been crucial for the effectiveness of the manipulations in past research, where participants were lead to believe they were assigned to a powerful position because of their supposed leadership qualities. However, since our research took place online, concerns were raised about proper debriefing of the participants about the deception, leading us to choose a non-deceptive method. Finally, controlling for possible noise resulting from normal Facebook usage at a given time, that might confound the effects of the induction of social power, is strongly advised.

Another curiosity that future research might want to address is other effects of power on social media behaviour. It could be that power does not make people more active on Facebook because the action tendency would make them focus on something in the real world instead of on Facebook. However, for example the disinhibition of Facebook behaviour could be studied, where participants would be tasked to write a Facebook update, which would later be analysed for its content. Another interesting approach would be to measure how individuals' predisposed social dominance orientation is related to their Facebook behaviours.

Conclusion

Our experiment sought to discover the effects of the experience of social power on the frequency of Facebook activity. The experience of social power was inducted by two power manipulations, one by priming and the other by a decision-making task. The effect of the power manipulations on the amount of Facebook activity were measured by a self-report questionnaire filled by participants after having been instructed to use Facebook for five minutes. We could not find significant results for our claims. A variety of factors possibly influencing the lack of results were discussed, namely the lack of statistical power and adequate sample size, inaccuracy of measurement instruments, noise produced by other variables, and simply, the lack of effects.

APPENDICES

Appendix A. Power Priming Task.**(High power condition)**

Please recall an incident from your past in which you had power over another individual or individuals. By power, we mean a situation in which you controlled the ability of another person or persons to get something they wanted, or were in a position to evaluate those individuals. Please describe this situation in which you had power— what happened, how you felt, etc.

(Low power condition)

Please recall an incident from your past in which someone else had power over you. By power, we mean a situation in which someone had control over your ability to get something you wanted, or was in a position to evaluate you. Please describe this situation in which you did not have power—what happened, how you felt, etc.

(Control condition)

Please recall yesterday. Describe your experiences of the previous day, what happened, how you felt, and so forth.

Appendix B. The Resource Allocation Task.

(High power condition)

In the next task you will be assigned to the role of a **supervisor**.

Read the following instructions carefully:

You are the newly assigned senior consultant on a creativity based team project. Your team consists of you and your subordinate. Before starting on the task, the allotted bonus money for the completion of the project is decided. As the supervisor of your team, you get to decide how the allotted bonus for your team's performance in the task is divided between you and your project partner. The allotted bonus is €750.

In the section below, you decide how to divide the bonus between yourself and your subordinate co-worker. Use the slider to determine how much of the bonus money you want to keep for yourself. Your partner receives the amount that remains from your share.

(Low power condition)

In the next task you will be assigned to the role of a **follower**.

Read the following instructions carefully:

You are the newly assigned junior consultant on a creativity based team project. Your team consists of you and your supervisor. Before starting on the task, the allotted bonus money for the completion of the project is decided. Your supervisor will decide how the allotted bonus for your team's performance in the task is divided between you and your supervisor. The allotted bonus is €750.

Your supervisor decides how much to keep from the bonus money for themselves. You will receive the remaining amount from that. Use the slider to estimate how much of the bonus money your supervisor decides to keep for themselves.

Appendix C. Facebook Task.

In this study you are asked to spend 5 minutes on your own Facebook account. Feel free to do as you like during these 5 minutes on Facebook. Your Facebook activities will not be monitored during this period. A short questionnaire about your activities is presented afterwards. Before proceeding, read the instructions carefully.

Step 1: Activate the timer by clicking on the link [Start timer](#) [hyperlink]

Step 2: After you have activated the timer, open Facebook in a new tab by clicking the link [Facebook](#) [hyperlink]

Step 3: Return to this page after spending 5 minutes on Facebook. The timer will alert you when the time is up.

Step 4: Tick the box below and move on to the next section.

Note: The time spent in completing the study is automatically recorded in the experiment. Responses recorded with less than the requested 5 minutes are discarded. The timer is implemented to help you keep track of time.

Facebook task completed

Appendix D. Facebook Survey.

In this part you are asked to fill a short questionnaire about your activities in the previous Facebook task during the 5 minutes.

*How many reactions (Likes, Hearts, etc.) did you make during the past 5 minutes?**

0 1 2 3 4 5 6 or more

*How many people did you message during the past 5 minutes?**

0 1 2 3 4 5 6 or more

*How many comments did you post during the past 5 minutes?**

0 1 2 3 4 5 6 or more

*How many posts did you share during the past 5 minutes?**

0 1 2 3 4 5 6 or more

*How many posts (Status Updates, Picture Uploads, Check-ins, etc.) did you make during the past 5 minutes?**

0 1 2 3 4 5 6 or more

*On average, how much do you use Facebook per day?**

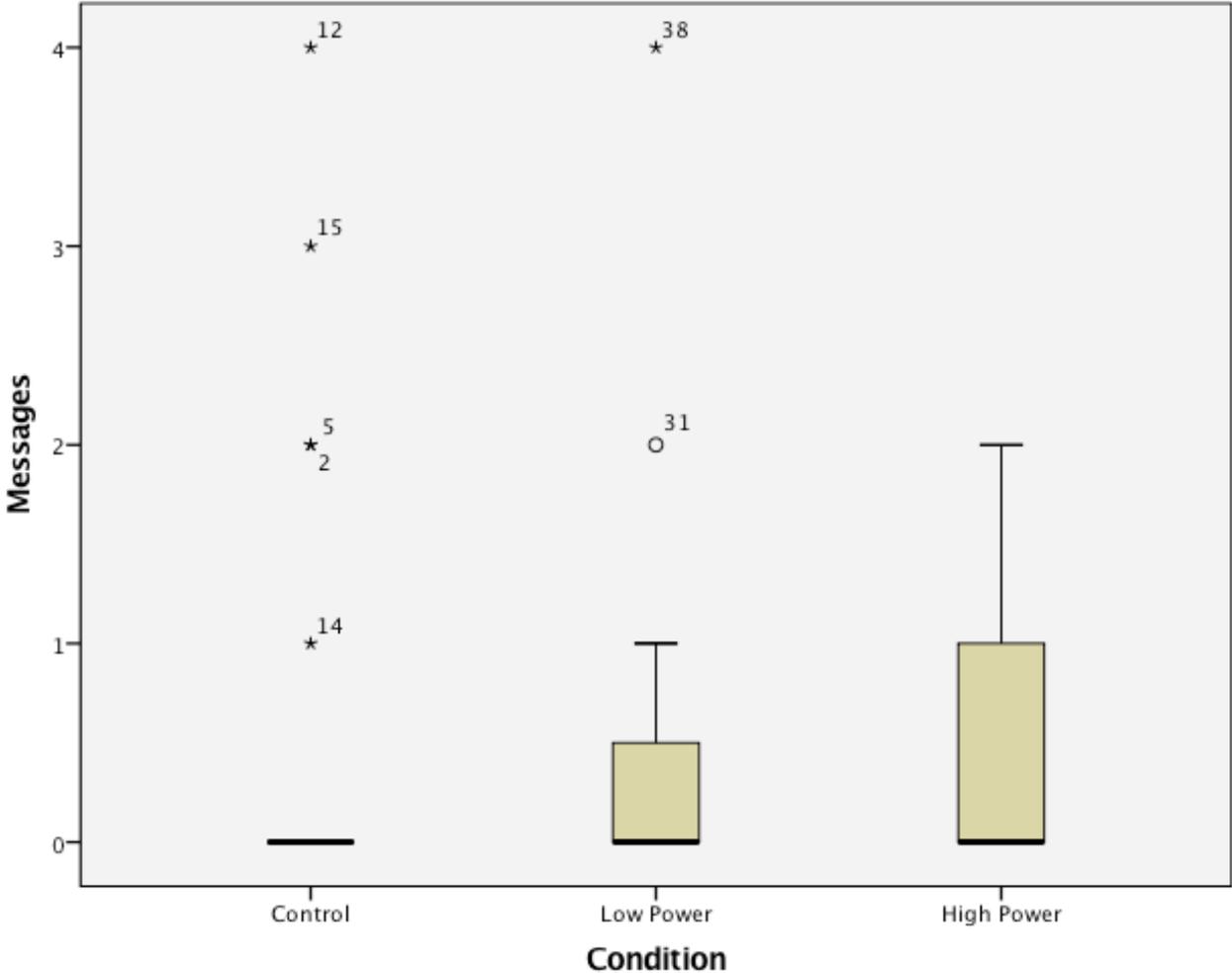
__ hours

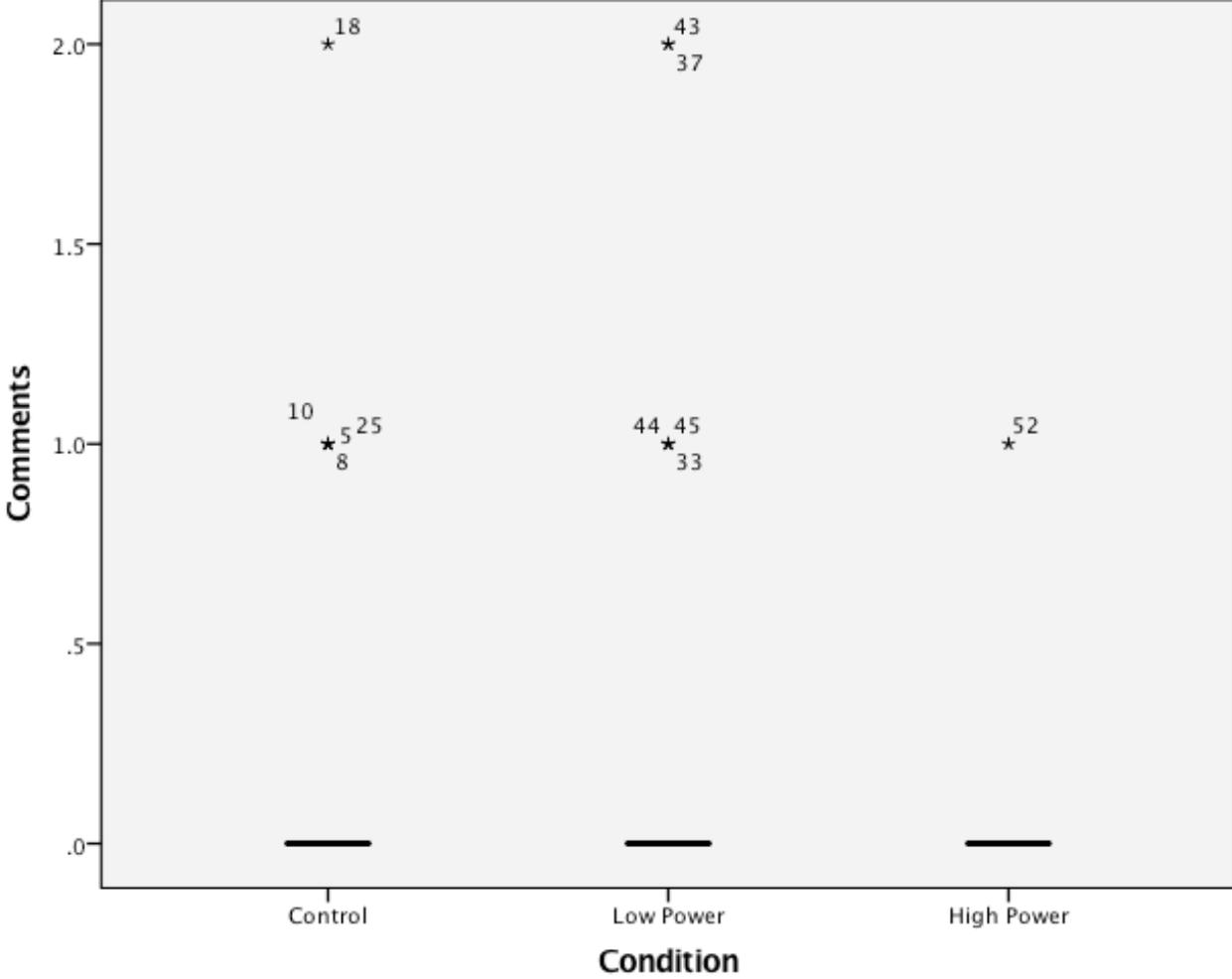
__ minutes

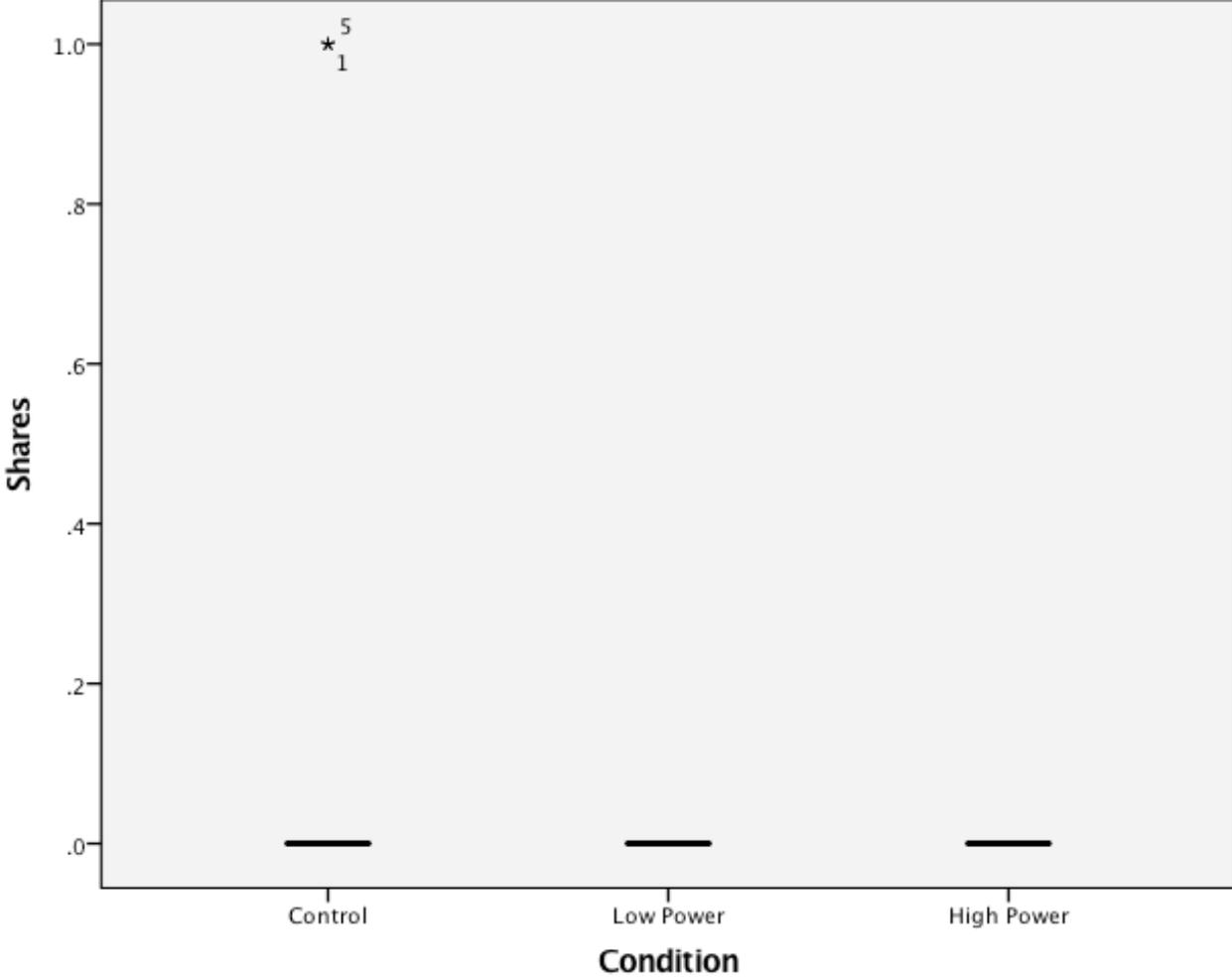
*On average, how many times do you check Facebook per day?**

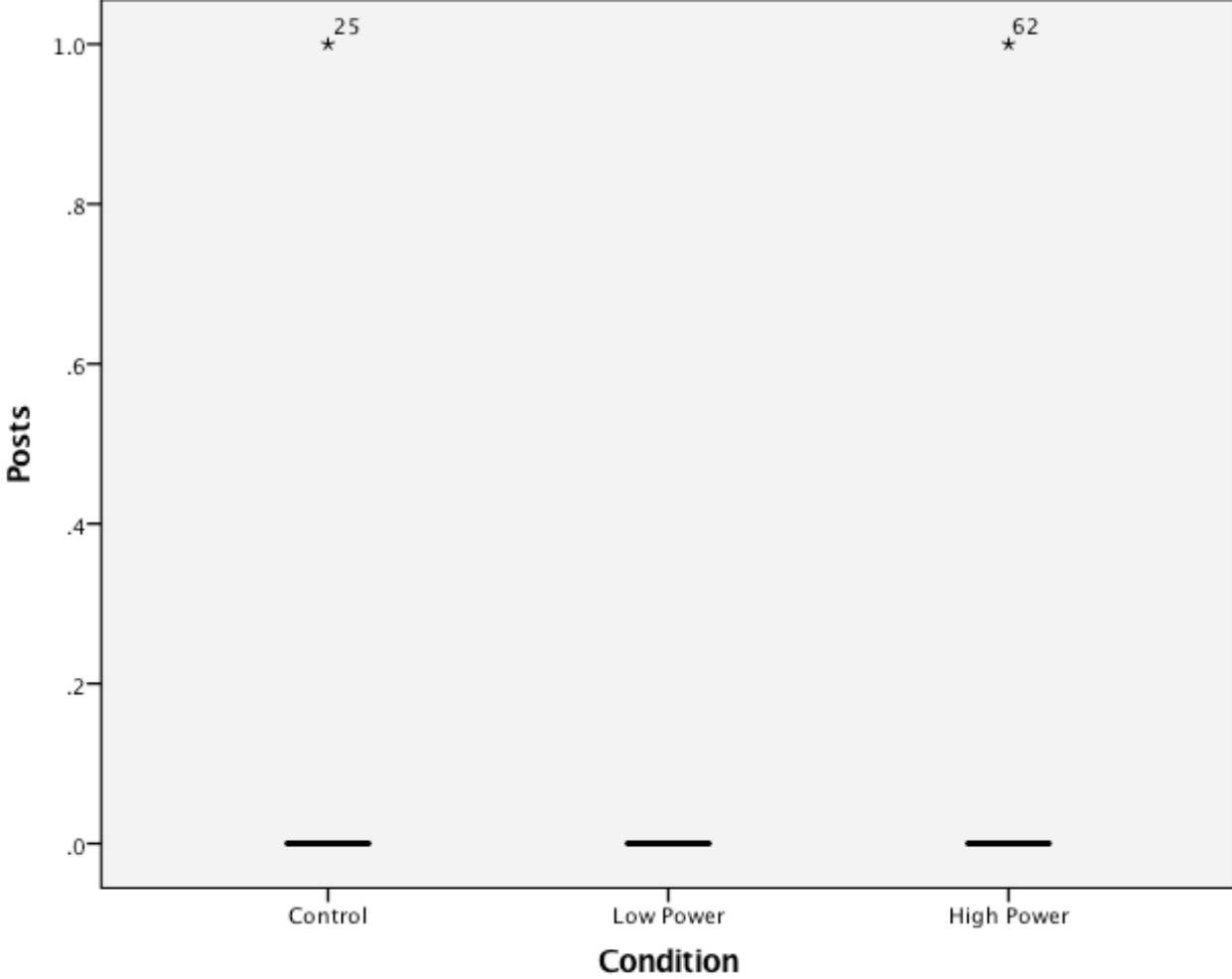
—

Appendix E. Box-plot Distributions of Facebook Activity Across Conditions









REFERENCES

- Anderson, C. & Berdahl, J. (2002). The experience of power: Examining the effects of power on approach and inhibition tendencies. *Journal Of Personality And Social Psychology*, 83(6), 1362-1377.
- Anderson, C., John, O., Keltner, D. & Kring, A. (2001). Who attains social status? Effects of personality and physical attractiveness in social groups. *Journal of Personality and Social Psychology*, 81(1), pp.116-132.
- Boyd, D., & Ellison, N. (2007). Social Network Sites: Definition, History, and Scholarship. *Journal Of Computer-Mediated Communication*, 13(1), 210-230. <http://dx.doi.org/10.1111/j.1083-6101.2007.00393.x>
- Brailovskaia, J. & Bierhoff, H. (2016). Cross-cultural narcissism on Facebook: Relationship between self-presentation, social interaction and the open and covert narcissism on a social networking site in Germany and Russia. *Computers In Human Behavior*, 55, 251-257.
- Christofides, E., Muise, A., & Desmarais, S. (2009). Information Disclosure and Control on Facebook: Are They Two Sides of the Same Coin or Two Different Processes?. *Cyberpsychology & Behavior*, 12(3), 341-345. doi:10.1089/cpb.2008.0226
- Depue, R. (1995). Neurobiological factors in personality and depression. *European Journal Of Personality*, 9(5), 413-439. <http://dx.doi.org/10.1002/per.2410090509>
- [emarketer.com](http://www.emarketer.com) (2016). *Nearly One-Third of the World Will Use Social Networks Regularly This Year - eMarketer*. Retrieved from <http://www.emarketer.com/Article/Nearly-One-Third-of-World-Will-Use-Social-Networks-Regularly-This-Year/1014157>
- [emarketer.com](http://www.emarketer.com) (2016). *Facebook Remains the Largest Social Network in Most Major Markets*. Retrieved from <https://www.emarketer.com/Article/Facebook-Remains-Largest-Social-Network-Most-Major-Markets/1013798>
- Fink, G., Halligan, P., Marshall, J., Frith, C., Frackowiak, R., & Dolan, R. (1996). Where in the brain does visual attention select the forest and the trees?. *Nature*, 382(6592), 626-628. <http://dx.doi.org/10.1038/382626a0>
- Fiske, S. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist*, 48(6), pp.621-628.

- Galinsky, A., Gruenfeld, D. H., & Magee, J. (2003). From power to action. *Journal of Personality and Social Psychology*, *85*, 453–466.
- Gonzales, A. L., & Hancock, J. T. (2011). Mirror, Mirror on my Facebook Wall: Effects of Exposure to Facebook on Self-Esteem. *Cyberpsychology, Behavior & Social Networking*, *14*(1/2), 79-83. doi:10.1089/cyber.2009.0411
- Karapanos, E., Teixeira, P., & Gouveia, R. (2016). Need fulfillment and experiences on social media: A case on Facebook and WhatsApp. *Computers In Human Behavior*, *55*, 888-897.
- Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review*, *110*, 265–284.
- Kipnis, D. (1972). Does power corrupt?. *Journal Of Personality And Social Psychology*, *24*(1), 33-41. doi:10.1037/h0033390
- Kunstman, J. and Maner, J. (2011). Sexual overperception: Power, mating motives, and biases in social judgment. *Journal of Personality and Social Psychology*, *100*(2), pp.282-294.
- LeMieux, D. & Lew, B. (2014). e.ggtimer.com. *A simple countdown timer*.
- Mehdizadeh, S. (2010). Self-presentation 2.0: Narcissism and self-esteem on Facebook. *Cyberpsychology, Behavior, and Social Networking*, *13*, 357–364. doi:10.1089/cyber.2009.0257
- Moore, K. & McElroy, J. (2012). The influence of personality on Facebook usage, wall postings, and regret. *Computers In Human Behavior*, *28*(1), 267-274. doi:10.1016/j.chb.2011.09.009
- Nadkarni, A. & Hofmann, S. (2012). Why do people use Facebook?. *Personality And Individual Differences*, *52*(3), 243-249. doi:10.1016/j.paid.2011.11.007
- Ross, C., Orr, E. S., Susic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers In Human Behavior*, *25*(Including the Special Issue: State of the Art Research into Cognitive Load Theory), 578-586. doi:10.1016/j.chb.2008.12.024
- Schneider, F., Maier, M., Lovrekovic, S., & Retzbach, A. (2014). The Perceived Leadership Communication Questionnaire (PLCQ): Development and Validation. *The Journal Of Psychology*, *149*(2), 175-192.

- Scholl, A. & Sassenberg, K. (2014). "While You Still Think, I Already Type": Experienced Social Power Reduces Deliberation During E-Mail Communication. *Cyberpsychology, Behavior, And Social Networking*, 17(11), 692-696.
- Sheldon, K. M., Abad, N., & Hinsch, C. (2011). A Two-Process View of Facebook Use and Relatedness Need-Satisfaction: Disconnection Drives Use, and Connection Rewards It. *Journal Of Personality & Social Psychology*, 100(4), 766-775. doi:10.1037/a0022407
- Smith, P. & Trope, Y. (2006). You focus on the forest when you're in charge of the trees: Power priming and abstract information processing. *Journal Of Personality And Social Psychology*, 90(4), 578-596. <http://dx.doi.org/10.1037/0022-3514.90.4.578>
- Sutton, S. & Davidson, R. (1997). Prefrontal Brain Asymmetry: A Biological Substrate of the Behavioral Approach and Inhibition Systems. *Psychological Science*, 8(3), 204-210. doi:10.1111/j.1467-9280.1997.tb00413.x
- Thibaut, J. W., and Kelley, H.H. (1959). *The social psychology of groups*. New York: Wiley.
- Trump, D. J. [realDonaldTrump]. (2017, February 17). *The FAKE NEWS media (failing @nytimes, @NBCNews, @ABC, @CBS, @CNN) is not my enemy, it is the enemy of the American People!* [Twitter moment]. Retrieved from <https://twitter.com/realdonaldtrump/status/832708293516632065?lang=en>
- Vasalou, A., Joinson, A. N., & Courvoisier, D. (2010). Cultural differences, experience with social networks and the nature of "true commitment" in Facebook. *International Journal Of Human - Computer Studies*, 68, 719-728. doi:10.1016/j.ijhcs.2010.06.002
- Weber, M., Henderson, A. and Parsons, T. (1947). *The theory of social and economic organization*. 1st ed. London: W. Hodge.
- Weiqin, E., Campbell, M., Kimpton, M., Wozencroft, K., & Orel, A. (2016). Social Capital on Facebook. *Journal Of Educational Computing Research*, 0735633116631886. doi: 10.1177/0735633116631886
- Woolcock, M. (2001). Microenterprise and social capital: *The Journal Of Socio-Economics*, 30(2), 193-198. doi:10.1016/s1053-5357(00)00106-2