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Social Media Effects

When Fake News Becomes Real: Combined Exposure to Multiple News Sources and Political Attitudes of Inefficacy, Alienation, and Cynicism

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Meital Balmas¹

Abstract

This research assesses possible associations between viewing fake news (i.e., political satire) and attitudes of inefficacy, alienation, and cynicism toward political candidates. Using survey data collected during the 2006 Israeli election campaign, the study provides evidence for an indirect positive effect of fake news viewing in fostering the feelings of inefficacy, alienation, and cynicism, through the mediator variable of perceived realism of fake news. Within this process, hard news viewing serves as a moderator of the association between viewing fake news and their perceived realism. It was also demonstrated that perceived realism of fake news is stronger among individuals with *high* exposure to fake news and *low* exposure to hard news than among those with *high* exposure to both fake and hard news. Overall, this study contributes to the scientific knowledge regarding the influence of the interaction between various types of media use on political effects.

Keywords

political satire, fake news, political effects, political attitudes, survey, content analysis

Introduction

For many years, research on the political impact of the mass media was based for the most part on analyses of hard news (Balmas & Sheaffer, 2010; Kioussis, Mitrook, Wu, & Selzer, 2006; Krosnick & Kinder, 1990; McCombs, 2004; Robinson & Sheehan, 1983; Scheufele, 2000). During the past decade, however, scholars have embraced the notion

¹The Hebrew University of Jerusalem, Jerusalem, Israel

Corresponding Author:

Meital Balmas, Department of Communication, The Hebrew University of Jerusalem, Scopus Campus, Jerusalem 91905, Israel.

Email: meitalbalmas@gmail.com

that entertainment-oriented programming might also play an important role in the political environment. Two forms of entertainment programming have received particular attention from media-effects scholars, namely, late-night talk shows (e.g., Moy, Xenos, & Hess, 2005b; Young, 2004, 2006) and satirical news-programs (e.g., *The Daily Show with Jon Stewart*; see Baym, 2005; Cao & Brewer, 2008; Fox, Koloen, & Sahin, 2007; Holbert, Lambe, Dudo, & Carlton, 2007). The latter kind is also referred to in the literature as “fake news” (Holbert, 2005a). These studies show that such political entertainment programming can produce a wide range of effects, including salience (e.g., Young, 2006), perceptions (e.g., Holbert et al., 2007), attitudes (Holbert et al., 2003; Moy et al., 2005b; Tsfati, Tukachinsky, & Peri, 2009), and behaviors (Cao & Brewer, 2008; Moy, Xenos, & Hess, 2005), and generate politically relevant outcomes (Holbert, 2005a; Holbert Garrett, & Gleason, 2010). Most research in this field has either investigated the political entertainment outlets in isolation from other media sources (i.e., news) or compared and contrasted hard news with various forms of political entertainment. For example, in their examination of the effects that exposure to *The Daily Show* has on young adults’ political attitudes, Baumgartner and Morris (2006) use the *CBS Evening News* as a baseline for comparison between humorous and traditional television news. Tsfati et al. (2009) put forth several promising hypotheses, each dealing with the effect of a different genre (specifically, news, talk shows, and political satire) on viewers’ trust in democratic institutions (see also Cao & Brewer, 2008). Young’s (2008) study, which explores the impact of humor on cognitive processing of political messages, also distinguishes between the impacts of humorous and nonhumorous political messages, juxtaposing jokes on late-night talk shows, and the episodes or individuals that had become the butt of these jokes. While these recent studies into the role of humor in entertainment-based political communication have undeniable merits, they do not take into account the complex nature of contemporary media consumption, in which individuals are exposed to multiple media sources. Indeed, it has been pointed out that one type of media use can influence another, and that the interaction among various forms of media use can affect political-communication processes (e.g., Holbert, 2005b; Holbert et al., 2007; McLeod, Nir, & Druckman, 2008; Scheufele, & Moy, 1999). Accordingly, as elaborated in Holbert (2005b), mass-communication studies ought to subject these relationships to rigorous investigation, taking into account the possibility “that multiple mass media use behaviors can function as mediators of one another as both relate to a given dependent variable” (p. 448).

This study undertakes an empirical examination of the issues raised by Holbert (2005b; see also Holbert & Benoit, 2009) regarding the combined effects of different media sources on important outcome variables. Holbert’s rationale is followed in a two-step analysis: first, by investigating how combined exposure to both hard news and political satire affects the degree of perceived realism of fake news. More specifically, this step probes whether the consumption of hard news along with fake news moderates the degree of perceived realism of fake news. The second step is focused on the influence of fake-news viewing on political attitudes of inefficacy, alienation, and cynicism. It is argued that this relationship is mediated by the degree of perceived realism of fake news, and that the association between consumption of fake news and its perceived realism is moderated by exposure to hard news.

The data used here were collected in Israel during the 2006 election campaign. Relatively little is known about the political effects of political-entertainment content in countries other than the United States. Although the media systems and political communication in Israel and United States are similar (Benoit & Sheaffer, 2006), there are nevertheless differences between them on the micro- and macrolevels. News exposure and knowledge vary significantly between the United States and Israel, for example. According to Peri (2012), news consumption in Israel among both elites and the general population is extremely high. This involvement is a direct outcome of two factors: first, security concerns because of the ongoing Israeli-Palestinian conflict and second, the unique features of the political system in Israel, which make it relatively easy for the opposition to call for early elections. Both of these factors lead to a constant state of political instability, which promotes public consumption of news and political media (Esser et al., 2012). By contrast, in the United States, scholars report that the average citizen is only moderately interested in politics and unwilling to devote much time to learning about political issues (Iyengar et al., 2010; Neuman, 1986). As discussed later, there is good reason to believe that this high degree of hard news consumption impacts consumption of and responses to perceived fake news content.

Extant Research on Fake News

Fake news genre represents programming where either the program's central focus or a very specific and well-defined portion is devoted to political satire (Holbert, 2005a). An epitome of this genre is *The Daily Show with Jon Stewart*, a program that uses satire to reveal the artificiality of elected officials as well as the journalists who write about them (Holbert, 2004). Another example is *The Colbert Report*, which produces politically satirical skits. According to Hmielowski, Holbert, and Lee (2011), politics is the primary subject matter for each episode in satirical programs, and "people turn to [them] knowing they will encounter all matters political" (p. 99).

Fake news mostly highlights inconsistencies in political rhetoric and satirizes the norms governing the typical news media through ironic inversions of the day's news (Young, 2007). The political figures in such shows are usually portrayed as self-centered (Lichter, Lichter, & Amundson, 2000), dumb, lecherous, and dishonest (Niven, Lichter, & Amundson, 2003; Sarver, 2004). The negative jokes and satirical imitations target the politicians' personalities much more than the political issues they are involved with (Dye, Harmon, & Lichter, 1992; Hess, 2001). Until recently it was assumed that political humor and satirical content were perceived by viewers as having only limited consequences for real-world policy views (Nir & Mutz, 2010). But as these shows gained popularity and legitimacy as a source of information on public affairs (Bauer, 2004 cited in Holbert, 2005a), researchers have increasingly recognized their possible effects on public perceptions. Several studies have demonstrated that exposure to fake news and/or to late-night talk shows during an election campaign can shape viewers' perceptions of the candidates (Moy, Xenos, & Hess, 2006; Pfau, Cho, & Chong, 2001; Young, 2004, 2006). Others have found that it affects even broader constructs such as political trust (Baumgartner & Morris, 2006; Tsfaty et al., 2009).

Scholarly interest has also been drawn to the interplay between exposure to fake news or late-night talk-shows and traditional television news consumption. It was revealed that exposure to fake news or late-night comedy is associated with greater attention to the presidential campaign in traditional television news (Cao & Brewer, 2008; Feldman & Young, 2008; Hart & Hartelius, 2007; Young & Tisinger, 2006). Similarly, Hmielowski et al. (2011) identified that exposure to cable news programming is the main predictor of viewing political TV satire. Moreover, a new line of literature has recently begun to explore how consumption of fake news and similar programs functions in coordination with more traditional forms of public-affairs media use to produce a broad range of effects (Holbert et al., 2007). For example, a recent study by Landreville, Holbert, and LaMarre (2010) revealed that exposure to late-night TV comedy impacts on the rate of viewing TV debates, which in turn influences face-to-face political talk. As elaborated later, this new approach is adopted in this study.

Media Connectedness and Perceived Realism of Fake News

As mentioned previously, the majority of political-communication research either explores a single-media outlet in isolation from other media sources, or focuses on the competing effects of multiple outlets, comparing and contrasting the effects of one type of media use relative to others (Holbert, 2005b; Holbert & Benoit, 2009; Martinelli & Chaffee, 1995). However, and this is especially true during an election, usually people are not exposed only to a single-media outlet (Hmielowski, 2012; Napoli, 2001; Webster, 1986, 2005, 2007), nor does the influence of one particular outlet occur in a vacuum, as if no other sources existed or were available (Holbert & Benoit, 2009). Indeed, in an age of multi-channel media, audiences have a wider array of sources and contents to choose from (Napoli, 2001; Webster, 2007), and most people are likely to glean different and even contradictory information through multiple media outlets (Hmielowski, 2012; Holbert et al., 2010; Webster, 2007). Accordingly, Holbert and Benoit (2009) outlined a third type of research into political communication effects, setting forth a theory which they termed *media connectedness*. This research area focuses on (a) multiple information outlets and (b) the interaction among them. While Holbert and Benoit have tested their theory primarily on traditional political-communication outlets (e.g., television news, newspapers, talk radio), the object of this study is to expand this theory to the relationships between fake and hard news. To this end, it is proposed here that the consumption of fake news cannot be studied in isolation from the consumption of hard news, since—as mentioned earlier—empirical evidence indicates that exposure to political satire, late-night comedy, and so on is associated with exposure to traditional television news (Feldman & Young, 2008; Hart & Hartelius, 2007; Hmielowski et al., 2011; Young & Tisinger, 2006).

One obvious distinction between fake and traditional news content is that the former is meant to be perceived as unrealistic while the latter as realistic. This, in turn, may cause viewers to weigh the content of fake news differently from that of hard news. Specifically, scholars have suggested that media content that is perceived as realistic makes a stronger persuasive impact than media content that is perceived as unrealistic (e.g., Busselle &

Greenberg, 2000; Greenberg, Neuendorf, Buerkel-Rothfuss, & Henderson, 1982; Huesmann, Eron, Klein, Brice, & Fischer, 1983; Perse, 1986; Peter & Valkenburg, 2010; Potter, 1986; 1988; Rubin, Perse, & Taylor, 1988; Slater & Elliott, 1982). The reason for this greater persuasion effect of the realistically perceived media content may be that the information conveyed seems more engaging and is thus less likely to be discounted (Busselle, Ryabovolova, & Wilson, 2004; Huesmann et al., 1983; Nabi, Moyer-Guse, & Byrne, 2007). Thus, Nabi et al. (2007) found that humorous political messages were discounted more easily than serious political messages. Therefore, consumers of both hard and fake news may accept more readily messages conveyed by the former than by the latter. On the other hand, individuals who are exposed predominantly to fake news and only rarely to hard news may perceive the former as more realistic. It should be noted that fake-news messages are derived from hard news, since it is news media, rather than reality, that generally serves as an input or a reference point for fake news. This is cannot, of course be reversed (hard news feeding off fake news) since fake newscasts do not have real reporters looking for news stories or interviewing politicians. All forms of satire, whether they are political or take on some other form of broader social commentary, have been defined as “pre-generic” (Knight, 2004, p. 4), in that it is in “the nature of satire to exploit preexisting genres” (Holbert et al., 2007, p. 23). In other words, fake news constructs a newscast simply by mining the raw material available on the average cable news television system. According to Baym (2005) for example, the material on Jon Stewart’s *The Daily Show* is culled from *CSPAN*, 24-hour cable news, and other readily available sources. The visuals are supplemented with information gained from major newspapers such as the *New York Times*, *USA Today*, and the *Wall Street Journal*. Drawing on live broadcast coverage of public statements and government proceedings, the issues discussed in fake news generally resemble those appearing in much of the mainstream news media. This media content is then modified, ridiculed, and subjected to novel interpretations. Consequently, viewers who do not have hard news as a reference point may tend not to discount fake-news messages as unrealistic.

It is therefore expected that individuals who have access to multiple information sources, including both hard and fake news, will find the latter as representative of the real political world to a lesser extent than individuals who are exposed mainly to fake news and only rarely to hard news. It is argued here that exposure to hard news functions as an intervening variable in the relation between fake-news consumption rate and perceptions of this genre as realistic. In other words, exposure to hard news moderates the effect of fake-news exposure (which is the independent variable of this investigation) on the perceived realism of fake news (the dependent variable). Hence, our first hypothesis:

Hypothesis 1 (H1): The positive relationship between the level of exposure to fake news and its perceived realism is moderated by the level of exposure to hard news.

Accordingly, as stated earlier, it is also assumed that perceived realism of fake news will be stronger among individuals with *high* exposure to fake news and *low* exposure to hard news than among individuals with *high* exposure to both hard and fake news.

Direct and Indirect Effects of Fake News on Political Attitudes of Efficacy, Alienation, and Cynicism

In addition to questions outlined in the previous section, this study explores (a) whether fake-news use and/or the interaction of fake and hard news consumption (henceforth, hard-fake news interaction) affects the viewers' sense of political efficacy, alienation, and cynicism toward politicians and (b) whether these effects are mediated by the perceived realism of fake news. The latter process, if found, would indicate that the effect of fake-news consumption on political attitudes is attributable solely to the perceived realism of fake news. By way of a definition, it can be said that the effect of fake news on political attitudes is mediated if it involves a sequence of causal steps, for example fake-news consumption or fake-hard news interaction affects the perceived realism of fake news, which in turn affects political attitudes. In other words, fake news or fake-hard news interaction may exert its effect on political attitudes indirectly, through perceived realism of fake news (for other examples that use the same model, see Preacher, Rucker, & Hayes, 2007).

As discussed earlier, media content that is perceived as realistic elicits stronger persuasive effects than media content that is perceived as unrealistic. Therefore, it is reasonable to expect that only individuals who perceive fake-news messages as realistic will be affected by them. Studies have repeatedly shown that political-entertainment programming can have a negative impact on political attitudes (Baumgartner & Morris, 2006; Holbert et al., 2003; Moy et al., 2005b; Tsftati et al., 2009). A formal hypothesis to this effect can be formulated in the following terms:

Hypothesis 2 (H2): The positive relationship between fake-news use and political attitudes (higher score represents a more negative attitude) is mediated by the perception of fake news as realistic; and within that, the positive relationship between fake-news exposure and perceived realism of fake news is moderated by hard-news exposure.

Described later are the three kinds of political attitudes, which are examined in this study: (a) a sense of political efficacy, (b) political alienation, and (c) cynicism toward politicians.

Political Efficacy

Political efficacy is defined by Niemi, Craig, and Mattel (1991) as "beliefs about one's own competence to understand and to participate effectively in politics" (p. 1407). This construct comprises two observable dimensions: perceived competence and perceived effectiveness. The former relates to citizens' beliefs in their ability to understand the major political issues of the day, while the latter gauges the extent of voter's feeling that their actions matter in political decision-making (Holbert et al., 2007; Niemi et al., 1991). Effectiveness, which is the focus of this study, is also defined by Campbell, Gurin, and Warren (1954) as "the feeling that individual political action does have, or can have, an

impact upon the political process, i.e. that it is worthwhile to perform one's civic duties. It is the feeling that political and social change is possible, and that the individual citizen could bring about this change" (see also Abramson & Aldrich, 1982; Balch, 1974; Converse, 1972; Niemi et al., 1991; Tsfaty & Cohen, 2005).

Studies that have examined the relationship between exposure to entertainment-based political programs and the sense of efficacy (or inefficacy) show mixed results. For example, Young (2004) found no relationship between either of the two dimensions of efficacy and exposure to late-night political comedy. Baumgartner and Morris (2006), on the other hand, pointed out that exposure to *The Daily Show* increased efficacy by raising viewers' perception that the complex world of politics was understandable (i.e., by enhancing its competence dimension). According to Baumgartner and Morris, this effect may be the result of Stewart's tendency to highlight the absurdities of the political world. Conversely, Holbert et al. (2007) showed that individuals who perceive themselves to be politically incompetent and ineffective become especially attached to the satirical message of *The Daily Show*.

This study tests whether the relationship between fake-news consumption, with and without exposure to hard news, and the sense of efficacy (specifically, its effectiveness dimension) is mediated by the individual's perception of fake news as realistic. Hence, the next hypothesis:

Hypothesis 2a (H2a): The positive relationship between exposure to fake news and the sense of political efficacy (higher scores represents lower level of efficacy) is mediated by the perceived realism of fake news; and within that, the positive relationship between fake-news exposure and the perception of fake news as realistic is moderated by hard-news exposure.

Political Alienation

Political alienation is defined by Thompson and Horton (1960) as a reaction to political inefficacy, a perception of being unable to influence or control public policy. McDill and Ridley (1962) refined Thompson and Horton's definition, characterizing political alienation as containing elements of apathy in response to political powerlessness and elements of distrust of political leaders, who are the wielders of this power. Finifter (1970), too, regards alienation as involving an element of apathy. She argues that alienation is a sense that political choices (i.e., voting in elections) are meaningless because one cannot change social or political conditions.

Holtz-Bacha (1990), comparing exposure to hard-news and entertainment-shows content, concluded that the perusal of the political section in newspapers and attentive viewing of television news and political programs are all associated with lower levels of alienation, while exposure to entertainment television is associated with higher levels of alienation. It should be pointed out that Holtz-Bacha measured political alienation as a combination of elements of efficacy with elements of apathy. The relationship between these two concepts is indeed self-evident. If voters feel that their actions do not matter and that they cannot

influence government policy, why should they care who will be elected as prime minister or president? In other words, if they harbor the feeling of inefficacy, they are also likely to experience the sense of alienation or apathy. It is also possible, however, that even if one has a sense of inefficacy, one still cares, to some extent, who will be elected. Therefore, this study will focus on the effectiveness dimension and separate between feelings of efficacy and those of alienation.

As argued earlier, it is expected that the effect of alienation toward politicians resulting from fake-news exposure or fake-hard news interaction will be mediated by the perceived realism of fake news. Accordingly it is hypothesized that:

Hypothesis 2b (H2b): The positive relationship between exposure to fake news and the sense of political alienation (higher number represents higher level of alienation) is mediated by the perceived realism of fake news; and within that, the positive relationship between fake-news exposure and the perception of fake news as realistic is moderated by hard-news exposure.

Political Cynicism

Political cynicism toward politicians indicates that citizens are dissatisfied with politicians and with the government's work (Citrin, 1974; Erber & Lau, 1990). This frustration may be expressed in the belief that politicians care more about their self-interest than about ordinary people and more about retaining their positions than the best interests of the country. Citizens may also feel that campaign promises are made with no intention of being kept. As a result, cynics tend to make negative evaluations of politicians' work habits, honesty, and integrity (Cappella & Jamieson, 1996). Theoretically, it is likely that there is a positive correlation between cynicism and inefficacy or alienation. Nevertheless, these two concepts are essentially different. Cynics may still favor one political candidate over another, even if they find them both selfish. Therefore, following previous literature, it is proposed here that cynicism, inefficacy, and alienation should be treated as separate concepts (Baumgartner & Morris, 2006; Young, 2004).

Focusing on cynicism, studies of political news have suggested that high exposure to strategic news during an election campaign leads to an increase in political cynicism (Cappella and Jamieson, 1997; Crigler et al., 2002; de Vreese, 2004; de Vreese & Semetko, 2002; Rhee, 1997; Valentino, Beckmann, & Buhr, 2001). Strategic news is defined as news coverage of a candidate's motivations and personality—as news that emphasize the horse race and focus on disagreements between candidates (Cappella & Jamieson, 1997; Jamieson, 1992). Research into political news has hitherto dealt only with strategic hard news. However, fake news is almost invariably strategic, especially at election time, in that it deals mostly with candidates' personalities (Dye et al., 1992; Hess, 2001), disagreements between them, and sensational items (Patterson, 2000). Furthermore, as pointed out earlier, the tone of fake news is overwhelmingly negative.

In their analysis of political humor on the internet during the 2005 UK election campaign, Shifman, Coleman, & Ward (2007) found that such humor tends to portray politics

as a cynical game. Baumgartner and Morris (2006), who analyzed the relationship between exposure to *The Daily Show* and cynicism, reported that its viewers exhibit more cynicism toward the electoral system and the news media at large. It should be noted, however, that Young (2004) found no significant relationship between late-night comedy exposure and cynicism.

In as much as fake news mostly deals with politicians' personalities, this study focuses on cynicism toward politicians. In this regard, too, the effects of exposure to fake news are expected to be indirect. The next hypothesis is:

Hypothesis 2c (H2c): The positive relationship between exposure to fake news and cynicism (higher number represent higher level of cynicism) is mediated by the perception of fake news as realistic; and within that, the positive relationship between fake-news exposure and the perception of fake news as realistic is moderated by hard-news exposure.

The Israeli Satirical Fake News Program *A Wonderful Country*

A Wonderful Country (in Hebrew, *Eretz Nehederet*) is an Israeli satirical program that has been broadcast for several seasons on Israel's most popular television channel (Channel No. 2). During the March 2006 elections, the program had an average rating of 29.3% and was designated as Israel's most watched television show. The format is a fictitious newscast that covers the past week's events, using mostly satirical impersonations – thus *A Wonderful Country* meets all the criteria of the fake-news genre (Shifman, 2012). The main targets of the satirical impersonations are Israeli politicians. They are presented as dishonest, ignorant, incapable, and self-centered. For example, the incumbent (at the time of study) Prime Minister Ehud Olmert, who is at present under investigation for several allegations of corruption, including one related to the sale of his house, was portrayed as a devious real-estate agent, who attempts to buttonhole and sell houses to every passer-by. Former Defense Minister Amir Peretz was invariably presented as a dumb-witted workers' union chairman, while former (at the time of study) Prime Minister Benjamin Netanyahu as a philandering hedonist with a penchant for scaring the public with war scenarios.

It is argued here that exposure to such negative representation of politicians in fake news in general, and in *A Wonderful Country* in particular, may impact viewers' general political attitudes, fostering political inefficacy, alienation, and cynicism toward politicians, especially in those who perceive this content as realistic. If, for example, politicians are represented in fake-news programs as caring only about their own personal good, rather than the well-being of the state and the future of its citizens, viewers exposed to this content may get the impression that it accurately represents the real political world and develop cynicism toward politics and politicians.

As stated earlier, the primary goal of this research is to explore the effect of *combined* exposure to both hard and fake news on the degree to which viewers perceive fake news as realistic, and as a result, on their political attitudes toward politics and politicians. To this

effect, it was deemed expedient first to gauge the differences between these two contents. Accordingly, a comparative analysis was carried out juxtaposing the content of hard versus fake news—the latter, based on *A Wonderful Country*. It was expected that fake news offers a highly strategic and negative presentation of politicians (Dye et al., 1992; Hess, 2001; Lichter et al., 2000; Niven et al., 2003), while their portrayal in traditional news is mixed, incorporating both positive and negative evaluations (see e.g., McCombs, Lopez-Escobar, & Llamas, 2000; Kim & McCombs, 2007). Although many existing researches incorporate content analyses of various Israeli hard-news programs (Balmas & Sheaffer, 2010; Sheaffer, 2005, 2008; Sheaffer & Wolfsfeld, 2009) so far no empirical study has undertaken a content analysis of *A Wonderful Country*. In as much as this particular show features mostly satirical impersonations of politicians, the content analysis of both hard and fake news presented here focuses on the representations of the political candidates during the 2006 Israeli election campaign. The issue this study endeavors to resolve is the following:

Research questions (RQ1): What characterizes the representation of the Israeli political candidates during the 2006 Israeli election campaign in *A Wonderful Country* as compared to Israeli hard news?

Method

The data for this study was obtained during the 2006 Israeli general election campaign via telephone surveys of Israeli voters, a content analysis of Israel's two main print newspapers (*Yediot Aharonot* and *Ha'aretz*), and an identical content analysis of *A Wonderful Country* between January 1, 2006 and March 12, 2006.

Survey Sample

A telephone survey was conducted on February 16, 2006, 40 days prior to the election. The survey was led by Yariv Tsfati, Riva Tukachinsky, Gabi Weiman and Yoram Peri as a part of research project conducted by Chaim Herzog Institute for Media, Politics and Society. The sample consisted of 509 voting-age individuals,¹ of whom 50% were women (in the overall adult Israeli-Jewish population women constitute 52.1%). The average age was 44 ($SD = 17.28$)—close to that of the general population, which is 46.7 years (Central Bureau of Statistics, 2008). In terms of the educational level, 55% of the sample had had up to 12 years of schooling, 22.4%—between 13 and 15 years, and 21%—more than 16 years. According to the Central Bureau of Statistics, the parallel distribution in the overall Israeli-Jewish adult population is 57.7%, 21.5%, and 20.8%, respectively.

Independent Variables

Media exposure. Respondents were asked to rate how often they watched television news and current-affairs shows, based on a five-point scale ranging from “never” [coded 0] to “every day” [coded 4] ($M = 2.55$, $SD = 1.46$). To measure their exposure to political satire, respondents were asked how frequently they watched *A Wonderful Country*, based on a four-point scale ranging from “never” [coded 0] to “always” [coded 3] ($M = 1.25$, $SD = 1.13$).

Dependent Variables

Perceived realism of fake news. The perceived realism of fake news was operationalized using an item commonly employed in perceived-realism scales (e.g., Busselle, 2001; Konijn, Bijvank, & Bushman, 2007) and adjusting it to gauge the perception of fake news. Namely, the respondents were asked to assess the question, “To what extent does the representation of politics and politicians in *A Wonderful Country* represent Israeli political reality?” on a four-point scale ranging from “not at all” [coded 1] to “very much” [coded 4] ($M = 2.27$, $SD = 0.93$). This question was asked immediately following the one regarding the frequency of exposure to *A Wonderful Country*. Reality perceptions are usually measured with such items as “content X is realistic”; “content X is similar to real life”; or “the situations depicted in content X often occur in real life” (Peter & Valkenburg, 2010). However, as *A Wonderful Country* is mostly concerned with satirical impersonations of politicians, the item used in this study was designed to tap if these satirical impersonations are taken to be realistic representations of the real political candidates. This measure served as the dependent variable in *H1* and as the mediator in *H2*, *H2a*, *H2b*, and *H2c*.

Political efficacy was measured by the question “To what extent do you think you and your friends can influence government policy?” on a 4-point scale ranging from “very much” [coded 1] to “not at all” [coded 4] ($M = 3.26$, $SD = 0.85$). It is important to note that, in other contexts, measuring efficacy by a single item may prove inadequate. This particular study, however, focuses only on the effectiveness dimension of efficacy, which pivots around a respondent’s feeling whether his/her political action does have, or can have, an impact upon the political process (Campbell et al., 1954; Niemi et al., 1991; Tsfati & Cohen, 2005). For this purpose, the item used is considered to be a valid measure (e.g., Holbert et al., 2007; Kenski & Stroud, 2006; Tsfati & Cohen, 2005), and is therefore deemed sufficient for our objectives as well.

Political alienation was measured by two items representing alternative answers to the question “To what extent do you agree with the following statements?” based on a four-point scale ranging from “strongly disagree” [coded 1] to “strongly agree” [coded 4]—specifically, (a) “I really do not care who will be chosen to be prime minister in the upcoming elections” ($M = 1.86$, $SD = 1.13$), and (b) “It doesn’t matter who you vote for in the elections—it doesn’t change the situation anyway” ($M = 2.28$, $SD = 1.19$).² These two items were intended to test the apathy dimension.

Political cynicism was measured by the question “To what extent do you agree with the following statement: Politicians only care about their own personal future, and are not interested in the state’s future” ($M = 2.93$, $SD = 0.99$) on a four-point scale ranging from “strongly disagree” [coded 1] to “strongly agree” [coded 4]. Usually, cynicism is also measured by items that tap the respondents’ trust in government or political institutions (e.g., Cappella & Jamieson, 1997; Sniderman, 1981). This study, however, is centered on cynicism toward politicians, and especially on the aspect of selfishness. The reason is that fake news in general, and *A Wonderful Country* in particular, tends to present politicians as selfish, self-centered, and preoccupied only with their personal benefits (Lichter et al., 2000). The single item used here to measure cynicism is deemed adequate to capture this particular concept.

Covariates

Political leanings were measured using a single item, "How would you rate yourself with respect to the Israeli political map, on a scale from 1 to 5, where 1 represents 'right-wing' and 5 'left-wing'?" This item had a mean of 2.87 and a standard deviation of 1.20.

To lessen the likelihood that a possible relationship between media exposure and political perceptions could be merely a function of background variables, three socio-demographic characteristics were used as control variables, namely, gender, years of education, and income. Education has been repeatedly shown as influential in audience and effects research. Gender and income represent socialization and life situation, which have also been shown to influence one's habits of media use.

Content Analyses

Two identical content analyses were conducted, one for traditional hard news and the other for *A Wonderful Country*.

Hard-news content analysis. According to the literature, the agenda for television news is set by and large by newspapers (Balmas & Sheaffer, 2010; Kim & McCombs, 2007; Roberts & McCombs 1994). Therefore, the content analysis here examined news stories (excluding opinion, editorials, and letters to the editor) about the three main prime ministerial candidates (i.e., party leaders) in two leading Israeli daily newspapers, *Yediot Aharonot* and *Ha'aretz*, over a 6-week period, from January 27, 2006 to February 16, 2006. Following extensive training, five student coders independently identified statements concerning the three candidates. As per Wimmer and Dominick (1991), the unit of analysis was defined as the media coverage of a single candidate in a single article. A total of 338 coding items were analyzed (usually more than one candidate is covered in a single news item). Based on Alpha Krippendorf, intercoder reliability, tested on 20% of the coded items, was no lower than .74 for the lowest coding category. The coding scheme will be elaborated later.

Fake-news content analysis. The content analysis examined *all* items of *A Wonderful Country* between January 1, 2006 and March 12, 2006, relating to the three candidates. These items were coded by two students working independently of each other. Overall, 34 items were analyzed. Based on Alpha Krippendorf, intercoder reliability, tested on all the coded items, was no less than .82 for the lowest coding category.

Coding Scheme for Fake and Hard News

Representations of the three prime ministerial candidates (Ehud Olmert, Amir Peretz, and Benjamin Netanyahu) in both fake news (*A Wonderful Country*) and hard news (*Yediot Aharonot* and *Ha'aretz*) were measured by seven variables: reliability, morality, fulfilling promises, suitability for the duties of prime minister, leadership ability, intelligence, and criticism toward the candidate. The coders were asked to look, in both hard and fake news, for every item that covers one or more of the three prime ministerial candidates. Every such item the coders were asked to rate with respect to the variables listed earlier. Reliability was measured by the question "Does the article contain a clear reference to Olmert's/Peretz's/Netanyahu's reliability?" (1 = no reference; 2 = yes, as reliable; 3 = yes,

as unreliable; 4 = unclear/not relevant). The same questions were asked about morality, fulfilling promises, suitability for the duties of prime minister, leadership ability, intelligence, and critical remarks (the latter variable was gauged by a yes/no question). An additional variable, applied only to *A Wonderful Country*, was “caring and concern about the citizens.” Yet another general category was measured for both types of news content, namely, “Is the overall representation of the candidate in the article positive or negative?” Frequency data regarding all the variables is presented in Figure 2.

Results

According to *H1*, the positive relationship between exposure to fake news and its perceived realism is moderated by the exposure to hard news. It can be plausibly asserted that the effect of fake-news use on its perceived realism is moderated by hard-news exposure only if the size or direction of this effect depends on hard-news exposure. To test *H1*, a standard regression interaction was run. Results show the interaction between fake- and hard-news functions as expected. While a significant negative effect on perceived realism of fake news was found to result from the interaction of exposure to fake and hard news (unstandardized $B = -1.601$ [$SE = 0.53$], $p < .01$), exposure to fake news alone had a significant positive effect on perceived realism of fake news (unstandardized $B = 1.33$ [$SE = 0.52$], $p < .05$) (see Table 1). In other words, consumers of both hard and fake news find the satirical figures representing politicians on satirical news shows less realistic. Control variables included in the regression model were political leanings, age, gender, years of education and income (see Table 1).

Table 1. Regression Model Predicting Perception of Fake News as Realistic.

Predictors	B (SE)
Exposure to fake news	1.33** (0.52)
Exposure to hard news	-2.51** (0.88)
Interaction between fake and hard news	-1.60** (0.53)
Political leaning	-0.02 (0.04)
Age	0.004 (0.03)
Education	-0.02 (0.04)
Income	-0.06* (0.03)
Sex	-0.10 (0.11)
Constant	0.21 (0.12)
N	282
R ²	0.10***

Note: Table entries are unstandardized coefficients.

Numbers in parentheses are standard errors.

* $p < .06$. ** $p < .01$. *** $p < .001$.

For generating graphic representations of the hard-fake news interaction, this study uses the MODPROBE macro developed by Hayes and Matthews (2009). Figure 1 shows that the perceived realism of fake news is higher among individuals with high exposure to fake news and low exposure to hard news than among individuals with high exposure to both fake and hard news.

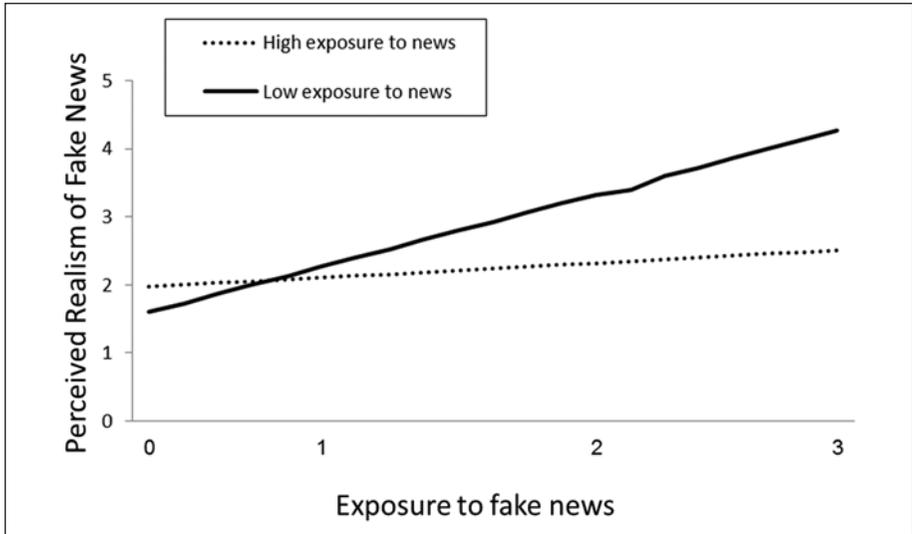


Figure 1. Exposure to hard news moderating the effects of fake news on perception of fake news as realistic.

The next hypotheses (*H2, H2a, H2b, H2c*) focus on the indirect effects of fake news and fake-hard news interaction on the political attitudes (i.e., the sense of inefficacy, alienation, and cynicism toward politicians) through a mediator variable—namely, perceived realism of fake news. However, before discussing these hypotheses at a greater length, it is important to point out the differences between these two genres. What kind of messages conveyed by fake news, as opposed to hard news, may cause the voters to harbor the feelings of inefficacy, alienation, and cynicism toward politicians? To assess the news environment during the 2006 Israeli election campaign, this study conducted two identical content analyses, one for traditional news and the other for *A Wonderful Country*, focusing on the representations of the political candidates during the 2006 Israeli election campaign. As shown in Figure 2, according to the content analyses performed (see above), *all* satirical impersonations in *A Wonderful Country* were negative and clearly targeted at the personality of the political candidates. The latter were portrayed as unreliable, immoral, lacking leadership ability and competence to perform prime ministerial duties, unintelligent, prone to breaking their promises to the voters, and indifferent to the citizens’ well-being. By contrast, the hard-news content was not centered on the personalities of the political candidates, and the information presented was both negative and positive.

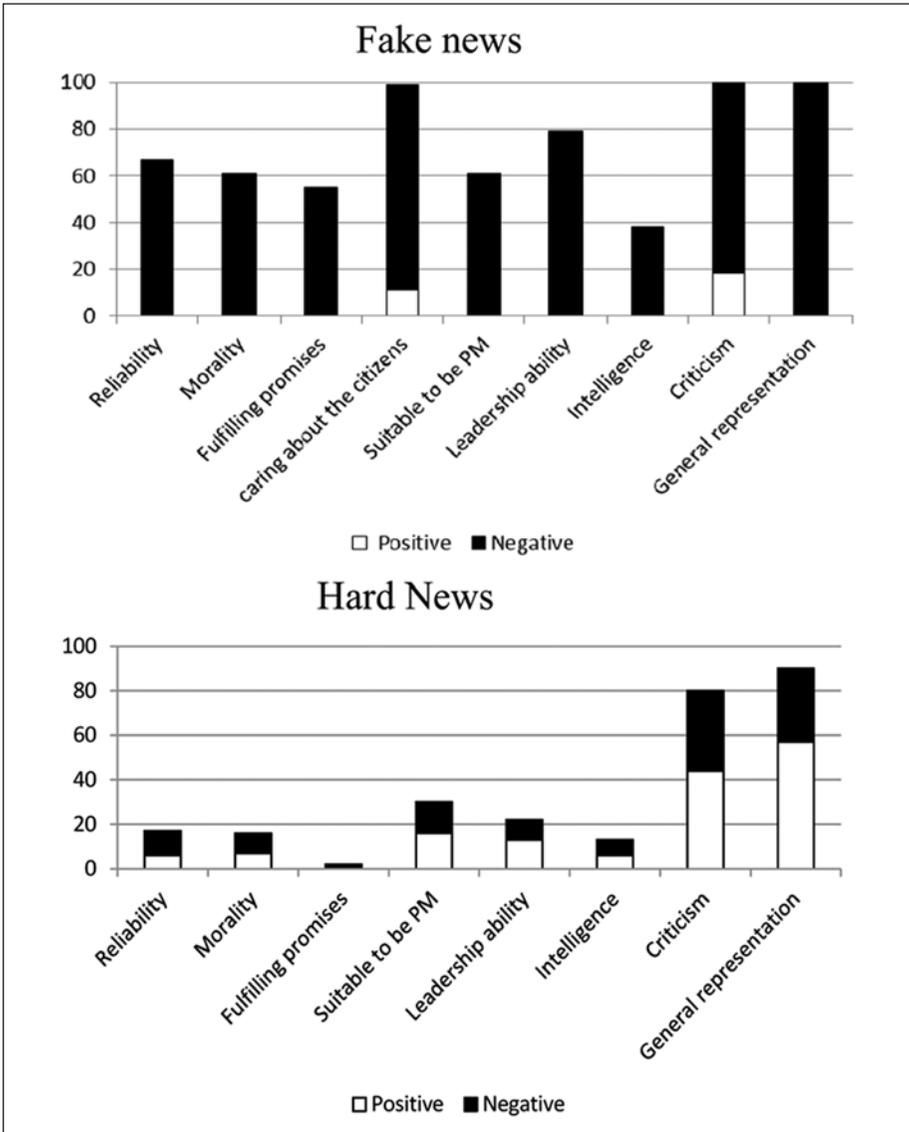


Figure 2. Content analysis of fake news (i.e., *A Wonderful Country*) messages compared to hard news messages.

The overwhelmingly negative portrayal of the political candidates in *A Wonderful Country* may cause viewers who lack the reference point provided by hard news and are thus not subjected to its moderating influence to develop the feelings of inefficacy, alienation and cynicism toward politicians.

This leads us to *H2*, which is concerned with the indirect effects of fake news and of fake-hard news interaction on political attitudes. *H2a*, *H2b* and *H2c* predicted that the positive relationship between exposure to fake news and, respectively, efficacy, alienation, and cynicism is mediated by the perceived realism of fake news, and that within that mechanism, the positive relationship between fake-news exposure and the perception of fake news as realistic is moderated by the extent of hard-news exposure.

These hypotheses were tested using the moderated-mediation macro developed by Preacher et al. (2007; see also Preacher & Hayes, 2008). This SPSS macro can be found on Andrew Hayes' personal website (<http://www.comm.ohio-state.edu/ahayes/>). The model is displayed in Figure 3, with Path C representing the direct relationship between watching fake news (i.e., *A Wonderful Country*) and efficacy, alienation, and cynicism. Path B represents the relationship between perceived realism of fake news and efficacy, alienation, and cynicism. Path A represents the relationship between exposure to fake news and its perceived realism. In addition, the model incorporates the relationship between the fake-hard news interaction (i.e., $X*W$) and perceived realism of fake news, as well as the relationship between that interaction ($X*W$) and the outcome variables: efficacy, alienation, and cynicism.

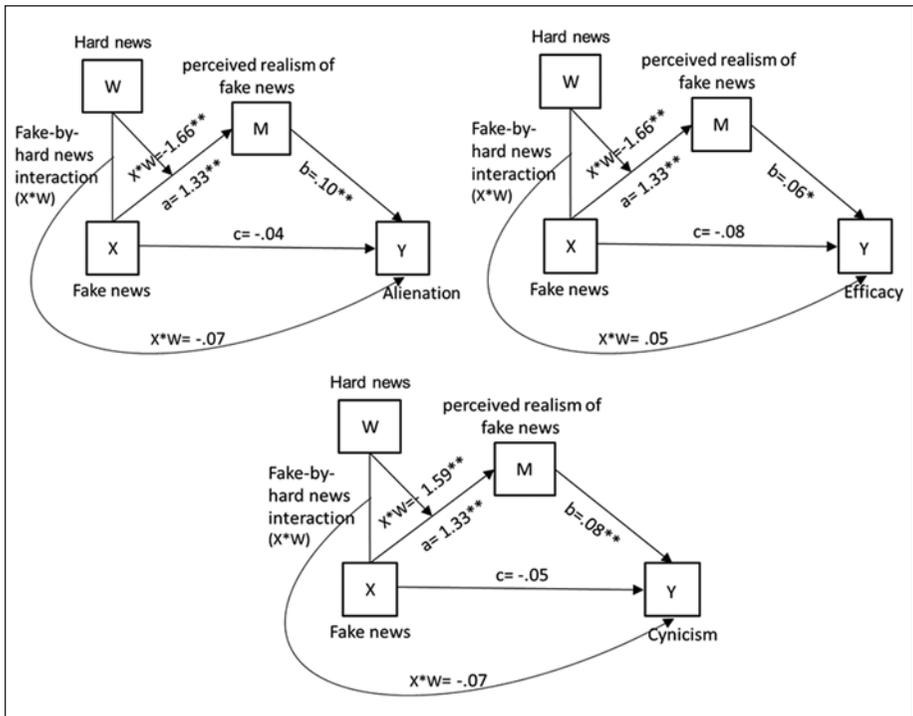


Figure 3. Moderated mediated model.

Notes. *C* is the direct relationship between fake-news use and efficacy, alienation, and cynicism, without perceived realism of fake news. Results are for models controlling for all covariates, which are specified in appendix. * $p < .05$. ** $p < .01$. *** $p < .001$.

The results show a positive relationship for Path A, that is, between exposure to fake news and its perceived realism. However, when exposure to hard news is added to the model, this relationship becomes negative. This relationship was tested previously, with respect to *H1*.

A statistically significant positive relationship was likewise found for path B, that is, between perceived realism of fake news and efficacy ($B = .06$ [$SE = .03$], $p < .05$), alienation ($B = .10$ [$SE = .03$], $p < .01$), and cynicism ($B = .08$ [$SE = .03$], $p < .01$). On the other hand, the relationship between exposure to fake news and these outcome variables is not significant, as indicated by path C. Neither was any significant relationship found between them and the fake-hard news interaction or exposure to hard news (see appendix). Control variables included in the model were political leanings, age, gender, years of education, and income (the results for the control variables are displayed in the appendix).

The same model was also run for a dependent variable that computes the three dependent variables (efficacy, alienation, and cynicism, $\alpha = .775$); the results revealed trends similar to those obtained through the other three models (see Appendix).

All in all, the results of this study suggest that the overwhelmingly negative portrayal of politicians in fake-news programs tends to affect only those individuals who consider political satire to provide a realistic representation of politics and politicians. It is the consumption of hard news *along* with fake news that distinguishes between those who find satirical representations of politicians realistic and those who do not.

Conclusions

This study identifies a political-communication process whereby fake-news viewing impacts on political attitudes, enhancing the feelings of inefficacy, alienation, and cynicism toward politicians. This relationship is mediated by the perceived realism of fake news, while the association between fake-news viewing and the perceived realism of fake news is moderated by exposure to hard news. Regarding hard news, it was demonstrated that the extent to which fake news is perceived as realistic is greater among individuals with *high* exposure to fake news and *low* exposure to hard news than among individuals with *high* exposure to both hard and fake news. This means that the extent of perceived realism of fake news depends on the extent of hard-news exposure, with the result that individuals exposed to both hard and fake news find fake-news messages less realistic. It can be plausibly assumed that such individuals are more attuned to the humor in fake-news programs and realize that it would be impossible for *all* politicians to be *always* unreliable, immoral, lacking leadership ability and competence, and so on, as fake news would have it (see Figure 2). It is noteworthy that, while most existing studies assume that the effects of fake news are direct, this research indicates that it is the perception of fake news as realistic, rather than merely exposure to such programs, that impacts individuals' political sensibilities.

From a media-effects perspective, this study suggests that investigating the effects of this or that media outlet in isolation may be unproductive. Thus, it provides empirical support for calls made by Holbert (2005), Holbert and Benoit (2009), and Holbert et al. (2007)

to examine the combined effects of different media on important outcome variables. These caveats are all the more important in today's media environment, where satirical news offers a competing message type to more traditional forms of television news-programming (Baym, 2005; Holbert et al., 2007), especially as regards political figures (see Figure 2). Holbert et al. (2007) (see also Landreville et al., 2010) took the first step in probing the relationship between the combined consumption of satirical programs (i.e., *The Daily Show*) and more traditional news outlets, and the broad range of effects produced thereby. This study endeavors to advance this line of inquiry by showing how the use of one program type (hard news) affects perceptions of another program type (fake news). As detailed earlier, fake-news messages regarding politics and politicians are viewed as realistic only until hard-news messages are taken into account. Moreover, the impacts of fake news on political attitudes are mostly limited to individuals who take fake news seriously, believing it to accurately represent the political arena.

Be as it may, this study concurs with others (Baum 2003, 2005; Baumgartner & Morris, 2006; Cao & Brewer, 2008; Holbert, 2005b; Holbert et al., 2003; Holbert et al., 2007; Moy et al., 2005, 2006; Mutz, 2004; Tsftati et al., 2009; Young, 2004a; Young, 2004; Young & Tisinger, 2006) in stressing the important role played by the entertainment media in shaping political perceptions. Although intended to entertain, rather than inform, fake news seems not only to educate viewers about political candidates and current affairs (Hollander, 2005; Young, 2006), but also to contribute to deeper attitudes regarding the political world.

Finally, as with any research, this study has a number of limitations. One is related to the use of a cross-sectional research design and has to do with the direction of causal relations between the variables. Based on theoretical reasoning, communication scholars have argued that the direction of the association between media exposure and political perception is from the former to the latter, and not the other way around—an assumption that has been supported by experimental research (e.g., Slone, 2000). However, the causal directionality of this relation cannot be assessed within the framework of this study.

Another limitation involves measures of exposure. As Price and Zaller (1993, p. 135) note, "In trying to estimate their typical rates of media use, respondents may have trouble recalling the details of what may often be a set of low salience behaviors." In the context of this research, this problem is somewhat exacerbated, given that respondents were faced with survey items that referred to several TV program genres such as hard news and political satire. However, measurement error typically biases correlation estimates downward (Allison, 1999, pp. 55-57). If significant results were obtained based on weak measures, then the associations reported above should be reproducible using more accurate measures.

These limitations aside, the findings of indirect positive association between exposure to fake news and viewers' sense of *inefficacy*, alienation, and cynicism toward politicians—through the mediator variable of fake-news perceived realism, and with the association between fake-news viewing and its perception as realistic moderated by exposure to hard news—are important, regardless of the causal mechanism underlying this association. Future research will need to investigate those causal mechanisms, in order to deepen our understanding of how consumers' political perceptions are affected by the complex nature of contemporary media consumption, in which individuals are exposed to multiple news sources simultaneously.

Appendix

Regression Model Predicting Political Attitudes of Efficacy, Alienation and Cynicism

	Efficacy	Alienation	Cynicism	Combined Attitudes
	B (SE)	B (SE)	B (SE)	B (SE)
Perception of fake news as realistic	0.06* (0.03)	0.10** (0.03)	0.08** (0.03)	0.06* (0.04)
Exposure to fake news	-0.08 (0.30)	0.04 (0.30)	0.05 (0.27)	-0.08 (0.32)
Exposure to hard news	-0.17 (0.52)	0.19 (0.70)	0.07 (0.47)	-0.18 (0.53)
Fake-hard news interaction	0.05 (0.85)	-0.07 (0.30)	-0.07 (0.28)	0.05 (0.30)
Political leaning	-0.05* (0.01)	-0.03 (0.14)	-0.02 (0.02)	-0.05** (0.01)
Age	-0.005** (0.001)	-0.005* (0.001)	-0.003* (0.001)	-0.005 (0.001)
Education	-0.05** (0.02)	-0.05* (0.02)	-0.02 (0.02)	-0.05** (0.02)
Income	-0.005 (0.01)	-0.008 (0.01)	-0.01 (0.01)	0.005 (0.01)
Sex	-0.01 (0.05)	-0.07 (0.30)	0.003 (0.05)	0.01 (0.05)
Constant	1.44** (0.53)	1.12* (0.52)	2.17*** (0.48)	1.44** (0.54)
N	274	280	277	274

Note: Table entries are unstandardized coefficients.

Numbers in parentheses are standard errors.

* $p < .06$. ** $p < .01$. *** $p < .001$.

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Notes

1. This random sample of 509 had a margin of error of plus or minus 4% at the 95% confidence level. Within households, adults over 18 were selected. Response rate, calculated according to AAPOR guidelines, was RR1 = 0.30. This is rather low but is similar to rates obtained in other contemporary public-opinion surveys in Israel.
2. The level of alienation is low relative to the level of cynicism and inefficacy. Computing both items measuring alienation, the average is 2.07 on a scale from 1 to 4. There is no relevant data in previous Israel studies for comparison.

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Author Biography

Meital Balmas is a PhD candidate in the Department of Communication at the Hebrew University of Jerusalem. Her research interests include various facets of public opinion, political personalization, political entertainment and media effects.

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Do Social Network Sites Enhance or Undermine Subjective Well-Being? A Critical Review

Philippe Verduyn*

Maastricht University and KU Leuven

Oscar Ybarra

University of Michigan

Maxime Résibois

KU Leuven

John Jonides and Ethan Kross

University of Michigan

Social network sites are ubiquitous and now constitute a common tool people use to interact with one another in daily life. Here we review the consequences of interacting with social network sites for subjective well-being—that is, how people feel moment-to-moment and how satisfied they are with their lives. We begin by clarifying the constructs that we focus on in this review: social network sites and subjective well-being. Next, we review the literature that explains how these constructs are related. This research reveals: (a) negative relationships between passively using social network sites and subjective well-being, and (b) positive relationships between actively using social network sites and subjective well-being, with the former relationship being more robust than the latter. Specifically, passively using social network sites provokes social comparisons and envy, which have negative downstream consequences for subjective well-being. In contrast, when active usage of social network sites predicts subjective well-being, it seems to do so by creating social capital and stimulating feelings of social connectedness. We conclude by discussing the policy implications of this work.

*Correspondence concerning this article should be addressed to Philippe Verduyn, Faculty of Psychology and Neuroscience, Maastricht University, Universiteitssingel 40, 6229 Maastricht, the Netherlands. Tel: +31 43 38 84 347 [e-mail: philippe.verduyn@maastrichtuniversity.nl].

Introduction

Social media are rapidly changing the way people interact. A defining feature of these internet-based applications is that they allow for the creation and exchange of user-generated content (Kaplan & Haenlein, 2010). Typical examples of such content are blog posts, Wikipedia entries, Facebook messages and YouTube videos. These illustrations also reflect the fact that “social media” is a broad term that encompasses a range of communication channels.

Among the most widespread social media sites are so-called social network sites. These sites enable users to connect with others by creating personal information profiles and inviting others to have access to their profiles and messages. Examples of popular social network sites are Facebook, Twitter, Instagram, and LinkedIn. Social network sites differ in the purposes they serve (e.g., LinkedIn and Facebook are mainly used for professional and leisure purposes, respectively) and their dominant mode of communication (e.g., Twitter and Instagram are centered around text-based and image-based messages, respectively). People spend a significant amount of time on these platforms. Mark Zuckerberg, Facebook’s chief executive, recently revealed that users around the world spend on average 50 minutes using Facebook and Instagram combined each day (Stewart, 2016).

The enormous amount of time that people invest in using these sites raises the question: What are the consequences of interacting with social network sites for people’s subjective well-being—that is, how people feel moment to moment and how satisfied they are with their lives? Many people around the world pursue happiness as a basic life goal (Tay, Kuykendall, & Diener, 2015), and subjective well-being predicts a range of consequential benefits, including enhanced health and longevity (Boehm, Peterson, & Kubzansky, 2011; Diener & Chan, 2011; Steptoe & Wardle, 2011). As such, identifying how frequent usage of social network sites impact subjective well-being represents a basic question for social scientists to address, the answer to which has potentially important policy implications.

Here we address this issue by reviewing the current state of the literature surrounding how usage of social network sites influences subjective well-being. Our review is organized into five sections. First, we clarify the scope of our review, identifying the criteria we used to include and exclude studies. Next, we clarify the two concepts that constitute the focus of this article—social network sites and subjective well-being. We then review research examining how social network sites affect subjective well-being and discuss the mechanisms underlying their influence. Finally, we end by discussing the policy implication of this work.

Clarifying Scope

Over the past decade a substantial amount of research has examined the role that Internet activity in general, and usage of social network sites in particular, plays in influencing a wide array of socioemotional outcome variables. Thus, before proceeding we clarify the scope of our review by identifying the variables of interest.

Social Network Sites

Studies examining the impact of overall internet usage on subjective well-being are not included here, as categorizing all internet activities (including social network usage) into one overarching category is considered suboptimal (Bessièrè, Kiesler, Kraut, & Boneva, 2008; Burke, Kraut, & Marlow, 2011). Studies assessing the impact of specific social network site behaviors such as cyberbullying (e.g., Kwan & Skoric, 2013) or sexual solicitation and harassment (e.g., Ybarra & Mitchell, 2008) are likewise not included as each of these behaviors are governed by specific mechanisms and, hence, require separate treatments. As such, rather than adopting a macro (internet usage) or micro (very specific social network site behaviors) approach, we adopt a meso approach in this article, focusing on studies that assess the impact of overall social network site usage and broad categories of social network usage patterns (e.g., passive and active ways of using social network sites).

Subjective Well-Being

Studies are included if the dependent variable can be directly subsumed under the construct of subjective well-being (Diener, 1984, 2009; Myers & Diener, 1995). Thus, our review will focus on studies assessing the impact of usage of social network sites on life satisfaction (i.e., the “cognitive” component of subjective well-being) or how good or bad people feel (i.e., the “affective” component of subjective well-being) including symptoms of affective disorders in the subclinical domain.

Healthy Participants

In this article, we will review studies assessing the relationship between social network site usage and subjective well-being in healthy participants. As such, the present review does not directly speak to the relationship between social network usage and the development or recovery from psychopathologies such as depression or other mental disorders (see e.g., Brusilovskiy, Townley, Snethen, & Salzer, 2016; Park et al., 2016). Neither will we review studies on pathological usage of

social network sites such as social network site addiction (see e.g., Andreassen & Pallesen, 2014).

Features of the Constructs

Social Network Sites

Social network sites are generally defined by three elements. First, users have a personal profile. On most contemporary social network sites, these profiles do not merely contain static self-descriptive information but are continuously changing as a result of updated content provided by the user (e.g., status updates describing what one is currently doing or thinking about), by others (e.g., pictures of the user attending an event of another user), or by the system (e.g., activities on third-party sites). A second key feature is that publicly visible lists of connections are shown. These lists represent users' online social network, which refers to the collection of social relations of varying strengths and importance that a person maintains. Finally, rather than surfing from profile to profile to discover updated content, most social network sites are organized around a stream of frequently updated content (e.g., Facebook's News Feed), which is primarily populated by posts from one's connections (Ellison & Boyd, 2013).

Use of social network sites has boomed during the last decade. According to the Pew Internet and American Life Project, which tracks Internet use trends over time, 65% of all American adults use social network sites as of 2015. This is nearly a 10-fold jump compared to 10 years ago (Perrin, 2015). These numbers do not only represent young adults. Posting messages on Facebook or Twitter has become part of everyday life for older adults as well. Indeed, whereas 90% of people between the ages of 18 and 29 currently use social network sites, those aged between 30 and 49 (77%) and 50 and 64 (51%) are rapidly catching up. People aged 65 and older also are increasingly attracted to social network sites: In 2005, 2% of seniors used social network sites, compared with 35% today (Perrin, 2015).

The social network landscape is inhabited by many different sites (e.g., Facebook, Instagram, Twitter, and LinkedIn), and each tries to attract as many users as possible. With 1.65 billion active monthly users, Facebook is currently the most popular social network site (Facebook, 2016b). However, several other social network sites have a large number of members as well. For example, 400 million people log in at least once a month to their Instagram accounts (Instagram, 2016), and Twitter and LinkedIn have 310 million (Twitter, 2016) and 106 million (LinkedIn, 2016) monthly active users, respectively.

Users spend on average 50 minutes each day interacting on Facebook and Instagram combined (Stewart, 2016). This is more than the amount of time people spend engaging in sports (17 minutes) or even socializing directly with others

(e.g., visiting friends, attending or hosting events—43 minutes). It is only somewhat less compared to the amount of time people spend eating (64 minutes) (Bureau of Labor Statistics, 2014).

What motivates people to spend so much time interacting on Facebook and similar platforms? Most people report that they do so in order to stay in touch with family and friends (Joinson, 2008). Other reasons people report include (a) connecting with old friends with whom one has lost contact, (b) connecting with others with shared hobbies or interests, (c) making new friends, (d) following celebrities, and (e) finding romantic partners (Smith, 2011). Clearly, people have many reasons for using social network sites. However, does time spent interacting with these social network sites influence subjective well-being? Before addressing this question, it is important to clarify what we mean when we use this term.

Subjective Well-Being

Subjective well-being as a concept refers to how people evaluate their life (Diener, 2009). It entails both cognitive judgments of satisfaction (i.e., cognitive subjective well-being) and affective evaluations of ones' mood and emotions (i.e., affective subjective well-being) (Diener, 1984) with high levels of subjective well-being being characterized by frequent positive affect, infrequent negative affect, and a global sense of satisfaction with life (Myers & Diener, 1995). When reviewing studies on subjective well-being in this article, we use the prefix "affective" or "cognitive" depending on how subjective well-being was measured.

Subjective well-being is generally considered to be an important, if not the most important, goal that individuals seek throughout their lives (Tay et al., 2015). For example, in a large study across 41 countries participants reported that subjective well-being is "extraordinarily important and valuable" to them (Diener, Sapyta, & Suh, 1998). Consistent with these findings, results from other studies indicate that people view subjective well-being as more important in judging quality of life than either wealth or moral goodness (Diener, 2000; King & Napa, 1998). Overall, these studies demonstrate that experiencing high levels of subjective well-being is, for most people, an end in itself. It thus represents a potentially important policy issue given the goal of policy makers to create circumstances that allow people to fulfill their aims (Bartolini, Bilancini, Bruni, & Porta, 2016; Layard, 2006).

In addition to having intrinsic value, subjective well-being is also beneficial to a wide range of valued outcomes including objective indicators of well-being (Tay et al., 2015). In particular, there is a large amount of evidence showing that subjective well-being leads to enhanced health and longevity (Boehm et al., 2011; Diener & Chan, 2011; Steptoe & Wardle, 2011). Moreover, subjective well-being improves social relationships; it promotes marital satisfaction, sociability, and prosocial behaviors, among others (Lyubomirsky, King, & Diener, 2005).

Subjective well-being also has consequences for productivity and success, including future income levels (Diener, Nickerson, Lucas, & Sandvik, 2002). Thus, policy measures that target subjective well-being may have additional downstream implications for these other policy-relevant variables as well.

Importantly, despite studies indicating that subjective well-being has a genetic basis, we now also know that it can be modified. In particular, whereas genetics account for 50% of variation among people in subjective well-being, life circumstances (10%), and intentional activities (40%) are responsible for the other half (Lyubomirsky, Sheldon, & Schkade, 2005). This suggests that there is ample room for policy makers to enhance people's subjective well-being.

A growing number of people spend an increasing amount of time on social network sites. Therefore, policy makers have a unique opportunity to enhance subjective well-being by encouraging people towards adaptively interacting with these sites. In the next section we review what is currently known about the relationship between use of social network sites and subjective well-being to inform potential policy.

Social Network Sites and Subjective Well-Being: Charting the Relationship

This section is divided into two parts. First, we discuss early empirical studies on overall social network usage and subjective well-being. This encompasses studies that assess time spent on social network sites without specifying how people interact with such sites when they are on them, as well as studies that calculate an overall social network usage index by aggregating across several ways that people use such sites (e.g., visiting profiles, posting messages or pictures). Second, we review more recent studies that examine the relationship between different forms of social network usage (i.e., active usage vs. passive usage) and subjective well-being, which presents a more granular approach.

The predictor or independent variable in most of the reviewed studies is Facebook usage. This is due to Facebook being the most popular social network site worldwide. Whenever findings pertain to another social network site, this will be explicitly noted. The outcome or dependent variable of interest is subjective well-being (see Table 1 for an overview of the reviewed studies).

Overall Usage of Social Network Sites and Subjective Well-Being

In this section, we organize our discussion of these findings around the designs used to collect them—that is, cross-sectional, longitudinal, or experimental designs. We describe work employing experimental and longitudinal frameworks in the most detail because they provide stronger designs than cross-sectional studies, which do not permit one to separate cause from effect (in contrast to experimental

studies), or draw inferences about the short- and long-term consequences of social network usage (in contrast to longitudinal studies).

Cross-sectional designs. Several cross-sectional studies have revealed a positive relationship between subjective well-being and overall usage of Facebook (Valenzuela, Park, & Kee, 2009), Instagram (Pittman & Reich, 2016), and Tuenti, which is a Spanish social network site (Apaolaza, Hartmann, Medina, Barrutia, & Echebarria, 2013). However, a number of other cross-sectional studies show an opposite pattern of results (Farahani, Kazemi, Aghamohamadi, Bakhtiarvand, & Ansari, 2011; Labrague, 2014; Lin et al., 2016; Pantic et al., 2012; Sampasakanyinga & Lewis, 2015). Other authors argue that the relationship between social network site usage and subjective well-being is more nuanced. For example, Rae and Lonborg (2015) found that Facebook usage was associated with high levels of subjective well-being among users who accessed Facebook to maintain existing relationship (e.g., keeping in touch with current friends) but was negatively associated with subjective well-being among those who accessed Facebook to create new relationships (e.g., making new friends). Valkenburg, Peter, and Schouten (2006) found in a study on CU2, a Dutch social network site, that the feedback one receives from their social connections moderates the relationship between these variables—adolescents who received predominantly positive (negative) feedback reported increases (decreases) in subjective well-being when using the social network site.

Longitudinal designs. To better understand cause and effect in these patterns of results, Kross et al. (2013) asked people to report several times a day (for a 2-week period) how much they used Facebook and how they felt. They found that Facebook usage predicted decreases in affective subjective well-being over time such that participants felt 8% worse when they engaged Facebook usage “a lot” during the time period between any two affect assessments compared to when they did not use Facebook at all. In contrast, affective subjective well-being did not predict subsequent changes in Facebook usage. This implies that usage of Facebook was more likely to influence subjective well-being rather than the other way around. Moreover, mean levels of Facebook usage during the 2-week study period also predicted declines in cognitive subjective well-being across the study period. These relationships were not moderated by size of people’s Facebook networks, their perceived supportiveness, motivation for using Facebook, gender, loneliness, self-esteem, or depression. Compared to the cross-sectional studies reviewed above, this longitudinal study constituted a major step forward as it provided evidence on the likely causal sequence underlying the relationship between social network sites and subjective well-being.

Experimental designs. Sagioglou and Greitemeyer (2014) assigned participants to either a Facebook use condition (i.e., spending 20 minutes on Facebook),

an Internet use condition (i.e., spending 20 minutes browsing the internet without using social network sites), or a control condition (i.e., immediately completing the postmanipulation questionnaires). Participants in the Facebook use condition reported lower levels of affective subjective well-being compared to the other two conditions.

Recently, in a large scale study ($n = 1,095$), researchers of the Happiness Research Institute in Denmark further tested whether Facebook use influences subjective well-being (Tromholt, Marie, Andsbjerg, & Wiking, 2015). After evaluating their lives on several dimensions, half of the participants were allocated to a treatment condition (i.e., do not use Facebook for an entire week), whereas the other half were allocated to a control condition (i.e., continue to use Facebook as usual). One week later participants evaluated their lives again. After 1 week without Facebook, the treatment group reported significantly higher levels of affective and cognitive subjective well-being.

Conclusions. Initial cross-sectional studies on the relationship between overall usage of social network sites and subjective well-being resulted in a mixed pattern of findings. The pattern has become clearer, however, when stronger research designs started to be used. In particular, Kross et al. (2013) were the first to study changes in both Facebook usage and subjective well-being over time and found that Facebook usage predicted declines in both affective and cognitive subjective well-being. Subsequent experimental studies confirmed that overall usage of social network sites negatively impacts subjective well-being. In the next section, we add nuance to this conclusion, however, by making a distinction between different types of social network site usage.

Specific Types of Usage of Social Network Sites and Subjective Well-Being

Most social network sites allow for a range of activities. These activities can be broadly classified into two categories: active and passive usage (Burke, Marlow, & Lento, 2010; Deters & Mehl, 2013; Krasnova, Wenninger, Widjaja, & Buxmann, 2013; Verduyn et al., 2015).

Active usage refers to activities that facilitate direct exchanges with other(s). It encompasses both targeted one-on-one exchanges (i.e., directed communication, Burke et al., 2011) as well as nontargeted exchanges (i.e., broadcasting, Burke et al., 2011). During active usage of social network sites information is often produced, as when posting a status update, sharing links, or sending private messages on Facebook. The term can also be applied to other social network sites. For example, Tweeting (i.e., posting a short message) or uploading a picture could be considered active ways of using Twitter and Instagram, respectively.

Passive usage refers to the monitoring of other people's lives without engaging in direct exchanges with others. During passive usage of social network sites,

information is typically consumed without communicating with the owner of the content. Typical examples of passive usage on Facebook are scrolling through news feeds or looking at other users' profiles, pictures, and status updates. Again, the term can also be applied to other social network sites. For example, reading Tweets or looking at Instagram pictures represent passive ways of interacting on those platforms.

Importantly, active and passive usage of social network sites are associated with different subjective well-being outcomes. Below we review relevant empirical studies, again making a distinction between cross-sectional, longitudinal and experimental studies.

Cross-sectional designs. Several cross-sectional studies have linked the passive usage of social network sites with reduced levels of subjective well-being (Krasnova et al., 2015, 2013; Shaw, Timpano, Tran, & Joormann, 2015; Tandoc, Ferrucci, & Duffy, 2015). In contrast, self-disclosure on Facebook (i.e., active Facebook usage) has been found to correlate positively with subjective well-being (Kim & Lee, 2011; Kim, Chung, & Ahn, 2013; Lee, Lee, & Kwon, 2011; Wang, 2013). Two recent studies provided evidence for moderation by gender, with female Facebook users especially benefiting from active Facebook use possibly due to female users being more socially skilled and less involved in negative online interactions than their male counterparts (Frison & Eggermont, 2015a; Simoncic, Kuhlman, Vargas, Houchins, & Lopez-duran, 2014).

Longitudinal studies. More recently, researchers have begun to use longitudinal designs to examine the impact of active and passive usage of social network sites on subjective well-being. In one diary study, active Facebook use was found to be positively related to life satisfaction, whereas the opposite was observed for passive Facebook use (Wenninger, Krasnova, & Buxmann, 2014). However, it should be noted that in this study only Facebook usage was repeatedly assessed. Thus these findings do not speak to whether different types of social network usage predicted changes in subjective well-being over time. In an experience sampling study (Verduyn et al., 2015), active Facebook usage was not found to be related to changes in affective or cognitive subjective well-being. In contrast, passive Facebook usage predicted declines in affective subjective well-being over time. As in prior work, this relationship was not moderated by participants' number of Facebook friends, their perceptions of Facebook network support, depressive symptoms, loneliness, gender, self-esteem, or their motivations for using Facebook. Specifically, participants felt 5% worse when they engaged in passive Facebook usage "a lot" during the time period separating any two affect assessments compared to when they did not use Facebook passively at all. The reverse relationship (i.e., affective subjective well-being predicting changes in passive Facebook use over time) was not significant. Passive Facebook usage was not, however, related

to changes in cognitive subjective well-being. Finally, in a two-wave panel study (Frison & Eggermont, 2015b), it was found that active (passive) Facebook usage was related to increases (decreases) in affective subjective well-being.

Experimental designs. Verduyn et al. (2015) used an experimental design to contrast the effects of active and passive Facebook usage on subjective well-being. Half of the participants were instructed to use Facebook actively in the lab for 10 minutes. The other half were told to use Facebook passively for 10 minutes. Immediately after the manipulation, no difference in affective subjective well-being between the two conditions was observed. However, at the end of the day, participants in the passive Facebook condition reported lower levels of affective subjective well-being compared to how they felt immediately before and after the manipulation as well as compared to the active Facebook condition. The manipulation was not found to impact cognitive subjective well-being. In another experimental study, passive Facebook usage was contrasted with visiting a control website (Fardouly, Diedrichs, Vartanian, & Halliwell, 2015). Participants who were instructed to spend time on Facebook reported being in a more negative mood than those who spent time on the control website.

Conclusion. Compared to research assessing overall levels of social network usage, studies on the relationship between types of social network usage and subjective well-being provide a clearer picture. One can conclude that passive usage is associated with low levels of subjective well-being even though more longitudinal and experimental studies are needed to determine the size of this effect. The relationship between active usage of social network sites and subjective well-being is more tenuous, with most but not all studies reporting a positive relationship. In this vein, it is important to note that passive usage of social network sites is more frequent than active usage, at least on Facebook (Constine, 2012; Pempek, Yermolayeva, & Calvert, 2009; Verduyn et al., 2015). For example, one study (Verduyn et al., 2015) found that participants used Facebook passively about 50% more than they used it actively. As such, passive Facebook usage may underlie the observed negative association between overall measures of time spent on Facebook and subjective well-being (Krasnova et al., 2015; Verduyn et al., 2015).

Social Network Sites and Subjective Well-Being: Explaining the Relationship

In this section, we review what is currently known about the mechanisms underlying the effects of social network site usage on subjective well-being focusing specifically on the role that social capital and social comparisons play in mediating the above described effects. This does not imply that these are the

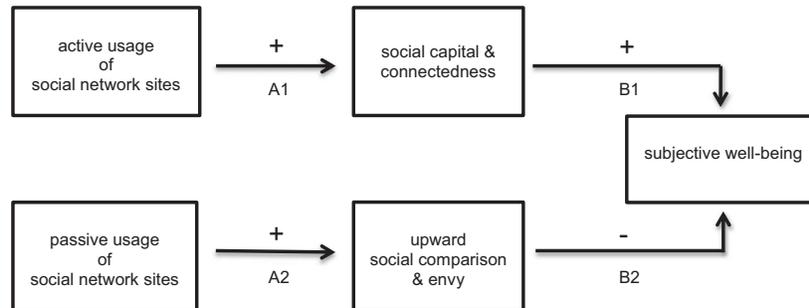


Fig. 1. The relation between social network sites and subjective well-being. Active usage of social network sites increases social capital and feelings of connectedness (path A1), which, in turn, positively impact subjective well-being (path B1). Passive usage of social network sites stimulates upward social comparisons and envy (path A2), which, in turn, negatively impact subjective well-being (path B2).

only mechanisms that account for the relationship between social network sites and subjective well-being. Other mechanisms that have been proposed include the perception of having wasted time (Sagioglou & Greitemeyer, 2014), brooding or worrying (Shaw et al., 2015), and information overload (Koroleva, Krasnova, & Günther, 2010). However, in contrast to social capital and social comparisons, these other mechanisms have not been frequently studied and, consequently, their possible mediating role in the relationship between social network sites and subjective well-being is not yet equally well established.

For each of the proposed mediators we first briefly describe the wide range of studies that confirm their significant effects on people's subjective well-being (see Figure 1, path B1 and B2 of the mediation model). Next, we discuss at a theoretical and empirical level how different ways of using social network sites influence these proposed mediators (see Figure 1, path A1 and A2 of the mediation model). Finally, we review empirical studies that directly test the full mediation model.

Positive Consequences of Active Usage of Social Network Sites: Social Capital and Connectedness

Social capital and connectedness impact subjective well-being. Humans have a fundamental need to create and maintain interpersonal relationships (Baumeister & Leary, 1995). Therefore, it should come as no surprise that research reveals a robust reciprocal link between subjective well-being and positive social relationships (Myers, 2000). On the one hand, subjective well-being promotes marital satisfaction, sociability, and prosocial behaviors (Lyubomirsky, King, & Diener, 2005). On the other hand, having close friends and a network of social support has positive effects on subjective well-being too, and to such a degree that it has

Table 1. Overview of Reviewed Studies on the Relationship between Social Network Sites and Subjective Well-Being

Authors	Year	Design	IV	DV	Relation	IV-measure	DV-measure
Valenzuela, Park, and Kee	2009	CS	OU	cSWB	+	intensity of FB use	SWL
Pittmann and Reich	2016	CS	OU	aSWB	+	time spent on Instagram	happiness
	2016	CS	OU	cSWB	+	time spent on Instagram	SWL
Aparolaza et al.	2013	CS	OU	cSWB	+	time spent on Tuenti	SWL
	2011	CS	OU	aSWB	-	amount of FB use	depression, anxiety and stress (r)
Farahani et al.	2014	CS	OU	aSWB	-	time spent on FB	depression, anxiety and stress (r)
Labrague	2016	CS	OU	aSWB	-	frequency and time spent on SNS	symptoms of depression (r)
Lin et al.	2012	CS	OU	aSWB	-	time spent on SNS	symptoms of depression (r)
Pantic et al.	2015	CS	OU	aSWB	-	time spent on SNS	symptoms of depression and anxiety (r)
Sampasa-Kanyinga and Lewis	2015	CS	OU	SWB	mod	time spent on FB	psychological well-being
Rae and Lonborg	2006	CS	OU	cSWB	mod	frequency and time spent on CU2	SWL
Valkenburg, Peter, and Schouten	2013	LT	OU	aSWB	-	amount of FB use	bipolar emotional valence scale
Kross et al.	2013	LT	OU	cSWB	-	amount of FB use	SWL
	2014	EXP	OU	aSWB	-	FB use vs. internet use vs. no activity	positive and negative affect
Sagioglou and Greitemeyer	2015	EXP	OU	cSWB	-	FB use vs. no FB use	SWL
Tromholt et al.	2015	EXP	OU	aSWB	-	FB use vs. no FB use	positive and negative affect
	2013	CS	PU	cSWB	-	multi-item measure of PU on FB	SWL
Krasnova et al.	2015	CS	PU	cSWB	-	multi-item measure of PU on FB	SWL
	2015	CS	PU	aSWB	-	multi-item measure of PU on FB	sadness (r)
Shaw et al.	2015	CS	PU	aSWB	-	multi-item measure of PU on FB	social anxiety symptoms (r)
	2015	CS	PU	aSWB	-	multi-item measure of PU on FB	symptoms of depression (r)

(Continued)

Table 1. Continued

Authors	Year	Design	IV	DV	Relation	IV-measure	DV-measure
Kim and Lee	2011	CS	AU	aSWB	+	multi-item measure of AU on FB	happiness
Kim, Chung, and Ahn	2013	CS	AU	aSWB	+	multi-item measure of AU on SNS	happiness
Lee, Lee, and Kwon	2011	CS	AU	aSWB	+	multi-item measure of AU on SNS	positive and negative affect
	2011	CS	AU	cSWB	+	multi-item measure of AU on SNS	SWL
Wang	2013	CS	AU	cSWB	+	multi-item measure of AU on FB	SWL
Frison and Eggermont	2015a	CS	AU	aSWB	mod	multi-item measure of AU on FB	symptoms of depression (r)
Simonic et al.	2014	CS	AU	aSWB	mod	multi-item measure of AU on FB	symptoms of depression (r)
Weninger, Krasnova, and Buxmann	2014	LT	AU	cSWB	+	chatting and posting on FB	SWL
	2014	LT	PU	cSWB	-	single-item measure of PU on FB	SWL
Verduyn et al. (study 2)	2015	LT	AU	aSWB	n.s.	single-item measure of AU on FB	bipolar emotional valence scale
	2015	LT	AU	cSWB	n.s.	single-item measure of AU on FB	SWL
	2015	LT	PU	aSWB	-	single-item measure of AU on FB	bipolar emotional valence scale
	2015	LT	PU	cSWB	n.s.	single-item measure of PU on FB	SWL
Frison and Eggermont	2015b	LT	AU	aSWB	+	multi-item measure of AU on FB	symptoms of depression (r)
	2015	LT	PU	aSWB	-	multi-item measure of PU on FB	symptoms of depression (r)
Verduyn et al. (study 1)	2015	EXP	PU	aSWB	-	passive use vs. active use	bipolar emotional valence scale
	2015	EXP	PU	cSWB	n.s.	passive use vs. active use	SWL
Fardouly et al.	2015	EXP	PU	aSWB	-	browse FB vs. control website	positive and negative affect

CS = cross-sectional, LT = longitudinal, EXP = experimental, IV = independent variable, OU = overall usage, AU = active usage, PU = passive usage, DV = dependent variable, cSWB = cognitive Subjective Well-Being, aSWB = affective Subjective Well-Being, mod = moderated, n.s. = not significant, FB = Facebook, SNS = Social Network Sites, SWL = satisfaction with life, (r) = reversely related to subjective well-being.

been suggested that social relationships could be the single most important source of subjective well-being (Reis & Gable, 2003). In this vein, a now classic study on happiness demonstrated that every participant who scored high on subjective well-being had excellent social relationships (Diener & Seligman, 2002).

The benefits obtained from one's social relationships or social network are often referred to by the term "social capital." Formally, Bourdieu (1985) defined social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (p. 51). The term social capital tends to be used primarily by sociologists and political scientists, whereas psychologists often refer to a related concept using the term "social support" (Burke et al., 2011).

Two types of social capital have been distinguished: bridging and bonding (Putnam, 2000). Bridging social capital refers to having access to new information, being exposed to diverse perspectives and feeling part of a broader community. This type of social capital is mainly provided by acquaintances or weak-ties. Bonding social capital refers to receiving emotional support, instrumental support and companionship. This type of social capital is largely derived from one's inner circle of connections (i.e., strong ties) such as close friends and family members. Both bridging and bonding social capital have been found to be positively related to subjective well-being (Ferlander, 2007; Helliwell & Putnam, 2004; Steinfield, Ellison, & Lampe, 2008).

Active usage of social network sites affects social capital and connectedness.

Social network sites are aimed at satisfying people's need to create and establish social relationships. For example, Facebook's mission is "to give people the power to share and make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them" (Facebook, 2016a).

Compared to offline settings (e.g., face-to-face conversations), social network sites provide unique opportunities for users to increase their social capital (Ellison & Vitak, 2015). In particular, in offline settings people often do not have the time or energy to maintain a large number of weak ties. However, the cost of maintaining relationships on social network sites is comparatively low, and these sites may allow for a strong expansion of one's social network. This, in turn, may increase access to various resources including novel information and diverse perspectives (Donath & Boyd, 2004; Donath, 2008). Moreover, social network sites have the capacity to change latent ties (i.e., ties that are technically possible but are not yet activated; Haythornthwaite, 2005) into weak or even strong ties. Further, social network sites might help individuals maintain weak or strong ties that would otherwise become extinguished due to an absence of offline interactions (e.g., high school friends who stay in touch on Facebook despite living in different countries). In sum, social network sites seem to be well suited for increasing bridging social

capital by allowing users to maintain large networks of connections and even possibly bonding social capital by allowing users to stay in touch with friends and providing a medium through which support can be sought and provided.

Researchers have examined whether usage of these social network sites indeed increases levels of social capital. In initial studies using cross-sectional designs, positive associations were observed between overall usage of social network sites and social capital (e.g., Ellison, Steinfield, & Lampe, 2007; Steinfield et al., 2008). However, recent studies have revealed that the way people use online social networks matters, not unlike the case for the relationship between usage of social network sites and subjective well-being. These more recent studies are discussed below.

Cross-sectional designs. Active engagement on Facebook has been shown to be negatively related to loneliness (i.e., active usage promotes feeling connected), whereas the opposite holds for passive engagement (Matook, Cummings, & Bala, 2015; Ryan & Xenos, 2011). Similarly, when examining server logs of participants' activity on Facebook (Burke et al., 2010), active Facebook usage was found to be associated with greater feelings of bonding social capital and lower levels of loneliness. The opposite pattern of results was found for passive Facebook usage. Koroleva, Krasnova, Veltri, and Günther (2011) examined a range of social capital benefits. Both active and passive Facebook usage increased levels of social capital, but the former was related to more social capital outcomes compared to the latter.

Longitudinal designs. Burke et al. (2011) showed that directed communication (i.e., active Facebook usage) predicted increases in bridging social capital. However, neither active nor passive Facebook usage was found to predict changes in bonding social capital. In contrast, in a more recent longitudinal study (Burke & Kraut, 2014), relationship closeness between friends (i.e., bonding social capital) was found to increase with one-on-one communication (i.e., active Facebook usage) as well as through reading friends' broadcasted content (i.e., passive Facebook usage).

Experimental designs. Deters and Mehl (2013) tested the psychological effects of posting status updates on Facebook. For 1 week, participants in the experimental condition were asked to post more than they usually do. Participants in the control condition received no instructions. Results indicated that the experimentally induced increase in status updating activity increased feelings of social connectedness and reduced loneliness. In another experiment, participants were either instructed to use Facebook as they normally do (post-as-usual condition) or to refrain from using Facebook actively for 2 days (do-not-post condition). Participants in the do-not-post condition were found to report lower levels of belonging (Tobin, Vanman, Verreynne, & Saeri, 2014).

In sum, whereas evidence for passive usage is mixed, studies reveal a positive relationship between active usage of social network sites and social capital. Given the effects that social relationships have on subjective well-being, the positive effect of active usage of social network sites on subjective well-being may be partially due to an increase in social capital and associated feelings of social connectedness.

Direct tests of the meditation model. Recently, a number of studies have begun to provide direct evidence for the proposed mediating role of social capital and social connectedness. In a cross-sectional study (Frison & Eggermont, 2015a) data were collected from a large sample of adolescents to explore the relationship between different types of Facebook use, perceived online social support and depressive symptoms. Using structural equation modeling, evidence was obtained that active Facebook use increases perceived online social support, which in turn predicted a decrease in depressive symptoms. It should be noted, however, that this relationship was only found for female participants.

Similarly, Kim and Lee (2011) also conducted a cross-sectional study among college students to explore the relationship between self-presentation (i.e., active usage of social network sites), perceived online support and subjective well-being. Self-presentation was found to have a positive effect on subjective well-being mediated by perceived social support but only when self-presentation was honest. A study by Frison and Eggermont (2015b) established that active Facebook usage positively predicts perceived Facebook support, which in turn predicts a decrease in depressed symptoms at the next assessment.

In sum, the available evidence suggests that the positive impact of active usage of social network sites on subjective well-being is due to an increase in social capital. However, future longitudinal and experimental research is needed to confirm the temporal location of each of the constructs in the proposed mediation model and the causal nature of the proposed relationships.

The Negative Consequences of Passive Usage of Social Network Sites: Social Comparison and Envy

Social comparisons and envy impact subjective well-being. Aside from a fundamental need for relatedness, people also have a drive to evaluate their opinions and abilities (Festinger, 1954). This drive encompasses a desire to reduce uncertainty (Gibbons & Buunk, 1999) and establish one's standing (Brown, Ferris, Heller, & Keeping, 2007). In many circumstances objective bases for self-evaluation are not present: For example, is running 100 m in 14 seconds fast? In such cases self-evaluation depends upon how one compares oneself with other people, a process called "social comparison" (Festinger, 1954). Formally, social comparisons are defined as "comparative judgments of social stimuli

on particular content dimensions” (Kruglanski & Mayseless, 1990, p. 196). A distinction is made between upward and downward comparisons (Buunk & Gibbons, 1997; Wills, 1981). In upward comparisons one perceives the other as better on a particular dimension whereas the opposite holds for downward comparisons.

In the case of upward comparisons envy is frequently experienced. Envy is defined as “an unpleasant and often painful blend of feelings characterized by inferiority, hostility, and resentment caused by a comparison with a person or group of persons who possess something we desire” (Smith & Kim, 2007, p. 49). Envy is not only an unpleasant experience in itself: a wide range of studies indicate that envy has negative consequences for subjective well-being (Cohen-Charash, 2009; Smith, Parrott, Diener, Hoyle, & Kim, 1999; Vecchio, 2000)

Passive usage of social network sites elicits social comparison and feelings of envy. To make social comparisons, information about others is needed. On social network sites, only a mouse click stands between the user and an enormous amount of information about others. Thus, social comparison can be carried out on an unprecedented scale. Moreover, compared to offline settings, most social network sites have a number of features that make the occurrence of upwards social comparisons and the feeling of envy especially likely. First, social network sites typically allow for asynchronous communication such that there is ample time to post a witty comment or a nice picture. This further allows people to portray themselves in overly flattering ways (Barash, Ducheneaut, Isaacs, & Bellotti, 2010; Kross et al., 2013; Mehdizadeh, 2010; Newman, Lauterbach, Munson, Resnick, & Morris, 2011) and may elicit upward social comparisons in the receiver of this information. Second, several social network sites provide functionalities to easily connect with and become informed of *similar* others who post information that is *relevant* for the perceiver—features that tend to increase the probability of experiencing envy (Hill & Buss, 2006; Salovey & Rodin, 1991).

Researchers have examined whether usage of social network sites indeed stimulates upward social comparison and envy. Initial studies found evidence for this relationship (Chou & Edge, 2012; Jang, Park, & Song, 2016; Lee, 2014; Muise, Christofides, & Desmarais, 2009; Steers & Wickham, 2014). However, similar to research on the effect of social network sites on subjective well-being and social capital, it has become clear that only particular ways of using social network sites will lead to upward social comparisons and envy.

Cross-sectional designs. In several cross-sectional studies a positive relationship was found between passive usage of Facebook and envy, but no significant

relationship was observed for active Facebook usage (Krasnova et al., 2015, 2013; Tandoc et al., 2015). It is notable that in a recent study, participants reported experiencing positive emotions more often than envy upon reading positive Facebook posts (Lin & Utz, 2015). However, this comparison between positive emotion and envy is not informative because people do not readily admit feeling envy. Using indirect assessments of envy frequency, Krasnova et al. (2013, 2015) concluded that envy is a common consequence of following information about others on Facebook, and even more common than the experience of positive emotions.

Longitudinal designs. Only one study that we are aware of has examined the longitudinal relationship between social network usage and envy. Specifically, in an experience sampling study on Facebook usage in young adults Verduyn et al. (2015) found that passive Facebook usage increases feelings of envy over time.

Experimental designs. Several experiments indicate that passively browsing Facebook has negative consequences for people who naturally tend to engage in social comparisons. This provides indirect evidence that passive usage of social network sites is a fertile ground for envy to occur. For example, compared to visiting a control website, female participants with a strong tendency to compare their attractiveness to others were less satisfied with their physical appearance upon browsing Facebook for 10 minutes (Fardouly et al., 2015). Similarly, compared to looking at one's own Facebook profile or visiting a control website, participants who tend to engage in social comparisons had poorer self-perceptions after looking at a friend's Facebook profile (Vogel, Rose, Okdie, Eckles, & Franz, 2015).

In other experiments, the nature of the content that participants were exposed to on social network sites was manipulated. Participants either passively browsed Facebook pages of high (e.g., users who are attractive or have a successful career) or low comparison standards. Overall, participants reported lower levels of subjective well-being and higher levels of envy upon exposure to attractive or successful profiles (Appel, Crusius, & Gerlach, 2015; Haferkamp & Krämer, 2011; Vogel, Rose, Roberts, & Eckles, 2014). Finally, Verduyn et al. examined whether passive Facebook usage resulted in higher levels of social comparisons compared to active Facebook usage. Contrary to their hypothesis, the groups did not differ in the degree to which they perceived their own life as worse compared to that of others (Verduyn et al., 2015). However, Verduyn et al. speculated that the reason for the null effect in this study may have been a result of how they asked participants to rate their envy (for complete discussion see Verduyn et al., 2015), and follow-up data that they provided in a second longitudinal study was consistent with their argument.

Direct evidence for the proposed mediation model. A number of recent studies provide direct evidence for the role that upward social comparisons and envy play in mediating the links between passive usage of social network sites and declines in subjective well-being. Specifically, several cross-sectional studies have found that envy mediates the relationship between passive usage of social network sites and subjective well-being (Krasnova et al., 2015, 2013; Tandoc et al., 2015). Experimental and longitudinal work testing the full mediation pathway is scarce. An exception, however, is a recent longitudinal study, which demonstrated that the negative effect of passive Facebook usage on subjective well-being is mediated by envy (Verduyn et al., 2015). In particular, using an experience sampling design, passive Facebook usage predicted increases in envy, which, in turn, predicted decreases in affective subjective well-being at the next assessment.

Finally, it is notable that beyond having an impact on subjective well-being, envy also triggers a number of potentially ineffective coping styles. One such style is engaging in self-enhancement strategies (i.e., stressing one's strengths) to diminish the sense of inferiority triggered by envy (Brown & Gallagher, 1992; Salovey & Rodin, 1988). Even though this may be a suitable strategy to deal with envy, this behavior may ironically elicit envy in others resulting in a "self-enhancement envy spiral" (Krasnova et al., 2015). For example, being exposed to beautiful holiday pictures may lead one to upload similar pictures, which, in turn, causes others to experience envy and initiate similar self-enhancing behavior.

From Data to Policy: Some Suggestions

The popularity of social media has influenced policy at different levels. At the governmental level, guidelines have been formulated to limit recreational screen time to two hours per day for children, even though these guidelines are not specific to use of social network sites (Tremblay et al., 2011). Moreover, recommendations have been offered to the general population on how to protect their privacy when using social network sites (Federal Trade Commission, 2016; Information Commissioner's Office, 2016) and to social network site providers on how to enhance the safety of young people and children using their services (UK Council for Child Internet Safety, 2016). However, guidelines aimed at using social network sites to specifically foster subjective well-being at a societal level are, on the whole, lacking.

At the organizational level many companies have implemented social media policies (e.g., adidas, 2011; Los Angeles Times, 2009). These policies typically include employee guidelines on how to interact on social network sites without damaging the interests of their employer. These policies usually instruct employees to (a) not use social network sites excessively while working, (b) be respectful when communicating on social network sites, (c) not discuss confidential information,

and (d) clearly mention when expressed views are one's own rather than their employer's. However, such guidelines are primarily formulated with the interests of the company in mind rather than the subjective well-being of the broader population.

At the level of households, many parents have installed rules for their children regarding usage of social network sites. For example, 55% of parents limit the amount of time that their children can go online, 60% of parents check their children's social media profile and 78% of parents talk occasionally or even frequently about what constitutes appropriate online behavior (Anderson, 2016). The high levels of parental oversight that these percentages capture suggest that parents would likely welcome evidence-based recommendations for usage of social network sites that they could transfer to their children.

Below, we formulate empirically-based recommendations for policy makers on how to (a) educate the general population about the most productive ways of using social network sites to improve subjective well-being, (b) support researchers to deepen our understanding of adaptive usage of social network sites, and (c) stimulate social network site providers to adjust their platforms in order to nudge users to ways of using their sites that enhance subjective well-being. Note that the recommendations that follow are aimed primarily at policy makers at the governmental level, but we expect that their implementation could eventually impact lower levels as well (e.g., educating the population on proper usage of social networks can be expected to lead to changes in parental rules regarding social media usage). The material below is organized around the potential targets of the policy recommendations.

General population. Policy makers should educate the public on how to use social networks to enhance subjective well-being. For this purpose, one could inform the larger public (e.g., through informational campaigns) or specific sub-groups (e.g., through courses on social media literacy as part of school curricula) on what constitutes adaptive social network usage. Until recently this was an impossible task for policy makers simply because of a lack of empirical evidence indicating how people can use social network sites in ways that specifically enhance subjective well-being. Indeed, in a 2008 article on policy recommendations regarding usage of social network sites, the authors concluded by stating: "In writing this article, we have struggled to find sufficient empirical research on which to ground our claims" (Livingstone & Brake, 2010, p. 9).

As we show in this article, the literature on this issue has since increased dramatically, providing the potential for evidence-based guidelines on what constitutes adaptive usage of social network sites. Below, we describe three key messages that should be stressed in any educational campaign on adaptive usage of social network sites:

- (1) Excessive passive usage of social network sites should be avoided, as this type of usage is found to be negatively related to subjective well-being. The fact that social network sites are used passively, rather than actively, most of the time only underscores the importance of communicating this finding to the population (Constine, 2012; Pempek et al., 2009; Verduyn et al., 2015) in a way that is accessible and understandable.
- (2) Positive news is more often shared on social network sites than negative news (Kross et al., 2013; Verduyn et al., 2015) and people tend to portray themselves in overly flattering ways (Mehdizadeh, 2010; Newman et al., 2011). Informing people about this may lower the impact of being exposed to information about others when passively browsing social network sites as damaging social comparisons are less likely to take place.
- (3) Active usage of social network sites has no negative consequences for subjective well-being and likely has positive consequences. To stimulate active usage of social network sites, one could stress that these sites provide a unique opportunity to connect to others, increase one's social capital and feelings of social connection. However, in order for these positive consequences to occur, social network sites have to be used actively rather than passively.

Researchers. During the last decade social network sites partially moved the interactions people have with one another from offline (i.e., “face-to-face”) to online contexts. This shift is likely to continue creating novel challenges for researchers to address. New social network sites enter the market at a fast pace and existing social network sites are continuously changing. As such, researchers need to continuously test the validity of their theories on social network sites; this includes researchers examining the consequences of usage of social network sites for subjective well-being. Thus, policy makers should consider expanding the scope of funding available to conduct this type of research. Such funding should be aimed at extending our current knowledge on the topic and avoiding the pitfalls of the past. Below, we suggest three elements for funding agencies to take into account:

- (1) Most studies on the relationship between social network sites and subjective well-being make use of cross-sectional designs. As we have attempted to clarify in this review, these studies sometimes create more confusion than clarity, further amplified by the media coverage that they have received. Currently, there is a need for more longitudinal and experimental research as these stronger research designs position researchers to more confidently draw inferences about cause and effect, as well as short- and long-term consequences.

- (2) Research on the relation between social network sites and subjective well-being has mainly relied on samples consisting of adolescents and young adults. Although young people represent a significant user base of social network sites, older adults are increasingly attracted to social network sites as well (Perrin, 2015). Moreover, a recent study (Hayes, van Stolk-cooke, & Muench, 2015), demonstrated that older adults use Facebook less actively than young adults. As such, more research using older participant samples should be supported.
- (3) Most studies on social network sites focus on Facebook. Arguably, this is due to Facebook still being the most often used social network site. However, many other social network sites boast a high number of users. As each social network site constitutes a partially unique context for interaction, research should be supported that focuses on identifying the contextual features that impact subjective well-being (which are possibly shared by several social network sites) rather than merely replicating findings across different social network sites (Mcfarland & Ployhart, 2015).

Providers of social network sites. Providers of social network sites would only gain from having their technologies contribute to the subjective well-being of their users. Based on the current review, we offer two recommendations for policy makers on how to reach out to providers of social network site:

- (1) Encourage providers of social network sites to collaborate with researchers to identify the features of their social network sites that enhance rather than undermine subjective well-being. One way to do so is to convince providers to share anonymized data such that researchers can rely on objective assessments of social network usage. Currently, most researchers have to rely on self-report or time-consuming coding procedures (e.g., copying and manually coding Facebook wall data) to attain objective measures (Deters & Mehl, 2013; Park et al., 2016).
- (2) Encourage providers of social network sites to consider ways of integrating insights from basic research to enhance the benefits that their products provide to their users in terms of subjective well-being. For this purpose, providers could, for example, use these insights to develop interfaces that nudge users towards adaptive usage patterns.

Concluding Thoughts

Does usage of social network sites increase or decrease subjective well-being? Based on the literature available at this time, the answer is: It depends on how one uses them. Social network sites have the potential to increase our subjective

well-being by allowing us to increase our social capital and feeling of connectedness due to active usage of these sites. However, they can also be a significant cause of distress, especially when they elicit social comparisons and envy due to passive usage of these sites.

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PHILIPPE VERDUYN is an Assistant Professor at Maastricht University (Netherlands) and a postdoctoral research fellow of the Fund for Scientific Research—Flanders (FWO) at KU Leuven University (Belgium). He received his PhD in psychology from KU Leuven University in 2012. His main research topics are emotion dynamics, emotion regulation, well-being and social network sites. In 2015, he received the “Rising Star” designation from the Association for Psychological Science (APS) as a recognition of his early-career contributions.

OSCAR YBARRA is Professor of Psychology at the University of Michigan, Professor of Management and Organizations (courtesy) at the Ross School of Business, and Faculty Associate at the Research Center for Group Dynamics at the Institute for Social Research. Oscar’s research revolves around the social underpinnings of cognition, intelligence and wellbeing, how people navigate their web of relations with others, and how people balance connecting socially with the need to pursue and protect personally valued goals.

MAXIME RÉSIBOIS is a PhD student at KU Leuven University (Belgium). He completed his bachelor’s and master’s degree in Psychology at UC Louvain (Belgium). His main research topics are affective neuroscience, emotion dynamics, emotion regulation, well-being, and mood disorders.

JOHN JONIDES is the Edward E. Smith Professor of Psychology and Neuroscience at the University of Michigan. His research is concerned with basic and translational issues having to do with cognitive control and cognitive training in humans. His research spans the use of behavioral, neuroimaging, and neurostimulation techniques and has been funded by the National Institutes of Health and the National Science Foundation among other agencies.

ETHAN KROSS is a Professor in the Department of Psychology at the University of Michigan and the Director of the University of Michigan Emotion and Self-Control Laboratory. His research explores how people can control their emotions to improve our understanding of how self-control works, and to discover ways of enhancing self-control in daily life. He adopts an integrative approach to address these issues that draws on multiple disciplines within psychology including social, personality, clinical, developmental, and neuroscience.

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Effects of the News-Finds-Me Perception in Communication: Social Media Use Implications for News Seeking and Learning About Politics

Homero Gil de Zúñiga

Media Innovation Lab, Department of Communication, University of Vienna, Währingerstraße 29, 1090 Vienna, Austria

Facultad de Comunicación y Letras, Universidad Diego Portales, Manuel Rodríguez Sur 415, Santiago, Chile

Brian Weeks

Department of Communication Studies and Center for Political Studies, University of Michigan, 5432 North Quad, 105 S State St, Ann Arbor, MI 48109

Alberto Ardèvol-Abreu

Departamento de Comunicación y Trabajo Social, Universidad de La Laguna, Av. César Manrique s/n (Campus de Guadajajara), S/C de Tenerife 38071, Spain

With social media at the forefront of today's media context, citizens may perceive they don't need to actively seek news because they will be exposed to news and remain well-informed through their peers and social networks. We label this the "news-finds-me perception," and test its implications for news seeking and political knowledge: "news-finds-me effects." U.S. panel-survey data show that individuals who perceive news will find them are less likely to use traditional news sources and are less knowledgeable about politics over time. Although the news-finds-me perception is positively associated with news exposure on social media, this behavior doesn't facilitate political learning. These results suggest news continues to enhance political knowledge best when actively sought.

Keywords: News-finds-me Perception, News-finds-me Effect, News Use, Political Knowledge, Social Media.

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Citizens today arguably have more opportunities to encounter news and political information than ever before. In addition to traditional media outlets such as television, newspapers, and radio, the ubiquity of news on the Internet and within social media offer people the possibility to be exposed to news whether or not they actively seek it out (Hermida, 2010; Gil de Zúñiga & Hinsley, 2013; Pew, 2016). At first glance,

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the widespread availability of news might be considered ideal for producing better-informed citizens, especially given that both the volume and breadth of news in the media environment promote learning about politics (Barabas & Jerit, 2009) and that unintentional news exposure can facilitate political knowledge (Shehata, Hopmann, Nord, & Höijer, 2015; Tewksbury, Weaver, & Maddex, 2001).

While the abundance of media options may provide citizens more opportunities to learn from the news, some scholars argue that this high-choice media environment may instead have negative democratic consequences by enhancing political knowledge gaps based on content preferences, interest, and usage patterns. Here, individuals who seek out and take advantage of the plethora of news available may benefit most from political news, while those who do not purposefully seek news will not see gains in political knowledge despite the wealth of information in the media environment (e.g. Hopmann, Wonneberger, Shehata, & Höijer, 2016; Prior, 2007; Wei & Hindman, 2011). Thus, one of the central aspects of this debate is whether political learning is dependent on citizens actively seeking news and political information or whether people can passively learn about politics through incidental exposure (Shehata et al., 2015).

If scholars are interested in whether or not political learning is predicated on active news engagement, it also becomes necessary to better understand how citizens' perceptions of the contemporary media environment relate to news exposure patterns. Within this context, one unexplored possibility is that the glut of news, particularly on the Internet and within social media, may negatively impact whether people actively seek news and ultimately whether they learn from it. Although traditional news outlets such as television news and newspapers continue to remain popular among certain segments of the population, many Americans, especially younger adults, are also increasingly exposed to news via websites, apps, and social networking sites like Facebook and Twitter (Pew, 2016); these social media in particular have changed how people receive news. Social media create a confluence of news by simultaneously providing users news not only from traditional media outlets but also news created and shared by others in the social network. As a result, users within these social networks can be exposed to news directly by actively seeking it, or incidentally, without any explicit effort of their own, through their use of these sites (Kim, Chen, & Gil de Zúñiga, 2013; Tewksbury et al., 2001).

The availability and abundance of news in people's lives has created what some scholars have labeled "ambient news" (Hargreaves & Thomas, 2002). Ambient news suggests that news today is ubiquitous, pervasive, and constantly all around us (Hermida, 2010). Hargreaves and Thomas (2002) note that while individuals want to be informed about significant events in the news, the ambient nature of news today may lead some people to believe they do not need to regularly follow the news to stay informed (p. 5). As people increasingly encounter news and political information online, including content shared by others in their social networks, might they come to believe that they no longer need to actively seek news and information to remain politically knowledgeable? If the current media environment is facilitating such perceptions, what effect do they have on citizens' news-seeking behaviors and knowledge about politics? While intriguing, these questions have not been addressed in the context of the contemporary media environment, nor have they been rigorously tested empirically.

To address this gap in the literature, this study introduces and tests what we call the *news-finds-me* perception and effect. The news-finds-me effect stems from individuals' perceptions that a) they are well informed about current events despite not purposely following the news, because b) the important information "finds them" anyway, through their general media use, peers, and social connections. Here we test the effects of these perceptions on individuals' active news consumption patterns and political knowledge levels. Using demographically diverse, two-wave online panel survey data collected in the United States, we find that individuals who perceive that they do not need to actively seek news are significantly less likely to use traditional news channels, including television and print news, but more likely to get news from social media. More importantly, we find negative consequences for holding this

misperception, as individuals who believe they are well-informed despite not actively seeking news are, in time, significantly less knowledgeable politically than those who do not hold that perception. Our results suggest that actively seeking news remains important in order for citizens to learn about politics and civic affairs.

News-Finds-Me Perception and the Contemporary News Environment

We define the news-finds-me perception as the extent to which individuals believe they can indirectly stay informed about public affairs—despite not actively following the news—through general Internet use, information received from peers, and connections within online social networks. Thus, it captures people's perceptions that news will simply “find” them without seeking it. Importantly, the news-finds-me perception does not reflect ambivalence toward using news to stay informed—it is not that those who hold this perception are necessarily uninterested in what is happening in the world—but rather believe that they do not need to actively seek news because their other media behaviors and social network provide all the news they require to stay informed. The perception is also distinct from motivations to consume news. For example, one individual may not be motivated to consume news but still feel up to date on current affairs, while a different individual may be highly motivated to follow news and feel that they are informed through their network, even if those motivations to consume news do not translate into actively seeking the news.

Nor does the news-finds-me perception capture simple avoidance of news. News avoidance suggests an active and conscious effort to avoid news content, whereas the news-finds-me perception fuels a failure to actively seek news. It is not that individuals who feel the news will find them are avoiding news, they just do not feel that they must go and find it. This is a subtle but important distinction. Moreover, most people do not have an active desire to avoid the news altogether (Trilling & Schoenbach, 2013) and more than 70% of Americans continue to regularly follow the news (Pew, 2016). Furthermore, the ambient nature of news and its prevalence on social media make it difficult to completely avoid exposure to news (Hargreaves & Thomas, 2002; Pew, 2016). In fact, individuals who hold these perceptions may continue to be exposed to news through their use of social media. After all, as more individuals incorporate social media into their media diets, the opportunity for inadvertent exposure to news also increases (Pew, 2014). Many social media users, for instance, use these platforms to disseminate and discuss news with others in their social network (Weeks & Holbert, 2013). Inevitably, other users within these social networks will be exposed to this news content without any explicit effort of their own (Kim et al., 2013; Tewksbury et al., 2001). In this way, using social media for news may facilitate news-finds-me perceptions.

While news-finds-me perceptions may be a function of using social media as a source of news, it may also be that holding this belief further encourages news exposure within these sites. For example, individuals who hold the news-finds-me perception may believe that social media fulfills their news needs, which might lead them to more consistently turn to social media as a source of news. That is, if people believe the news will find them without actively seeking it, they will likely need to continue to use and rely on social media as a source of news to maintain the perception of being informed. In this way, use of social media for news and news-finds-me perceptions may have a cyclical relationship. Using social media for news enhances the news-finds-me perception, which may subsequently encourage further use of social media as a source of news. We therefore expect the following:

H1: Social media use for news will be positively related to news-finds-me perceptions.

Perceptions of the media environment can influence the extent to which people use certain media (e.g. Iyengar & Hahn, 2009) and we expect news-finds-me perceptions to have important implications for individuals' media use behaviors outside of social media. One of the central characteristics of the news-finds-me perception is the belief that one need not actively follow the news because others in an individual's social network will provide relevant and necessary information. This implies a strong reliance on others for news, which is a hallmark of the two-step flow of information. The two-step flow suggests that news can flow from the mass media to the general public through opinion leaders. In this model, certain individuals who are highly interested and involved with news (i.e. opinion leaders) will consume news and subsequently disseminate what they learn to their peers, often in an attempt to persuade them (Katz & Lazarsfeld, 1955). In the contemporary media environment, opinion leaders actively discuss, share, comment on, and produce news and political information (Park, 2013; Weeks, Ardévol-Abreu, & Gil de Zúñiga, 2015), which may contribute to the news-finds-me perception and affect subsequent media use behaviors. The abundance of news online and in social media is overwhelming for some individuals, which may lead them to depend more on other people in their networks and less on traditional media to filter relevant news for them (Pentina & Tarafdar, 2014). If people consistently see others discussing news or sharing information online, they may be less likely to actively seek news because they are confident that they are informed about political affairs through their social connections and general media use. Tuning into television news, reading a newspaper, or listening to the news on the radio would all simply be superfluous to those with the news-finds-me perception, as this information is not likely to have much additional utility, given that people already feel sufficiently informed (e.g. Knobloch-Westerwick, Carpentier, Blumhoff, & Nickel, 2005). Indeed, individuals who report that friends and family are an important source of news are less likely to actively seek news from news organizations (Pew, 2016).

If individuals who are high in news-finds-me perceptions feel their information needs are met through their peers and social networks, the high-choice contemporary media environment makes it even more unlikely that they will seek additional news from traditional media sources. Given the multitude of options unrelated to news or politics available to media consumers today (entertainment, sports, movies, etc.), some argue individual-level characteristics and motivations have become increasingly important determinants in whether people selectively expose themselves to political news or not (Prior, 2007). Individuals who feel that they will learn from news, are interested in politics, or enjoy news are more likely to actively seek political news than those who are not (e.g. Min, 2010) and some evidence indicates the relative influence of these personal characteristics on media choice has increased as the number of media options has grown (e.g. Hopmann et al., 2016; Strömbäck, Djerf-Pierre, & Shehata, 2013). Based on these theoretical foundations, individuals who believe the news finds them and feel they are informed should therefore be less likely to purposefully expose themselves to news from traditional news outlets.

H2: People's news-finds-me perception in time 1 will be negatively related to traditional media news use (i.e., TV, radio, and print newspaper) in time 2.

News-Finds-Me Effect on Political Knowledge

The hypothesized impact of news-finds-me perceptions on news consumption raises the related question of whether this perception also affects individuals' knowledge about politics. News media are important sources for citizens to learn about politics (e.g. Barabas & Jerit, 2009; Delli Carpini & Keeter, 1996) but there is concern that the high-choice media environment will widen gaps in political knowledge between individuals who actively seek news and those who do not. Prior to the widespread adoption

of cable television and the Internet, people were often incidentally exposed to news (typically on television), which allowed individuals who did not actively seek news to remain relatively well-informed compared to their news seeking peers. Given that citizens today have nearly unlimited media options and often select nonnews content, the concern is that actively seeking news is now a requirement in order for people to learn about politics (Hopmann et al., 2016; Prior, 2007). While the expansion of the media environment may have altered incentives to purposefully select news content, the growth of social media has also increased citizens' opportunities to learn about politics through incidental or unintended exposure to news within these platforms (Bode, 2016; Dimitrova, Shehata, Strömbäck, & Nord, 2014). Such incidental learning may therefore allow people to be informed despite not seeking the news (e.g. Elenbaas, de Vreese, Schuck, & Boomgaarden, 2014; Tewksbury et al., 2001).

At the center of the debate about contemporary knowledge gaps is the question of whether political learning can occur in the absence of actively seeking news, or whether political knowledge can be acquired incidentally through use of other media (Shehata, 2013). In other words, must political learning be active or can passive learning about politics from media occur?

Active learning is argued to be a function of purposeful selection of media content rather than available media content. Individuals who want to learn more about their political environment and actively seek news pay closer attention to and elaborate more deeply on news content, which facilitates political learning (e.g. Eveland et al., 2003; David, 2009; Prior, 2007). For example, Hopmann et al. (2016) found support for the active learning hypothesis, demonstrating that over time political interest has become an increasing important factor driving news exposure and political knowledge. According to this argument, political learning is therefore primarily a result of personal characteristics such as preferences, motivations, interest, or, in the present study, news-finds-me perceptions (see Shehata, 2013). Given that news-finds-me perceptions represent a failure to actively seek news, notions of active learning would suggest that those high in this belief would have lower levels of political knowledge, because they are not actively seeking or processing the news content necessary to learn. That is, if people perceive that the news will find them without explicit effort, they will no longer seek the news content needed to keep them informed and their knowledge should suffer.

However, it is also possible that incidental exposure to news and political information can facilitate knowledge gains through passive learning. Notions of passive learning via media are based on the idea that contextual factors such as the sheer volume of information can encourage learning despite existing individual-level factors that could dampen knowledge, such as news-finds-me perceptions (Shehata, 2013). Learning about politics is therefore not simply a matter of desire to learn but also opportunity and availability of information (Elenbaas et al., 2014). Here, the abundance of news today inevitably means that citizens will be incidentally exposed to political information without actively seeking it through their general media use (Hermida, 2010). Such inadvertent exposure provides numerous opportunities to passively learn through exposure to relevant information (Krugman & Hartley, 1970; Zukin & Snyder, 1984). Numerous studies support the passive learning hypothesis, noting that information environments containing high levels of political news and information can enhance political knowledge through mere exposure, even for individuals who do not actively expose themselves to news (e.g. Elenbaas et al., 2014; Iyengar et al., 2010; Kobayashi & Inamasu, 2015; Shehata, 2013; Shehata et al., 2015; Tewksbury et al., 2001). Extending the findings in support of passive learning to the present study, it is possible that individuals high in news-finds-me perceptions may passively learn about politics despite not actively seeking the news through their use of other media.

Taken together, some research indicates that active engagement with the news is required for political learning, while other work demonstrates that individuals may acquire knowledge passively through their other media use alone. Given that the news-finds-me belief reflects individuals' perceptions of the

omnipresence of news and its consequences on political knowledge, this study seeks to shed light on this regard:

RQ1: What is the relationship between individuals' perceptions that the news finds them and their political knowledge?

News-Finds-Me Perceptions, Social Media Use, and Political Knowledge

Much of the discussion in the literature over media exposure and political learning has focused on the role of television or general Internet use in facilitating or diminishing knowledge gaps based on personal characteristics (e.g. Elenbaas et al., 2014; Hopmann et al., 2016; Iyengar et al., 2010; Kobayashi & Inamasu, 2015; Prior, 2007; Shehata et al., 2015). Yet, in the contemporary media environment it is social media that may provide a promising opportunity for exposure to news, passive learning about politics, and reduction of potential knowledge gaps between those who believe the news will find them and those who do not (Bode, 2016). Social media allow for exposure to news shared by peers, as well as journalists and media organizations, who have a strong presence on these sites (Weeks & Holbert, 2013). It is therefore not surprising that social media have become an important source of news for many citizens and that people report frequent incidental exposure to news while using these sites for other purposes (Kim et al., 2013; Pew, 2016). If the concern is that personal characteristics reduce the likelihood that some individuals actively seek and learn from news, social media may attenuate those worries by exposing people to news. Individuals high in news-finds-me perceptions may be less likely to actively seek news from traditional news sources but, as noted above, they should turn to social media for news. Social media may therefore offer the necessary context and opportunity for individuals high in news-finds-me perceptions to passively learn about politics without actively seeking additional news from sources outside of these platforms, potentially reducing any knowledge gap that stems from this perception.

However, there are also reasons to believe that social media will not facilitate political knowledge gains for those high in news-finds-me perceptions. It may be that the content preferences or individual characteristics that can create knowledge gaps via other media use are also present on social media (Prior, 2007). Individuals who feel that the news will find them may see news in social media but not click on it, attend to it, or process it in any depth. In such instances, simple exposure may not be enough for passive learning to occur as it can with television (Shehata, 2013). For instance, although people can recall political information from social media (Bode, 2016), according to researchers political knowledge has either exhibited no links with social media use (Dimitrova et al., 2014), or only enhances learning for those high in education (Yoo & Gil de Zúñiga, 2014). Despite the wealth of news and information in social media, active learning may therefore be required in this platform. Furthermore, there are questions about whether social media provide the type of news necessary for people to learn. Bright (2016) found that relative to a number of other news topics, social media users share news about politics at a much lower level, perhaps to avoid offending others. Over time, this may create what he calls a "social news gap," in which people who consume news on social media hold different perceptions of the news agenda than traditional news users, which may lead social media news users to become disinterested and disengaged with political news altogether (Bright, 2016). If so, social media could exhibit the same preference- and individual-based knowledge disparities outlined by Prior (2007).

As noted above, we expect individuals' perceptions that the news will find them to be positively related to social media use for news. We have also outlined reasons why using social media for news may or may not subsequently facilitate political learning. Given these conflicting theoretical accounts,

we ask whether those who feel the news will find them learn about politics indirectly, through their use of social media for news:

RQ2: Do people's news-finds-me perceptions have an indirect effect on political knowledge, through use of social media for news?

Method

Sample

This study relied on U.S. survey data collected in two waves by the Digital Media Research Program at the University of Texas. The study used web-based survey platform (Qualtrics) to administer the online panel and to deliver the questionnaire to respondents. Subjects' panel is curated by the media-polling group Nielsen, which was contracted to obtain the study's sample. Nielsen selects participants from over 200,000 people previously registered users. In order to secure maximum data quality integrity, representability and generalizability, Nielsen stratifies a quota sample from this panel of registered users, ensuring specified quotas that match the U.S. census for gender, age, education, and income. This procedure has been validated by previous research (e.g. Bode, Vraga, Borah, & Shah, 2013; Iyengar & Hahn, 2009).

Wave 1 of the survey was conducted between 15 December 2013 and 5 January 2014. From an initial sample of 5,000 individuals, 1,813 participants provided complete and valid data. Based on the American Association of Public Opinion Research response rate calculator (AAPOR, 2011), the response rate was 34.6%, which is within the acceptable parameters for online panel surveys (see special volume on online panel data, Bosnjak, Das, & Lynn, 2015). Wave 2 data were collected from 15 February to 5 March 2014, gathering information from 1,024 cases (retention rate of 57%). The retention rate also falls into the acceptable interval to maintain data and representation (see Watson and Wooden, 2006). The sample was slightly older, more educated, and included fewer Hispanics than the U.S. census. Yet, the overall sample is sufficiently similar to the U.S. census and also comparable to other surveys utilizing similar sampling strategies (for complete demographic breakdown see Saldaña et al., 2015).

Dependent Variables

Social media use for news

Building on previous studies (Gil de Zúñiga et al., 2012, 2013), we created an index of social media use for news by averaging 11 items measured on a 10-point scale (1 = never to 10 = all the time). Eight items asked respondents how often they used Facebook, Twitter, Google+, Pinterest, Instagram, Tumblr, Reddit, and LinkedIn for getting news. Three more general items captured information regarding how often respondents used social media "to stay informed about current events and public affairs," "to get news about current events from mainstream media," and "to get news from online news sites" (W^1 Cronbach's $\alpha = .89$, $M = 1.94$, $SD = 1.31$; W^2 Cronbach's $\alpha = .89$, $M = 1.89$, $SD = 1.29$).

Radio news

This variable was created by averaging scores of two items tapping radio use for information purposes: "How often do you get news from radio?" and "How often do you use radio for news?" (W^1 Spearman-Brown = .84; $M = 4.42$, $SD = 2.85$; W^2 Spearman-Brown = .85; $M = 4.35$, $SD = 2.83$).

Print news

Respondents were also asked to rate how often they get print news from “local newspapers” and “national newspapers.” A third question asked for respondents’ overall frequency of print news use (10-point averaged scale, W^1 Cronbach’s $\alpha = .70$; $M = 4.51$, $SD = 2.48$; W^2 Cronbach’s $\alpha = .72$; $M = 4.48$, $SD = 2.52$).

TV news use

Respondents were asked to assess their frequency of use of “TV,” “network TV,” “local TV,” and “cable” for getting news, as well as CNN, Fox News, and MSNBC (7 items averaged scale, W^1 Cronbach’s $\alpha = .79$; $M = 5.15$, $SD = 2.05$; W^2 Cronbach’s $\alpha = .80$; $M = 5.17$, $SD = 2.02$).

Political knowledge

Consistent with prior literature, we created an index that included measures of respondents’ awareness of current policy issues and, more generally, of the U.S. political system and institutional rules (see Delli Carpini & Keeter, 1993). The first two questions were open-ended and asked respondents to name the positions held by Joe Biden and John Roberts at that moment. The other six items were multiple choice and asked respondents to identify the length of a term for U.S. Senators, the budget item on which the U.S. Federal government spent the least, the party affiliation of the Senators who introduced the immigration bill, the outcome of the decision of the Supreme Court about so-called “Obamacare,” the name of the organization whose documents were released by Edward Snowden, and the subject matter of the negotiations between the UN, the US, and the Syrian government. We coded correct responses to each item were coded as 1, and incorrect or missing responses were coded as 0. Researchers generated indexes of political knowledge identically for Wave 1 and Wave 2 (range = 0 to 8, 8 items additive scales). Mokken scaling and reliability analysis (see Mokken, 1971 for details) showed that the eight items form a unidimensional and reliable scale (W^1 Loevinger’s H scale coefficient = .47; $MS \rho = .77$; $M = 4.58$; $SD = 2.17$; W^2 Loevinger’s H scale coefficient = .42; $MS \rho = .81$; $M = 4.23$, $SD = 2.07$).

Independent Variable

News finds me

Our main independent variable comprises personal perceptions about whether individuals can stay informed about current affairs despite not purposely following the news, because important information will “find them” anyway through their general Internet use, peers, and connections within online social networks. This perception was measured using a 10-point Likert-type scale (1 = strongly disagree to 10 = strongly agree), through which respondents expressed either dissent or agreement with the following statements: “I rely on my friends to tell me what’s important when news happens,” “I can be well informed even when I don’t actively follow the news,” “I don’t worry about keeping up with the news because I know news will find me,” and “I rely on information from my friends based on what they like or follow through social media” (4 items averaged scale, W^1 Cronbach’s $\alpha = .73$; $M = 3.58$; $SD = 1.76$).

Control Variables

In order to account for potential confounds, we included a variety of control variables that have been shown in previous literature to have an impact on our dependent variables, “news use” and “political knowledge,” in the analysis. For instance, Kenski and Stroud (2006) found that political knowledge varies according to demographics such as gender, race, education, and income. Thus, we included sociodemographic variables such as respondents’ *gender* (49.7% females), *age* ($M = 52.71$, $SD = 14.72$), and *race* (77.9% white). We also controlled for *education*, operationalized as highest level of formal education

completed ($M = 3.61$, $Mdn = \text{some college}$); and *income*, which was measured through eight categories related to the total annual household income ($M = 4.46$, $Mdn = \$50,000$ to $\$59,999$). Motivation to learn about politics and prior behaviors should also affect levels of political knowledge; if individuals are driven to learn about politics and engage in politically relevant behaviors, they should become more knowledgeable. Based on Delli Carpini and Keeter's (1996, p. 180-181) model of political knowledge, also controlled for motivational and behavioral political variables that are among the strongest predictors of knowledge and include discussion network size, discussion frequency, internal political efficacy, political interest, and trust in the media. Finally, we accounted for overall social media use frequency ($M = 4.13$; $SD = 2.98$), infotainment ($M = 2.44$; $SD = 2.43$), and incidental exposure to information, as these variables may be closely related to news-finds-me perceptions and need to be eliminated as potential confounds.

Discussion network size

Talking about politics with others is associated with higher levels of political knowledge (Delli Carpini & Keeter, 1996) and our models account for two aspects of political discussion: network size and frequency. Two open-ended questions asked respondents about the number of people they "talked to face-to-face or over the phone about politics or public affairs," and "talked to via the Internet, including e-mail, chat rooms and social networking sites about politics or public affairs" during the past month. We then created an additive index was then created adding both figures, but the resulting variable was highly skewed ($W^1 M = 4.36$, $Mdn = 1.00$, $SD = 16.89$, skewness = 10.86). We then used the natural logarithm to reduce the skewness and bring the distribution closer to the normal curve ($W^1 M = .33$, $Mdn = .24$, $SD = .37$, skewness = 1.32).

Discussion frequency

We computed this variable based on questions that asked respondents about the frequency of political talk with people to whom they maintained relations with varying degrees of closeness (Valenzuela et al., 2012; Bachmann & Gil de Zúñiga, 2013). The questions asked respondents how often they talk about politics or public affairs with: "Spouse or partner," "family and relatives," "friends," "acquaintances," "strangers," "neighbors you know well," "coworkers you know well," and "coworkers you do not know well" (9 items averaged scale, W^1 Cronbach's $\alpha = .87$; $M = 3.27$; $SD = 1.74$).

Internal political efficacy

Efficacious individuals who feel they can understand and comprehend political information are more likely to consume news and be knowledgeable (Delli Carpini & Keeter, 1996; Kenski & Stroud, 2006). The questionnaire asked respondents the extent of their agreement (from strongly agree to strongly disagree, 10-point scale) with two statements: "I have a good understanding of the important political issues facing our country," and "I consider myself well qualified to participate in politics" (W^1 Spearman-Brown Coefficient = .87; $M = 5.34$ $SD = 2.56$).

Political interest

Individuals who are interested in politics are likely to consume more news and be more knowledgeable politically (e.g. Kenski & Stroud, 2006). Respondents were asked to rate their degree of interest in "information about what's going on in politics and public affairs," as well as their level of attention to "information about what's going on in politics and public affairs" (2 items averaged scale, W^1 Spearman-Brown coefficient = .97; $M = 6.67$ $SD = 2.70$).

Media trust

Given that those who do not trust the media are less likely to use it and less knowledgeable (Ardèvol-Abreu & Gil de Zúñiga, 2016; Delli Carpini & Keeter, 1996), this study employed four questions asking respondents how much they trusted news from “mainstream news media,” “alternative news media,” “social media sites,” and “news aggregators” (10-point averaged scale, W^1 Cronbach's $\alpha = .72$; $M = 4.28$; $SD = 1.72$).

Incidental news exposure

Incidental news exposure may be positively related to people's perception that news finds them, making it important that we control for this potential confounding effect. Building on measures previously used in the literature (Tewksbury et al., 2001; Kim et al., 2013) respondents were asked nine items tapping to what extent they encounter or come across news when they were using media for something else. Items included ‘television,’ ‘radio,’ ‘mobile devices,’ ‘search engines,’ ‘blog,’ ‘online portals,’ ‘e-mail,’ ‘microblogging (i.e., Twitter),’ and ‘social networking sites’ (10-point averaged scale, W^1 Cronbach's $\alpha = .85$; $M = 3.87$; $SD = 1.75$).

Statistical Analyses

To test our set of hypotheses and research questions, a series of regression analyses were conducted. First, two series of lagged, autoregressive (controlling for prior effects of the dependent variable) ordinary least-square regressions were conducted to assess the effect of news-finds-me perceptions on the dependent variables. The rationale here is that although cross-sectional models may help understand how variables are related to each other, as well as time lagged models, both may be biased when addressing causal inference. An autoregressive model helps alleviate this issue (see Maxwell, Cole, & Mitchell, 2011). Bias in cross-sectional analyses of longitudinal mediation: Partial and complete mediation under an autoregressive model. Finally, we constructed a regression-based, lagged mediation path model to test whether there was an indirect effect of news-finds-me perceptions on political knowledge via social media news use, using the PROCESS macro in SPSS (Hayes, 2013).

Results

This study first sought to identify news media consumption patterns among those who have the perception that the active search for news is not necessary, as news will reach them one way or another. Thus, our first set of hypotheses examined the effects of news-finds-me perceptions on the use of different news media. We expected news-finds-me perceptions to be positively associated with social media use for informational purposes (H1) and negatively associated with traditional media use (H2). To test these hypotheses, we constructed autoregressive lagged regression models predicting different types of media use for news, including television, newspapers, radio, and social media. Consistent with our expectations, the results in Table 1 show that the news-finds-me perception ($W1$) is negatively associated with traditional news media consumption ($W2$), specifically television ($\beta = -.041$, $p < .05$) and newspapers ($\beta = -.066$, $p < .001$). That is, the more the people tend to perceive important news will reach them, the less they actively consume information in the future. On the other hand, news-finds-me beliefs showed no significant relationships with radio news use ($\beta = .006$, $p = .238$).

Also consistent with our expectations, results from the autoregressive hierarchical regression model indicate a positive relationship between the news-finds-me belief and social media use for news ($\beta = .062$, $p < .001$). Among all the controls in the autoregressive model, as it should be expected, previous types of media consumption were the strongest predictors for future engagement with the same type

Table 1 Panel Autoregressive Models Testing News-Finds-Me Effect on News Use

	TV News ^{W2}	Print News ^{W2}	Radio News ^{W2}	Social Media News ^{W2}
<i>Block 1: Demographics</i>				
Age	.029	.045*	.016	-.057***
Gender (female)	.014	.013	-.023	-.018
Education	-.004	.013	.007	-.022
Income	-.002	.017	.018	-.024
Race (white)	-.036*	-.013	-.032 [#]	-.059**
ΔR ²	8.6%	9.3%	4.2%	9.8%
<i>Block 2: Antecedents</i>				
Dis. Net. Size ^{W1}	-.017	-.009	-.036	.052*
Dis. Frequency ^{W1}	.043 [#]	.026	.035	-.004
Int. Efficacy ^{W1}	-.001	-.017	.026	-.006
Political Interest ^{W1}	.028	.035	.053 [#]	.026
Media Trust ^{W1}	.040 [#]	.036	-.052*	.052 [#]
Social Media Freq. ^{W1}	-.001	-.015	.020	.092***
ΔR ² (%)	18%	12%	8.1%	26%
<i>Block 3: News</i>				
Incidental Exposure ^{W1}	-.036	.021	.025	.026
Infotainment ^{W1}	.011	.006	-.002	.029
TV ^{W1}	.794***	-.012	-.043 [#]	-.012
Print ^{W1}	.036 [#]	.764***	.017	-.016
Radio ^{W1}	-.036*	.012	.746***	.011
Social Media ^{W1}	.038	.049 [#]	.037	.578***
ΔR ²	45%	45.4%	48.7%	20.2%
<i>Block 4: NFMP</i>				
NFM Perception ^{W1}	-.041*	-.066***	.006	.062***
ΔR ²	0.2%	0.3%	0%	0.3%
Total R ²	71.8%	67.1%	61.2%	56.2%

Note: Sample size = 1,017. Cell entries are final-entry OLS standardized Beta (β) coefficients. [#] $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$.

of news media. These results support our expectations that the news-finds-me perception is associated with less use of traditional media, but greater use of social media for informational purposes. Within time, however, the use of social media will more strongly predict the formation of NFM perception ($r_{\text{cross-lagged}} = .43, p < .001$) than the other way around ($r_{\text{cross-lagged}} = .18, p < .001$) (See Table 5).

RQ1 addressed the relationship between the news-finds-me perception and political knowledge. We began with a cross-sectional test on the effect of news-finds-me perception in predicting people's knowledge levels. Furthermore, we also employed lagged and autoregressive models to shed light on the effects of news-find-me perception on political knowledge over time (see Hsiao, 2014; Shah, Cho, Eveland, & Kwak, 2005). As presented in Table 2, results suggest that the news-finds-me perception is overall negatively associated to political knowledge. These effects are consistent in the cross-sectional analysis ($\beta = -.108, p < .001$; $\Delta R^2 = 0.8\%$), lagged model ($\beta = -.111, p < .001$; $\Delta R^2 = 0.9\%$), and the autoregressive test ($\beta = -.047, p < .05$; $\Delta R^2 = 0.3\%$). This finding indicates that individuals who perceive

Table 2 Cross-sectional, Lagged, and Autoregressive Regression Models Testing News Finds Perception Over Political Knowledge

	Political Knowledge ^{W1} (Cross-sectional)	Political Knowledge ^{W2} (Lagged)	Political Knowledge ^{W2} (Autoregressive)
<i>Block 1: Demographics</i>			
Age	.052 [#]	.024	-.007
Gender (female)	-.174 ^{***}	-.182 ^{***}	-.078 ^{***}
Education	.099 ^{***}	.110 ^{***}	.051 ^{**}
Income	.100 ^{***}	.088 ^{***}	.028
Race (white)	.004	.039 [#]	.037 [#]
ΔR^2	22%	22.7%	22.7%
<i>Block 2: Antecedents</i>			
Dis. Net. Size ^{W1}	.104 ^{***}	.086 ^{**}	.020
Dis. Frequency ^{W1}	-.069 [*]	-.050	.002
Int. Efficacy ^{W1}	.082 ^{**}	.104 ^{***}	.054 [*]
Political Interest ^{W1}	.433 ^{***}	.395 ^{***}	.135 ^{***}
Media Trust ^{W1}	.011	-.018	-.024
Social Media Freq. ^{W1}	-.016	-.029	-.020
ΔR^2 (%)	21.9%	20.2%	20%
<i>Block 3: News</i>			
Incidental Exposure ^{W1}	.013	.013	.004
Infotainment ^{W1}	.125 ^{***}	.109 ^{***}	.004
TV ^{W1}	-.137 ^{***}	-.108 ^{***}	-.027
Print ^{W1}	-.033	-.020	-.001
Radio ^{W1}	.014	-.006	-.015
Social Media ^{W1}	-.034	-.076 [*]	-.057 [#]
ΔR^2	2.4%	2.0%	2.1%
<i>Block 4: Autoregressive</i>			
Pol. Knowledge ^{W1}	-	-	.597 ^{***}
ΔR^2			19.6%
<i>Block 4: NFMP</i>			
NFM Perception ^{W1}	-.108 ^{***}	-.111 ^{***}	-.047 [*]
ΔR^2	0.8%	0.9%	0.3%
Total R ²	47.1%	45.7%	64.5%

Note: Sample size = 1,017. Cell entries are final-entry OLS standardized Beta (β) coefficients. $\#p < .10$; $*p < .05$; $**p < .01$; $***p < .001$

that news will find them also tend to show lower levels of political knowledge, even after controlling for sociodemographics, personal antecedents, news media use, and even political knowledge over time.

Among all the controls introduced in the different models, age, gender (male), education, income, discussion network size, discussion frequency, internal efficacy, and political interest positively predicted political knowledge. Infotainment, TV news, and social media use also predicted political knowledge, although differently (see Table 2 for details)¹. The study also includes a correlation table of all variables of interest in the study (see Table 3).

Table 3 Zero-order Correlations among All Key Variables in the Study

Variables	1	2	3	4	5	6	7	8
1. News finds me (W^1)	–							
2. Social media use for news (W^2)	.39**	–						
3. Citizen journalism use (W^2)	.22**	.53***	–					
4. News aggregators use (W^2)	.17**	.48***	.45***	–				
5. Radio news (W^2)	.06	.18***	.27***	.20***	–			
6. Print news (W^2)	–.05	.17***	.30***	.15***	.35***	–		
7. TV news use (W^2)	–.04	.22***	.31***	.16***	.20***	.42***	–	
8. Political knowledge (W^2)	–.28***	–.11***	–.01	.12***	.16***	.18***	.05	–

Note. Sample size = 1,008. Cell entries are two-tailed zero-order correlation coefficients. # $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4 Indirect Effects Test of News Find Me Beliefs over Political Knowledge via Social Media News Use

Indirect Effects Paths	Point Estimate	95% Conf. Interval
News Find Me (W^1) → Social Media News Use (W^1) → Political Knowledge (W^1)	–.0109	–.0314 to .0013
News Find Me (W^1) → Social Media News Use (W^1) → Political Knowledge (W^2)	–.0051	–.0227 to .0085

Note. Path estimates are unstandardized coefficients. Indirect effects based on bootstrapping to 5,000 samples with biased corrected confidence intervals. The effects of demographic variables (age, gender, education, race, and income), sociopolitical antecedents (political efficacy, political interest, discussion network size, frequency of discussion, political knowledge, social media use frequency), and media related variables and uses (media trust, incidental exposure to news, infotainment, TV news, Radio news, Print news) were included as control variables. Sample- $W^1 = 1,814$; Sample- $W^2 = 1,017$.

To further explore the relationships between the news-finds-me perception and political knowledge—and because we expected (and empirically found) our independent variable to be positively related to social media use for news—possible indirect effects were examined (RQ2). For this purpose, we carried out three mediation models testing indirect effects of news-finds-me beliefs on political knowledge through social media use for news (see Hayes, 2013 for details). As Table 4 shows, we found no significant indirect effect on political knowledge in cross-sectional or lagged: [–.0314, .0013], and [–.0227, .0085], respectively. Those who expect that the news will find them tend to be exposed to more news and political information on social media. However, this path does not represent an indirect net gain effect on their level of political knowledge.

Overall, these results suggest that news-finds-me perceptions reduce surveillance about public affairs via traditional media (TV and newspapers), and are associated with a decrease in political knowledge. Given that the news-finds-me perception is associated with increased use of social media for informational purposes, one might think that those scoring high in “news finds me” could indirectly learn about

Table 5 Cross-lagged Pearson's Correlation of News Find Me Perception and Social Media News Use

Pearson Coefficient Effects	$r_{\text{cross-lagged}}$	p-value
News Find Me Perception (W^1) → Social Media News Use (W^2)	.18	.001
Social Media News Use (W^1) → News Find Me Perception (W^2)	.43	.001

Note. The cross-lagged correlation has been calculated using Locascio's formula (1982).

politics. However, after testing the mediation path we did not find any significant indirect association between news-finds-me perceptions and political knowledge.

Discussion

The internet and social media provide citizens ample opportunities to be exposed to news and political information, incidentally and through content shared by others in their social networks (Bode, 2016; Kim et al., 2013; Pew, 2016; Garrett et al., 2012). Although the availability of such information may benefit democracy in many ways, the abundance of news online may also contribute to citizens' misperceptions that they can become adequately informed about politics without much explicit effort. This study introduces and finds support for a new media phenomenon that has emerged in the contemporary news environment: the news-finds-me perception and effect. Our results indicate that many individuals hold the mistaken perception that they can be part of a well-informed citizenry, as important news will find them without their actively seeking it. We find that individuals who believe the news finds them are less likely to use traditional sources of news such as television news and newspapers. Also of importance, citizens who hold this perception are less knowledgeable about civic and political affairs than are those who do not believe the news will find them.

The results presented here have important implications for our theoretical understanding of how people learn about politics in an era of digital and social media, and its implications for an informed public sphere (also see Gil de Zúñiga, 2015). This study suggests that actively seeking the news continues to be critical for citizens to learn about politics. Although the abundance of information available today creates opportunities for citizens to learn about politics, individual characteristics appear to be important determinants in whether people learn from news. Having a strong interest in staying informed about news and political information can increase attention and elaboration on news content, which subsequently facilitates gains in knowledge (e.g. David, 2009; Eveland et al., 2003). The news-finds-me perception represents a psychological detachment from this active news-seeking behavior, which hinders any potential benefits in terms of political knowledge. Prior (2007) has documented citizens' move away from news in favor of entertainment content and the effects this has on political knowledge. Our results are consistent with this work in that the news-finds-me perception contributes to gaps in civic and political learning, as those who hold the perception are less likely to seek traditional forms of news and are less knowledgeable about politics. Based on our results we suggest the news-finds-me perception is likely to widen gaps in political knowledge, rather than vice versa. It seems unlikely that those who lack political knowledge in the first place come to increasingly believe the news will find them. That is, if they are not knowledgeable about politics to begin with, it is unlikely that they think about the news and how it reaches them. On the other hand, if they believe the news will find them but do not actively engage with it, their levels of knowledge also stall. Perhaps most problematic, those who hold the news-finds-me

perception actually believe they are staying informed when in reality this misperception is detrimental to their levels of knowledge.

The findings are even more troubling when considering that those who hold the perception that news will find them were more likely to use social media for informational purposes, but exposure to news in this context did not facilitate political learning. In short, the reliance of social media use to passively overcome their information consumption gap, and to learn about important news, does not increase knowledge about politics. Prior research indicates that a saturated news environment can close the knowledge gap between individuals motivated to consume news and those who are not, as citizens are more likely to glean political knowledge if relevant information is widely available (e.g. Elenbaas et al., 2014; Iyengar et al., 2010; Shehata, 2013). Yet the results of the present study suggest that the benefits of such a saturated media environment may not always extend to social media. That is, people may be frequently exposed to news and political information in social media, but this does not translate into gains in political knowledge for those individuals who have the perception that important news will eventually get pushed their way. We do not suggest that social media inhibits learning or that social media users are less knowledgeable than traditional media users. Rather, we argue that social media may be changing how some people think about the role of news in their lives and their intentions to seek it out, which may affect what they know about politics. This finding hints at the interesting possibility that social media are useful in promoting some aspects of democracy but not others. In particular, social media may in part be contributing to a more participatory but less knowledgeable public. We know, for example, that social media encourage political expression and participation, and lower the barriers to become involved in politics (e.g. Bennett, 2012; Gil de Zúñiga, Molyneux, & Zheng, 2014). But whether social media facilitate political learning remains an open question, as preliminary evidence suggests use of these outlets are not strongly contributing to political knowledge (e.g. Bode, 2016; Dimitrova et al., 2014). Citizens likely see social media more as a form of entertainment than a source of news (Pew, 2014). As a result, they may lack the necessary desire to truly learn from such news exposure (Prior, 2007). It is also possible that the type of news content in social media does not provide people with the necessary information they need to learn about politics (Bright, 2016). This was not possible to ascertain with our data as we did not have specific news content associated to people's social media news use but continue to be an important avenue for future exploration.

It must also be noted that although we do find news-finds-me effects, depending on the model these perceptions account for between .3 to .9% of the variance in political knowledge. These effect sizes must be taken into account when interpreting the results. While the overall strength of these effects are modest, news-finds-me perceptions uniquely explain changes in contemporary media consumption patterns and overall political knowledge, suggesting that it aids our theoretical understanding of how people learn from the news in today's media environment.

This study has to be interpreted in the light of some limitations on the generalizability of the results. Our participants were recruited from an online opt-in panel, which implies a non-probability convenience sample. Thus, although the demographic breakdown in both waves is comparable to the U.S. Census (see Saldaña et al., 2015; Weeks et al., 2015), our sample may not be fully representative of all the characteristics of the U.S. population. Despite this limitation, the quality of our sample at selection (using quotas for key demographic variables), the relatively large sample size, the diversity of the respondents, and the number of control variables used in all models allow us to be reasonably confident about the validity and generalizability of our findings (for a more detailed discussion about the validity of opt-in panels to explain theoretical relationships between variables, see Baker et al., 2013).

The internet and social media can encourage democratic outcomes but can also provide people a false sense of being informed. In particular, the abundance of news online and in social media can breed

the notion that people no longer need to actively seek news. If one's friends and social networks share all the relevant news anyway, why should people seek it out on their own? This study indicates that people need to seek news because it will not find them, and if they hold such a belief, their knowledge of public affairs will suffer.

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Note

- 1 The incremental variance explained by the NFM perception block is statistically significant for all models: TV news – Delta-R² F(3,911); p = 0.048. Print news – Delta-R² F(9,373); p = 0.002. Social Media news – Delta-R² F(6,127); p = 0.013. Political Knowledge (cross-sectional) – Delta-R² F(15,695); p = 0.000080. Political Knowledge (lagged) – Delta-R² F(16,123); p = 0.000064. Political Knowledge (autoregressive) – Delta-R² F(4,399); p = 0.036

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About the Authors

Homero Gil de Zúñiga holds the Medienwandel Professorship at University of Vienna, Austria, where he leads the Media Innovation Lab (MiLab). He is also a Research Fellow at the Universidad Diego Portales, and a Research Collaborator at Princeton University. His research addresses the influence of new technologies and digital media over people's daily lives, as well as the effect of such use on the overall democratic process. Address: Media Innovation Lab, Department of Communication, University of Vienna, Währinger Straße 29, 1090 Vienna, Austria.

Brian Weeks is an Assistant Professor in the Department of Communication Studies and a Faculty Associate in the Center for Political Studies at the University of Michigan. His research interests include political misinformation and misperceptions, news on social media, and political information sharing online. Address: Department of Communication Studies and Center for Political Studies, University of Michigan, 5432 North Quad, 105 S State St, Ann Arbor, MI 48109 USA

Alberto Ardèvol-Abreu is an Assistant Professor at the Universidad de La Laguna (Spain), where he is also part of the 'Laboratorio de Tecnologías de la Información y Nuevos Análisis de Comunicación Social' (LATINA) research group. His major research interests focus on political communication, political participation, and new media. He is also interested in media representation of immigration and ethnic minorities and its effects on public opinion. Address: Universidad de La Laguna, Departamento de Comunicación y Trabajo Social, Av. César Manrique s/n (Campus de Guadajara), S/C de Tenerife 38071, Spain.

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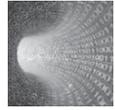
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Mina Tsay-Vogel

Boston University, USA

James Shanahan

Indiana University, USA

Nancy Signorielli

University of Delaware, USA

Abstract

In light of the omnipresence of personal information exchange in the virtual world, this study examines the effects of Facebook use on privacy perceptions and self-disclosure behaviors across a 5-year period from 2010 to 2015. Findings at the global level support the socializing role of Facebook in cultivating more relaxed privacy attitudes, subsequently increasing self-disclosure in both offline and online contexts. However, longitudinal trends indicate that while risk perceptions increased for heavy users, they remained stable for light users. Furthermore, the negative relationship between privacy concerns and self-disclosure weakened across time. Implications for the application of cultivation theory to a contemporary social media context and the year-to-year changes in the impact of Facebook use on privacy attitudes and self-disclosure are discussed.

Keywords

Cultivation, Facebook, privacy, self-disclosure, social networking

Corresponding author:

Mina Tsay-Vogel, Department of Mass Communication, Advertising & Public Relations, Boston University, 640 Commonwealth Avenue, Boston, MA 02215, USA.

Email: minatv@bu.edu

In today's rapidly evolving digital age, the exchange of personal information in the virtual world is ubiquitous. With the influx of social networking sites (SNSs) that encourage users to create personal profiles and networks with close and distant others (boyd and Ellison, 2007), self-disclosure now seems to be perceived as essential for the development and maintenance of relationships (Nosko et al., 2010). Specifically, updating profile information, posting status updates, sharing photos and videos, and commenting on others' posts—to name a few—are behaviors that reveal aspects of one's personal identity. However, this escalating personal exchange on SNSs also raises questions about privacy risks and consequences (Fogel and Nehmad, 2009). Research shows that factors such as attitudes toward privacy, security, and transparency can impact online disclosure practices (Acquisti and Gross, 2006).

In light of the pervasive revelation of personal information on SNSs, the theme of *self-disclosure* is distinctly prevalent in the social media landscape. Being immersed in a virtual environment where personal information (e.g. names, addresses, opinions, and values) is easily shared may have implications for more relaxed privacy boundary management, perhaps leading users to see the world as less regulated by privacy concerns. This study uniquely applies a cultivation perspective to examine the effects of SNSs on privacy attitudes and self-disclosure behaviors. Initially established in the context of television (Gerbner, 1969), cultivation theory suggests that heavy viewing of similar messages or storytelling elements across television programs *cultivates* conceptions of reality (Gerbner et al., 1994). Specifically, heavy viewers are more likely to perceive the world in ways that closely mirror reality as portrayed on television. Given the theoretical assumptions of cultivation, SNSs may also serve as socializing agents for users (Morgan et al., 2015), particularly by representing a mediated reality inundated with the disclosure of personal information. This application of a traditional media effects theory to a contemporary context can provide invaluable insight into the potential long-term effects of SNSs on users' attitudes toward privacy and estimated risks of self-expression.

As Facebook's (2016) immense popularity draws more than 1 billion active users, this research uses it as a relevant SNS context to investigate whether exposure to repetitive themes of self-disclosure on Facebook cultivates weaker perceived threats to privacy, in turn, leading to greater self-disclosure. To test these relationships, longitudinal data in a 5-year period from 2010 to 2015 were collected to assess trends in Facebook use, privacy perceptions (i.e. threat to general privacy, threat to online privacy, and support for governmental privacy protection), and offline and online self-disclosure. Examination of these trends not only contributes to our understanding of the cognitive and behavioral effects of social media use associated with information exchange in recent years, but it also identifies meaningful patterns in the impact of SNS usage on privacy perceptions and self-disclosure behaviors in the future.

Omnipresence of self-disclosure on SNSs: a cultivation perspective

Self-disclosure refers to communication behavior in which an individual consciously makes himself or herself known to others (Derlega and Berg, 1987). SNSs offer many tools and features that by default foster self-disclosure among users (Nguyen et al.,

2012). In fact, social capital researchers suggest that people must be willing to reveal personal information in order to fully experience the relational benefits of social media use (Vitak, 2012). Because the non-verbal cues (e.g. eye contact and physical proximity) and social cues (e.g. indicators of certainty and confidence) that are commonly available in face-to-face (FTF) interactions are non-existent in computer-mediated communication (CMC) (High and Caplan, 2009), greater depth and breadth of self-disclosure are needed to compensate for the absence of these cues (Gibbs et al., 2011). CMC researchers have found that self-disclosure not only helps to initiate social interactions, but also facilitates richer social contacts and friendships in the long-term (Nosko et al., 2010).

Taking into account the omnipresence of self-disclosure on SNSs, it is reasonable to suggest that prolonged exposure to conventional practices of personal information exchange can impact perceptions associated with disclosure practices. Cultivation theory suggests a meaningful hypothesized link between exposure to common message themes and social reality perceptions. The theory postulates that television programs share comparable storytelling elements, and that heavy exposure to these universal and homogeneous themes cultivate similar conceptions of reality for viewers (Gerbner et al., 1994). Consequently, heavier viewers will have a greater tendency to perceive the world in ways that parallel representations of reality on television. Whereas cultivation research initially focused on television violence, showing evidence that heavy television exposure is related to inflated perceptions of crime (Shanahan and Morgan, 1999), cultivation effects have also been documented in the areas of gender roles (Signorielli and Lears, 1992), science (Dudo et al., 2011), and affluence (Shrum et al., 1998), among others. Although cultivation studies have traditionally concentrated on television as the message system, the theory may also be relevant to SNSs as a collective symbolic environment conveying shared stories and values (Morgan et al., 2015). On SNSs, the boundaries of content may potentially be expanded to include the activities that users commonly witness in online forums as these visible behaviors can also implicitly serve as storytelling elements characteristic of the social media system. Persistent exposure to such user behaviors may in turn cultivate one's world view. For instance, social media users are consistently exposed to mediated forms of self-disclosure, and this prevailing theme of personal information exchange can have a cumulative impact on one's social reality, particularly perceptions related to the domain of privacy. The application of cultivation theory to social media not only brings to light the notion of content that resides outside of tangible message features, but also theoretically points to the idea that observable activities in an environment can also be part of the overall message system attributed to newer media.

With a deluge of personal information available on SNSs, issues related to privacy have generated extensive attention (Spencer, 2002). Privacy precaution has been attributed to the impact of digital technologies on breaking down spatial distances, thus making communication barriers more permeable. However, as SNSs serve as platforms where the revelation of personal information is encouraged and minimal privacy settings are employed (Acquisti and Gross, 2006; Davis and James, 2012; Debatin et al., 2009), privacy boundaries among users may progressively become more relaxed. This prediction is informed by taking a cultivation perspective when considering the prevalence of self-disclosure on SNSs. Given the considerable amount of information exchange that

occurs in the virtual environment, it is reasonable to suggest that social media are cultivating more lenient privacy attitudes and beliefs as a result of the visible omnipresence of online self-disclosure activities in which users commonly, habitually, and intentionally engage. In a similar vein, research in the area of information privacy also focuses on people's attitudes toward safeguarding their privacy at an institutional level as threats to privacy are largely associated with the desire for privacy protection (Lyon and Zureik, 1996). In light of the inundation of personal data revealed in the virtual world, the abundance of information that is freely and publicly shared by users is likely to promote a culture where both perceived threat to privacy and support for privacy protection are mitigated. Therefore, the following hypothesis is posited:

H1. Facebook use is associated with privacy perceptions, specifically decreased (a) threat to general privacy, (b) threat to online privacy, and (c) support for governmental privacy protection.

Privacy attitudes predicting self-disclosure

The second focus of this research is driven by the association between attitudes and behaviors. In particular, the relationship between privacy attitudes and self-disclosure behaviors has largely been explained by the notion that individuals regulate their exchange of information based on privacy control mechanisms (Altman, 1975; Petronio, 2002). Disclosure is not only the core process through which relational satisfaction and maintenance are attained, but also one that is consistently adjusted in relation to one's privacy attitudes, goals, and knowledge. The concept of privacy as boundary regulation also considers how individuals draw on these domains when constructing self- and dyadic privacy strategies for disclosure (Derlega and Chaikin, 1977). Therefore, environmental assessments (e.g. perceived risk, safety, and transparency) play a role in shaping the propensity for people to freely share information. Recent work has corroborated the pivotal role of privacy attitudes in guiding disclosure behaviors in the context of SNSs (Stutzman et al., 2011; Vitak and Ellison, 2013).

In a similar vein, the theory of reasoned action (TRA) (Fishbein and Ajzen, 1975) provides another explanation for the attitude-behavior link, proposing that behavioral intention is a product of one's relevant attitudes and beliefs. Applying the assumptions of TRA to the issue of privacy, one might predict that those who hold more relaxed views of privacy have stronger intentions to self-disclose. In other words, attitudes associated with reduced privacy risks and concerns could subsequently lead to greater information sharing on SNSs.

Although SNSs offer users the opportunity to enrich their social interactions in a virtual space, research has supported the overlap between online and offline networks (Subrahmanyam et al., 2008). In particular, many people rely on their online communication behaviors to strengthen their offline connections, suggesting that online and offline disclosures and their relational benefits are symbiotic in nature. Therefore, privacy attitudes have the potential to impact self-disclosure behaviors in both synchronous and asynchronous domains. Although social information processing (SIP) theory (Walther, 1996) posits that self-disclosure is more frequent in the CMC, as compared to

FTF, context due to the compensation for loss of cues in a less media rich environment, there is inconsistent evidence of which setting fosters greater self-disclosure (Nguyen et al., 2012). Hence, due to the psychological interrelationships between online and offline interpersonal exchange (Lampe et al., 2007), this study also expects that privacy attitudes will impact offline and online disclosure practices similarly. Therefore, the next set of hypotheses is drawn:

H2. Privacy perceptions, specifically (a) threat to general privacy, (b) threat to online privacy, and (c) support for governmental privacy protection, are negatively associated with offline self-disclosure.

H3: Privacy perceptions, specifically (a) threat to general privacy, (b) threat to online privacy, and (c) support for governmental privacy protection, are negatively associated with online self-disclosure.

Trends in privacy perceptions and self-disclosure

The third direction of this research takes into consideration the element of time. As SNSs have become successfully diffused in society—74% of online adults use SNSs, 71% of online adults use Facebook, and the heaviest users of SNSs are between 18 and 29 years of age (Pew Research Center, 2014)—what are the trends in privacy perceptions and self-disclosure behaviors in recent years?

Whereas the dissemination of large quantities of personal information in the virtual environment has elevated concerns over privacy (Fogel and Nehmad, 2009), the body of research on privacy threats, security, and regulation shows mixed results. On the one hand, scholars point to the negative implications of the disclosure of personal data as it is related to identity theft, harassment, cyberstalking, bullying, and unwarranted rumors and gossip (Tavani and Grodzinsky, 2002). On the other hand, although users report being aware of privacy risks, they do little to implement safeguards to protect their personal information (Dwyer et al., 2007). Debatin et al. (2009) found that despite Facebook users reporting high familiarity with privacy settings, they readily accept acquaintances and strangers as “friends.” Given these discrepant patterns of privacy perceptions and self-disclosure behaviors, we inquire about the nature of these trends during the previous 5 years. Therefore, the following research questions are posed:

RQ1. Are there significant changes in privacy perceptions, specifically (a) threat to general privacy, (b) threat to online privacy, and (c) support for governmental privacy protection, in the time frame between 2010 and 2015?

RQ2. Are there significant changes in offline and online self-disclosure in the time frame between 2010 and 2015?

Considering the diversification of social media, growing accessibility of SNSs on mobile devices (e.g. cell phones, tablets, and watches), and increasing levels of personal information exchange in today’s virtual climate, it is also possible that the relationships between (1) SNS use and perceptions of privacy as proposed in H1 and (2) perceptions

of privacy and frequency of self-disclosure as proposed in H2 and H3 vary from year to year. Whereas prior research examining these associations has relied primarily on cross-sectional data, the current study offers a more comprehensive look into social media's impact on privacy attitudes and disclosure behaviors through a longitudinal trend analysis across 5 years. The potential interaction effects of these variables with time can not only elucidate our understanding of the long-term changes in SNSs' impact on users' perspectives of privacy and self-disclosure practices, but also allow us to forecast patterns in the upcoming years. Hence, the following research questions are addressed:

RQ3. Do the relationships between Facebook use and privacy perceptions, specifically (a) threat to general privacy, (b) threat to online privacy, and (c) support for governmental privacy protection, differ in the time frame between 2010 and 2015?

RQ4. Do the relationships between privacy perceptions and (a) offline disclosure and (b) online disclosure differ in the time frame between 2010 and 2015?

Method

Participants and procedure

This study employed a longitudinal design to test the three hypotheses and address the four research questions. The design features a trend study that drew on samples of different respondents from the same population at different time points. Specifically, a web-based questionnaire was administered annually between March and May during a 5-year period from 2010 to 2015. Data were collected using the same questionnaire across the consecutive years from undergraduate students in equivalent introductory communication classes at two large universities in the northeast region of the United States.

This longitudinal study captured a total of 2789 respondents (2010: $n=434$; 2011: $n=440$; 2012: $n=556$; 2013: $n=428$; 2014: $n=452$; 2015: $n=479$). Participants ranged in age from 18 to 25 years ($M=19.47$, standard deviation [SD]=1.29) with 28.2% males and 71.0% females. The racial composition of the sample was 6.2% African American, 0.5% American Indian, 9.7% Asian or Pacific Islander, 78.6% Caucasian, 8.4% Hispanic, and 5.4% other. The questionnaire consisted of items measuring respondents' Facebook use, privacy perceptions, and self-disclosure behaviors, followed by demographic questions.

Measures

Facebook use. Adapting Shrum et al.'s (1998) procedures to the context of Facebook, participants were asked to report the number of hours and minutes they consume Facebook during an average weekday and average day during the weekend in the morning, afternoon, evening, and late night periods. These data were combined (weighting the average weekday questions by a factor of five compared to the average day during the weekend by a factor of two) to construct a measure of Facebook use in hours per day during a regular week. Participants reported an average of 3.17 hours per day ($SD=1.32$) of Facebook use. Across the 5-year period, an analysis of variance shows statistically significant decreases in Facebook use from year to year, $F(5, 2714)=15.01$, $p<.001$

(2010: $M=4.25$, $SD=1.50$; 2011: $M=3.78$, $SD=1.28$; 2012: $M=3.42$, $SD=1.44$; 2013: $M=2.94$, $SD=1.47$; 2014: $M=2.53$, $SD=1.54$; 2015: $M=2.20$, $SD=1.21$).

Privacy perceptions. Three distinct dimensions of perceptions of privacy were assessed using 7-point Likert scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*): threat to general privacy, threat to online privacy, and support for governmental privacy protection.

Threat to general privacy. Eight items were used to assess an individuals' attitude toward privacy in general. Items were adapted from information privacy measures by Smith et al. (1996) and Stone et al. (1983) that tapped into attitudes pertaining to the caution and risks associated with the disclosure of personal information. Example items include the following: *People should be cautious about disclosing personal information to others*, *The idea that information about me is public makes me feel personally in danger*, and *People should pay less attention to safeguarding their privacy* (reverse-coded) (Cronbach's $\alpha=.83$; $M=4.84$, $SD=0.75$).

Threat to online privacy. To measure respondents' perceived threat to privacy on the Internet, a 10-item scale was adapted from Smith et al.'s (1996) information privacy scale that tapped into attitudes related to privacy dangers in the virtual environment. Example items include the following: *The Internet causes serious privacy problems*, *I am cautious of trusting people online*, and *The idea of someone stealing my identity online worries me* (Cronbach's $\alpha=.90$; $M=5.11$, $SD=0.70$).

Support for governmental privacy protection. Three items were adapted from Smith et al.'s (1996) information privacy scale that measured individuals' attitude in favor of governmental intervention that protects people's privacy, as well as their concern about improper access to personal information. The items include the following: *The government should take more steps to make sure that unauthorized people cannot access personal information in their computers*, *Computer databases that contain personal information should be protected from unauthorized access*, and *The government should put more effort into preventing unauthorized access to personal information online* (Cronbach's $\alpha=.79$; $M=4.76$, $SD=0.90$).

Self-disclosure. Two types of self-disclosure behaviors were assessed using 7-point Likert scales ranging from 1 (*not at all*) to 7 (*very much*): offline and online self-disclosure.

Offline self-disclosure. To measure the degree to which participants disclose personal information in FTF conversations, they were asked to rate the following statements: *I freely share my personal information with others face-to-face*, *I do not share personal information with others in conversation* (reverse-coded), and *I disclose information about myself to others in person* (Cronbach's $\alpha=.87$; $M=4.21$, $SD=1.12$).

Online self-disclosure. Three items were used to assess the extent to which participants reveal personal information to others on the Internet. These statements include the

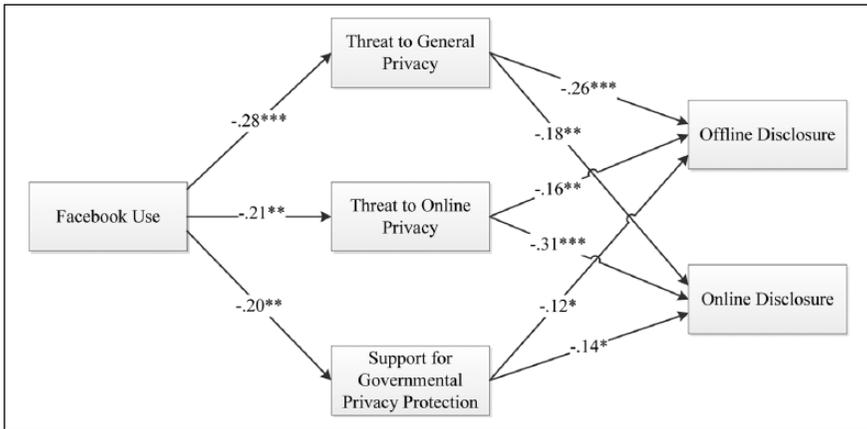


Figure 1. Path analysis of relationships among Facebook use, privacy perceptions, and self-disclosure, $\chi^2(6) = 5.15$, $p = .31$, CFI = 1.0, RMSEA = .05.

CFI: comparative fit index; RMSEA: root mean square error of approximation.

* $p < .05$; ** $p < .01$; *** $p < .001$.

following: *I freely share my personal information with others online, I do not share personal information with others on the Internet* (reverse-coded), and *I disclose information about myself to others online* (Cronbach's $\alpha = .89$; $M = 3.92$, $SD = 0.77$).

Results

Hypothesis tests

To test the three hypotheses, a path analysis was employed to determine if Facebook use predicted privacy perceptions, particularly threat to general privacy, threat to online privacy, and support for governmental privacy protection (H1). Subsequently, we examined if these three privacy perception domains were associated with offline disclosure (H2) and online disclosure (H3), respectively. The model (see Figure 1) was tested using AMOS and yielded an acceptable fit, $\chi^2(6) = 5.15$, $p = .31$, comparative fit index (CFI) = 1.0, root mean square error of approximation (RMSEA) = .05.

Consistent with our hypotheses, Facebook use was associated with decreased threat to general privacy ($\beta = -.28$, $p < .001$), threat to online privacy ($\beta = -.21$, $p < .01$), and support for governmental privacy protection ($\beta = -.20$, $p < .01$). In turn, less threat to general privacy, threat to online privacy, and support for governmental privacy protection were associated with increased offline disclosure ($\beta = -.26$, $p < .001$; $\beta = -.16$, $p < .01$; $\beta = -.12$, $p < .05$) and online disclosure ($\beta = -.18$, $p < .01$; $\beta = -.31$, $p < .001$; $\beta = -.14$, $p < .05$), respectively.

Bootstrapping procedures using 2000 bootstrap samples and bias-corrected confidence intervals revealed that privacy perceptions played significant mediating roles. Specifically, threat to general privacy ($\beta = -.28$, $p < .001$), threat to online privacy ($\beta = -.19$, $p < .01$), and support for governmental privacy protection ($\beta = -.14$, $p < .05$)

Table 1. Trends in privacy perceptions between 2010 and 2015.

Privacy perceptions	Year	Year					
		2010	2011	2012	2013	2014	2015
Threat to general privacy	M	4.68 _a	4.78 _{ab}	4.79 _{ab}	4.91 _{ab}	4.92 _b	4.94 _b
	SD	0.87	0.80	0.78	0.72	0.70	0.71
Threat to online privacy	M	4.98 _a	5.05 _{ab}	5.07 _{ab}	5.12 _{ab}	5.17 _b	5.19 _b
	SD	0.81	0.79	0.68	0.65	0.72	0.67
Support for governmental privacy protection	M	4.65 _a	4.76 _{ab}	4.76 _{ab}	4.78 _{ab}	4.84 _b	4.88 _b
	SD	0.90	0.89	0.82	0.81	0.87	0.84

SD: standard deviation.

Using Holm’s sequential Bonferroni post hoc comparisons, within rows, means with no lower case subscript in common differ at $p < .05$.

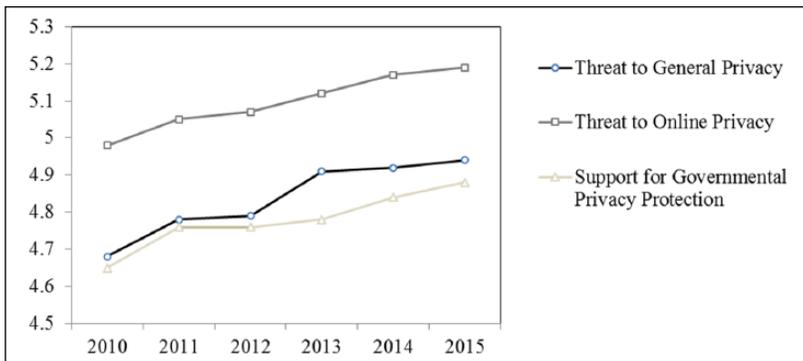


Figure 2. Trends in privacy perceptions between 2010 and 2015.

mediated the indirect paths between Facebook use and offline disclosure. Likewise, threat to general privacy ($\beta = -.20, p < .01$), threat to online privacy ($\beta = -.27, p < .001$), and support for governmental privacy protection ($\beta = -.16, p < .01$) mediated the indirect paths between Facebook use and online disclosure.

Trends in privacy perceptions

To address RQ1, a one-way analysis of variance showed statistically significant differences in privacy perceptions across the 5-year period (see Table 1 and Figure 2). Specifically, threat to general privacy, $F(5, 2783) = 5.13, p < .05$; threat to online privacy, $F(5, 2783) = 4.75, p < .05$; and support for governmental privacy protection, $F(5, 2783) = 3.22, p < .05$, gradually increased between 2010 and 2015. Post-hoc comparisons indicated that ratings for each privacy perception domain in 2015 were significantly higher than those in 2010.

Table 2. Trends in self-disclosure between 2010 and 2015.

Self-disclosure	Year	Year					
		2010	2011	2012	2013	2014	2015
Offline self-disclosure	M	4.58 _a	4.35 _{ab}	4.18 _{bc}	4.09 _{cd}	3.95 _{de}	3.77 _e
	SD	0.71	0.74	0.69	0.79	0.83	0.80
Online self-disclosure	M	4.33 _a	4.10 _{ab}	4.04 _{bc}	3.90 _{cd}	3.68 _{de}	3.54 _e
	SD	0.68	0.76	0.74	0.82	0.78	0.75

SD: standard deviation.

Using Holm’s sequential Bonferroni post hoc comparisons, within rows, means with no lower case subscript in common differ at $p < .05$.

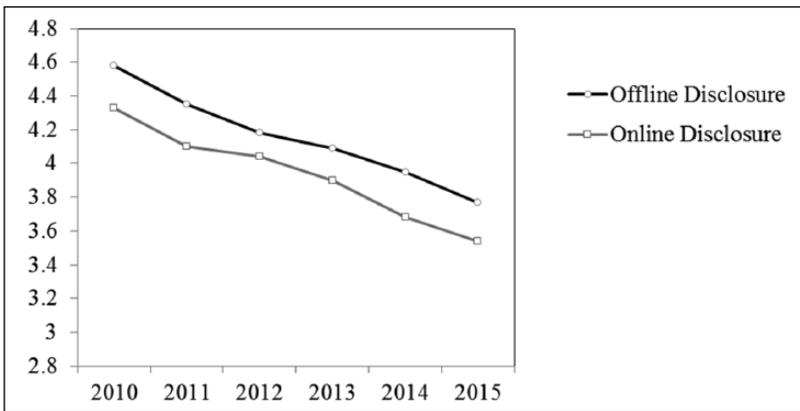


Figure 3. Trends in self-disclosure between 2010 and 2015.

Trends in self-disclosure

To address RQ2, a one-way analysis of variance showed statistically significant differences from year to year in self-disclosure behaviors (see Table 2 and Figure 3). Specifically, offline self-disclosure, $F(5, 2778)=12.89, p < .001$, and online self-disclosure, $F(5, 2783)=44.02, p < .001$, steadily decreased between 2010 and 2015. Post-hoc comparisons showed that while there was no significant difference in self-disclosure between consecutive years, significant differences emerged, however, between 2-year intervals and beyond.

Changes in relationships between Facebook use and privacy perceptions

To address RQ3, a series of 2 (Facebook use: light, heavy) \times 6 (Year) analyses of variance were conducted on each of the three domains of privacy perceptions to determine if the relationships between Facebook use and privacy perceptions changed during the 5-year period. A median split was employed for each year to dichotomize Facebook use such that those reporting less than the median hours/day of Facebook use were categorized as

Table 3. Threat to general privacy: Facebook Use × Year interaction.

Facebook use	Year	Year					
		2010	2011	2012	2013	2014	2015
Light	M	4.86 _{aB}	4.85 _{aB}	4.82 _{aA}	4.85 _{aA}	4.90 _{aA}	4.94 _{aA}
	SE	.06	.05	.05	.05	.05	.06
Heavy	M	4.39 _{aA}	4.55 _{bA}	4.69 _{cA}	4.84 _{dA}	5.01 _{eA}	5.04 _{eA}
	SE	.05	.05	.06	.05	.05	.06

SE: standard error.

Using Holm’s sequential Bonferroni post hoc comparisons, within rows, means with no lower case subscript in common differ at $p < .05$; within columns, means with no upper case subscript in common differ at $p < .05$.

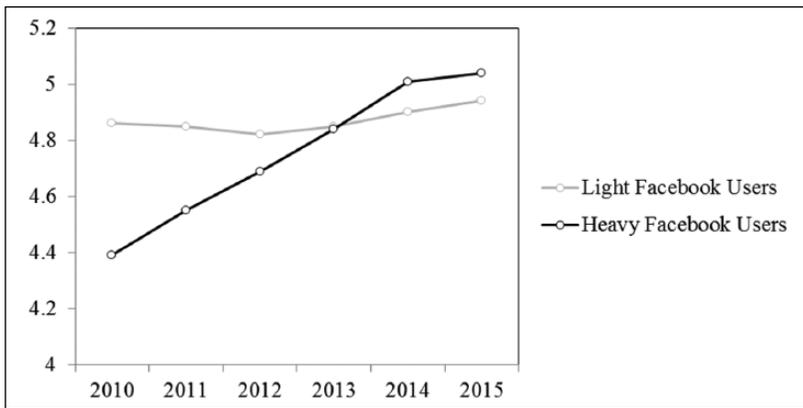


Figure 4. Threat to general privacy: Facebook Use × Year interaction.

light users and those reporting more than the median hours/day of Facebook use were categorized as heavy users. Although each of the analyses yielded significant main effects (i.e. heavier users indicated lower threat to general privacy, threat to online privacy, and support for governmental privacy protection, and these privacy concerns increased over the years), our primary interest was to examine the interaction effects.

Threat to general privacy. The analysis yielded a significant Facebook Use × Year interaction effect, $F(5, 2709) = 3.89, p < .01, \eta_p^2 = .01$ (see Table 3). Figure 4 illustrates that for light users, there was no significant year-to-year change in threat to general privacy. Yet, for heavy users, there was a significant positive linear trend for threat to general privacy. Moreover, in the earlier years of 2010 and 2011, the difference in threat to general privacy between light and heavy users was significant, whereas there was no significant difference from 2012 onward.

Threat to online privacy. The analysis revealed a significant Facebook Use × Year interaction effect, $F(5, 2709) = 5.75, p < .01, \eta_p^2 = .01$ (see Table 4). Figure 5

Table 4. Threat to online privacy: Facebook Use × Year interaction.

Facebook use	Year						
		2010	2011	2012	2013	2014	2015
Light	M	5.12 _{aB}	5.18 _{aB}	5.16 _{aB}	5.22 _{aA}	5.20 _{aA}	5.23 _{aA}
	SE	.05	.04	.04	.05	.05	.05
Heavy	M	4.42 _{aA}	4.67 _{bA}	4.84 _{cA}	5.10 _{dA}	5.14 _{dA}	5.17 _{dA}
	SE	.06	.06	.05	.05	.05	.05

SE: standard error.

Using Holm’s sequential Bonferroni post hoc comparisons, within rows, means with no lower case subscript in common differ at $p < .05$; within columns, means with no upper case subscript in common differ at $p < .05$.

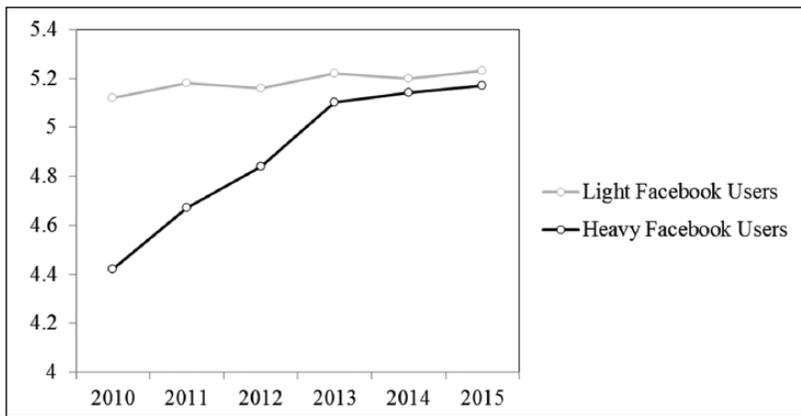


Figure 5. Threat to online privacy: Facebook Use × Year interaction.

illustrates that for light users, there was no year-to-year change in threat to online privacy. However, for heavy users, there was a significant positive linear trend for threat to online privacy, except between 2013 and 2015. Moreover, whereas in the earlier years between 2010 and 2012, the difference in threat to online privacy between light and heavy users was significant, there was no significant difference from 2013 onward.

Support for governmental privacy protection. The analysis yielded a significant Facebook Use × Year interaction effect, $F(5, 2709) = 5.92, p < .01, \eta_p^2 = .01$ (see Table 5). Figure 6 illustrates that for light users, there was no year-to-year change in support for governmental privacy protection. Yet, for heavy users, there was a significant positive linear trend for support for governmental privacy protection from 2010 to 2011 and 2013 to 2015. Moreover, whereas in the earlier years of 2010 and 2011, the difference in support for governmental privacy protection between light and heavy users was significant, there was no significant difference from 2012 onward.

Table 5. Support for governmental privacy protection: Facebook Use × Year interaction.

Facebook use	Year						
		2010	2011	2012	2013	2014	2015
Light	M	4.83 _{aB}	4.78 _{aB}	4.72 _{aA}	4.79 _{aA}	4.81 _{aA}	4.86 _{aA}
	SE	.06	.05	.06	.06	.06	.05
Heavy	M	4.30 _{aA}	4.60 _{bA}	4.61 _{bA}	4.68 _{bA}	4.87 _{cA}	4.91 _{cA}
	SE	.05	.05	.06	.05	.05	.06

SE: standard error.

Using Holm’s sequential Bonferroni post hoc comparisons, within rows, means with no lower case subscript in common differ at $p < .05$; within columns, means with no upper case subscript in common differ at $p < .05$.

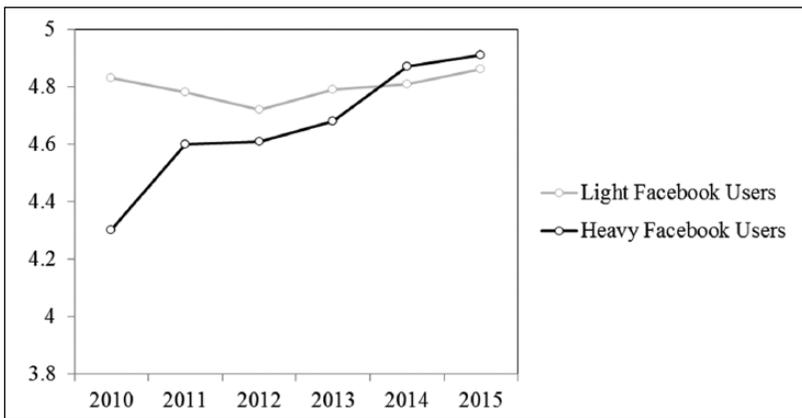


Figure 6. Support for governmental privacy protection: Facebook Use × Year interaction.

Changes in relationships between privacy perceptions and self-disclosure

To address RQ4, a series of multiple linear regressions were performed to determine whether the relationships between privacy perceptions and self-disclosure behaviors changed in the time frame between 2010 and 2015.

Offline self-disclosure. The analysis revealed a significant Threat to General Privacy × Year interaction ($\beta = .39, p < .01$) for offline disclosure. Specifically, threat to general privacy became a weaker negative predictor of offline disclosure as time progressed (2010: $\beta = -.32, p < .01$; 2011: $\beta = -.24, p < .01$; 2012: $\beta = -.19, p < .05$; 2013: $\beta = -.17, p < .05$; 2014: $\beta = -.14, p < .05$; 2015: $\beta = -.12, p < .05$). Similar patterns emerged for the other two privacy perception domains. A significant Threat to Online Privacy × Year interaction ($\beta = .27, p < .01$) for offline disclosure indicated that threat to online privacy became a weaker negative predictor of offline disclosure across the years (2010: $\beta = -.21, p < .01$; 2011: $\beta = -.18, p < .05$; 2012: $\beta = -.14, p < .05$; 2013: $\beta = -.10, p < .05$; 2014: $\beta = -.03, p < .05$; 2015: $\beta = -.02, p < .05$). Likewise, a significant Support for Governmental

Privacy Protection \times Year interaction ($\beta = .29, p < .01$) for offline disclosure revealed that support for governmental privacy protection became a weaker negative predictor of offline disclosure from year to year (2010: $\beta = -.19, p < .05$; 2011: $\beta = -.13, p < .05$; 2012: $\beta = -.13, p < .05$; 2013: $\beta = -.09, p < .05$; 2014: $\beta = -.02, p < .05$; 2015: $\beta = -.01, p < .05$).

Online self-disclosure. The analysis yielded a significant Threat to General Privacy \times Year interaction ($\beta = .31, p < .01$) for online disclosure. In particular, threat to general privacy became a weaker negative predictor of online disclosure with time (2010: $\beta = -.26, p < .01$; 2011: $\beta = -.23, p < .01$; 2012: $\beta = -.16, p < .05$; 2013: $\beta = -.14, p < .05$; 2014: $\beta = -.10, p < .05$; 2015: $\beta = -.07, p < .05$). Similar patterns emerged for the other two privacy perception domains. A significant Threat to Online Privacy \times Year interaction ($\beta = .37, p < .01$) for online disclosure indicated that threat to online privacy became a weaker negative predictor of online disclosure across the years (2010: $\beta = -.35, p < .01$; 2011: $\beta = -.32, p < .01$; 2012: $\beta = -.27, p < .01$; 2013: $\beta = -.20, p < .01$; 2014: $\beta = -.18, p < .05$; 2015: $\beta = -.14, p < .05$). Likewise, a significant Support for Governmental Privacy Protection \times Year interaction ($\beta = .21, p < .05$) for online disclosure revealed that support for governmental privacy protection became a weaker negative predictor of online disclosure from year to year (2010: $\beta = -.20, p < .01$; 2011: $\beta = -.18, p < .05$; 2012: $\beta = -.13, p < .05$; 2013: $\beta = -.08, p < .05$; 2014: $\beta = -.03, p < .05$; 2015: $\beta = -.02, p < .05$).

Discussion

Using cultivation theory as a framework to examine the pervasive theme of self-disclosure on SNSs, this research supports the expected overall relationship between Facebook use and more relaxed privacy attitudes, which subsequently led to greater self-disclosure in both online and offline contexts. These results suggest that SNSs serve a socializing role by conveying to users a reality where personal data are freely exchanged and self-disclosure is highly routinized. The influx of personal information in the virtual environment appears to cultivate perceptions of privacy such that users are less concerned about privacy risks and pay less attention to privacy safeguards. SNSs can thus be viewed as a collective symbolic environment where users learn about common themes and practices associated with high volumes of information disclosure. Applying a cultivation perspective to the context of social media, this study contributes to existing literature by confirming the socialization potential of SNSs to impact users' attitudes and beliefs pertaining to issues of privacy and self-expression.

However, when taking into consideration how these aforementioned relationships have changed during the previous 5 years, our longitudinal analysis yielded divergent patterns in the fluctuation of risk perceptions between light and heavy Facebook users. On the global level, although light Facebook users generally reported stronger risk perceptions, as compared to heavy Facebook users, the data revealed that their threats to general and online privacy and support for governmental privacy protection remained stable across time. This finding suggests that light consumption of social media has no influence over individuals' views on privacy. Yet, privacy concerns among heavy users steadily increased to comparable levels of light users. While the gap in risk perceptions between light and heavy users was more noticeable in the earlier years between 2010 and

2012, these differences subsided after 2012. In other words, the groups mainstreamed toward higher levels of privacy concerns.

Some explanations can be offered for these compelling trends. First, as heavy Facebook users are generally more exposed to personal data online, it is important to consider the functional use of this information. Whereas extensive research points to the prosocial effects of self-disclosure on impression formation and management and the strengthening of social bonds (Nosko et al., 2010), a number of antisocial effects are associated with the misuse of personal data. Specifically, frequent online activities of bullying, sexual and violent harassment, and clique formation have yielded a host of harmful psychological outcomes including anxiety, social isolation, privacy sensitivity, and depression (Hinduja and Patchin, 2010). Debatin et al. (2009) found that while Facebook was strongly perceived as a tool to enhance social connectedness, only when participants were asked to speak specifically about its role in stimulating gossip and rumors did they openly acknowledge partaking in such activities. Hence, it is possible that although social media offer meaningful opportunities to enrich social interactions, prolonged SNS consumption potentially exposes users to instances where privacy is abused. More extreme cases of privacy invasion may come in the form of hacking by computer experts. Such incidents have become much more common in recent years, increasing users' sensitivity to personal data (Federal Bureau of Investigation, 2015). Moreover, these breaches to security are extensively covered in the media which may further amplify awareness and fear of hacking, spam, spoof, and identity theft. This perhaps explains why threat to privacy and support for privacy safeguards escalated, particularly for heavy Facebook users across the years, whereas there was no change in these domains for those exhibiting light use.

Second, trends indicating the convergence in risk perceptions between light and heavy Facebook users may alternatively be informed by the process of technology diffusion. Specifically, individuals' abilities and motivations largely impact their likelihood to adopt innovations (Rogers, 2003). Early adopters tend to be those who are generally more motivated to adopt a technology, have greater self-efficacy, and appreciate the technology's symbolic value and meaning. It may be possible that heavy users of Facebook were the early adopters and are more motivationally driven, more confident about their skills in using the platform, and perceive the SNS as more positively gratifying than light users, implicit in their high consumption patterns. Given these user characteristics, it is understandable why in the initial years of our study, those who were more heavily engaged with Facebook reported significantly lower levels of privacy concerns. However, our study is limited in that data concerning the number of years users have been active on the site were not captured. Thus, future research should certainly consider examining SNS adoption patterns in order to better explain and predict privacy attitude trends. Furthermore, as knowledge acquisition is a central component of the diffusion process (Rogers, 2003), when users engage with a technology, they naturally learn about its affordances, benefits, and risks with time. Heavier users are more likely to attain such knowledge in greater quantities and at a faster rate due to the intensity and duration of their involvement. Hence, this increased familiarity with and sensitivity to the Facebook environment and potential exposure to personal privacy risks may have contributed to the gradual increase in their threat to privacy. On the contrary, knowledge acquisition

occurs at a slower rate for light users, thus explaining why light consumption produced no noticeable changes in attitudes toward privacy.

At the global level, this study also found that individuals with more relaxed privacy attitudes had a greater tendency to self-disclose in both offline and online environments, corroborating the attitude–behavior link proposed by TRA (Fishbein and Ajzen, 1975) and the notion that personal information disclosure is highly regulated by privacy control mechanisms (Derlega and Chaikin, 1977; Petronio, 2002). However, our trend data show striking patterns such that the negative relationships between privacy perceptions and self-disclosure practices weakened as time progressed. In other words, users' threats to general and online privacy and support for governmental privacy protection became less robust predictors of personal information exchange across the 5-year period. These findings are potentially explained by the notion that light and heavy Facebook users mainstreamed toward higher levels of perceived privacy threat. Furthermore, there are perhaps factors outside of privacy risk perceptions that account for variations in self-disclosure. For example, as relationships develop, trust becomes even more important in building self-confidence and ensuring relational certainty (Mietzner and Lin, 2005). Therefore, it is possible that over time, the role of trust carries even more weight in predicting self-disclosure practices than the risks associated with the environment in which personal information exchange occurs.

The present research further supports the important mediating role of privacy attitudes, specifically threat to privacy and support for privacy safeguards, in the indirect effects of Facebook use on self-disclosure. This finding is consistent with previous studies showing that the consumption of SNSs does not directly drive disclosure behaviors (Acquisti and Gross, 2006; Stutzman et al., 2011), but rather other intervening variables related to risk perceptions need to be considered. Therefore, in order for SNSs to maintain a climate inundated with rich information exchange, they need to ensure that perceptions of safety, transparency, and security are relatively high, placing users in an environment of minimal risk. Alternatively, researchers also suggest that users deploy privacy controls during their self-disclosures. Social stenography entails the use of intricate strategies such as smuggling meaning via in-group references to achieve privacy goals (boyd and Marwick, 2011). Hogan's (2010) lowest common denominator approach argues that individuals limit their content to the extent that it will be appropriate for all members of the network. Other scholars have found that people deliberately use multiple networks, platforms, and profiles to manage their privacy (Vitak et al., 2015). Such variation in information exchange behaviors demonstrates that not all disclosures are treated equally and that privacy is inherently valued.

Interestingly, the findings from this study also show similar patterns in the way privacy attitudes pertaining to both global and virtual domains predict offline and online disclosures. These results point to similarities in the nature of FTF and CMC interpersonal exchanges (Lampe et al., 2007), suggesting that these spaces are potentially interchangeable. Likewise, our research supports the work of Baym (1996), boyd (2007), and Marwick (2013) which discounts the idea that individuals have separate online and offline identities evident in the ways in which SNSs have become highly integrated and routinized in our everyday practices (Debatin et al., 2009). These results bolster the notion that disclosure patterns are no different in CMC conditions than they are in FTF

interactions, disconfirming the media richness perspective that greater self-disclosure is required to compensate for the lack of non-verbal and social cues online (Walther, 1996).

Additional trends are worth noting, particularly the progressive decline in Facebook use and offline and online disclosure and the steady increase in threat to general privacy, threat to online privacy, and support for governmental privacy protection during the past 5 years. Although Facebook remains the most popular SNS among adults, its overall growth has slowed down (Pew Research Center, 2015). Recent survey data show that users of SNSs such as Instagram, LinkedIn, Pinterest, and Twitter have increased at a faster rate than those of Facebook between 2012 and 2014. Moreover, multi-platform use has become more common such that 52% of adults online now use at least two SNSs. These findings from the Pew Research Center (2015) help explain the decrease in the number of hours people are spending on Facebook as was found in our study. Additionally, the contrasting patterns between Facebook use and risk perceptions in our data to some extent can be informed by the uses and gratifications approach. In the context of our research, privacy concerns could impact the anticipated gratifications sought from Facebook. Therefore, the decline in Facebook usage potentially reflects the lower perceived benefits or higher risks associated with its consumption. For example, the increase in criminal acts (e.g. identity theft, fraud, and computer hacking) in recent years, most notably the Edward Snowden leaks, may have contributed to the escalation of online privacy and security concerns among those in our sample. Moreover, during the 5-year period of our study, Facebook made various platform changes that received public scrutiny about privacy which could have impacted users' attitudes and disclosure of personal information. However, these trends should be interpreted with caution as the directionality of these variables is unclear. While it is possible that increased threat to privacy reduced Facebook use which inevitably fostered less self-disclosure due to users' absence on the platform, alternatively, some individuals may innately have more relaxed privacy boundaries. This relative ease and desire for disclosure could be linked to relatively low risk perceptions, propelling them to naturally gravitate toward SNSs that offer opportunities to satisfy their disclosure needs. Our trend analysis is limited in not allowing us to make causal claims among the variables of interest in this study. Therefore, future research should certainly consider employing a panel longitudinal design that follows the same people over time or experimental methods to precisely establish causality among SNS usage, privacy perceptions, and self-disclosure practices.

Another limitation of our study is that we sampled from a college population and the gender and racial composition of the sample is not evenly distributed, raising an external validity issue. Research has shown that younger users not only are less aware of privacy invasion risks, but also generously disclose personal information in their profiles (Taraszow et al., 2010). However, as students mature, particularly as they seek job opportunities, there may be growing concerns about future bosses seeing old photos from their college years (Sherman, 2013), consequently explaining a change in privacy attitudes and behaviors among the heavy users of Facebook in our study. Alternatively, it is also possible that the longer users are on Facebook, the more their audience diversifies, thus making users more aware of their privacy concerns (Binder et al., 2009; Vitak, 2012). Therefore, future research should consider contextual factors and the duration of time that users are active on SNSs. Furthermore, our study relied on self-reported measures of

personal information exchange rather than actual content shared by SNS users. Future researchers may consider coding the nature of actual information exchange as individuals perhaps have different interpretations of what constitutes as personal or private data. Additionally, factors aside from threat to privacy and support for privacy safeguards may mediate the paths between SNS usage and self-disclosure such as interpersonal trust (Kim et al., 2006) and the valence of self-disclosure outcomes (Utz, 2015). The consideration of these variables in future research will help us gain a more comprehensive understanding of SNSs' effects on disclosure practices.

Conclusion

The current investigation into the impact of SNS use on attitudes and behaviors associated with privacy and self-expression has important theoretical implications. First, this research uniquely applies a cultivation perspective (Morgan et al., 2015) to support the way SNSs potentially affect users' conceptions of reality. The omnipresence of self-disclosure in the virtual world represents a reality where the revelation of personal data may not only be perceived as exceedingly habitual, but also expected. Therefore, this study emphasizes the socializing and cultivating capacity of SNSs, particularly in the way prolonged use may have cumulative effects on people's privacy boundaries and the disclosure that is regulated by these boundaries. Second, the longitudinal nature of this research allows us to forecast patterns in the effects of SNS use on privacy perceptions and the exchange of personal information. The recent convergence in risk perceptions among light and heavy users points to the mitigating effect of SNS use on estimated threats to privacy. A ceiling effect could be occurring with perceived risk. This could also explain the diminishing negative relationships between privacy concerns and self-disclosure, alternatively suggesting potential desensitization effects.

This study invaluablely contributes to the existing body of literature on issues of privacy and self-disclosure on SNSs. This longitudinal analysis offers a more comprehensive and meaningful perspective of the trends in privacy perceptions and disclosure behaviors among SNS users during the past 5 years. As the diversification and the accessibility of SNSs continue to grow, examining changes in information dissemination and privacy boundary regulations become increasingly important to further understand how personal identities are created, developed, and managed over time.

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Author biographies

Mina Tsay-Vogel is an assistant professor in the Department of Mass Communication, Advertising & Public Relations and Co-Director of the Communication Research Center at Boston University. Her research interests include media effects, entertainment psychology, and social media use and influence.

James Shanahan is dean of the Media School at Indiana University. His research interests include cultural indicators, cultivation theory, media effects, and environmental communication.

Nancy Signorielli is a professor in the Department of Communication at the University of Delaware. Her research interests include content studies, cultivation analysis, media effects, and media and children.

The Presentation of Self in the Age of Social Media: Distinguishing Performances and Exhibitions Online

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Bernie Hogan¹

Abstract

Presentation of self (via Goffman) is becoming increasingly popular as a means for explaining differences in meaning and activity of online participation. This article argues that self-presentation can be split into performances, which take place in synchronous “situations,” and artifacts, which take place in asynchronous “exhibitions.” Goffman’s dramaturgical approach (including the notions of front and back stage) focuses on situations. Social media, on the other hand, frequently employs exhibitions, such as lists of status updates and sets of photos, alongside situational activities, such as chatting. A key difference in exhibitions is the virtual “curator” that manages and redistributes this digital content. This article introduces the exhibitional approach and the curator and suggests ways in which this approach can extend present work concerning online presentation of self. It introduces a theory of “lowest common denominator” culture employing the exhibitional approach.

Keywords

Goffman, online identity, performance, exhibition, privacy, symbolic interactionism

All the world’s a stage, And all the men and women merely
players: They have their exits and their entrances; And one
man in his time plays many parts.

—Shakespeare, *As You Like It*, 2/7

There is a distinct irony in Shakespeare’s claim, as spoken by Jacques in *As You Like It*. Shakespeare is not remembered for his charisma, his looks, or his wit at parties but for his voluminous plays and sonnets. The world is not only a stage but also a library and a gallery. We do not merely move through life’s stages, as Jacques’s monologue suggests, but leave a multitude of data traces as we go. In an era of social media, these data traces do not merely document our passage in life’s play but mediate our parts. We can interact with the data left by others alongside direct interactions with people themselves. The world, then, is not merely a stage but also a participatory exhibit.

The goal of this article is to clarify the ontological (rather than emic or phenomenological) distinction between actor and artifact. The actor performs in real time for an audience that monitors the actor. The artifact is the result of a past performance and lives on for others to view on their time. In making this distinction, I contend it is possible to extend current theories of online interaction and answer existing research questions such as: Why is it that contexts have “collapsed” online, as boyd suggests? Why is it so hard to nail down the notion of a friend online? How tightly can we

couple the identity of an individual online and the activities of that individual? Addressing these questions entails a distinction between the sorts of online spaces where actors behave with each other (“performance” spaces, or behavior regions; Goffman, 1959) and “exhibition” spaces where individuals submit artifacts to show to each other. Clarifying this distinction creates an expanded theoretical repertoire for scholars, thereby enabling them to disentangle processes occurring when actors are copresent (in time, if not in the same geographic place) and processes that occur when actors are not necessarily present at the same time but still react to each other’s data.

An exhibition is still a form of presentation of self. One can find off-line personal exhibitions in the presentation of photos in someone’s house. Indeed, Halle (1996) indicates how class clearly differentiates the choice of artwork (or lack thereof) on display in living rooms. This is to say that people take their choice of what to display personally and consider it a form of impression management.

This distinction between performance and exhibition should be useful to scholars who are interested in the presentation of self online, and those who, like this author, consider notions of impression management a useful theoretical foil

¹Oxford University, Oxford, UK

Corresponding Author:

Bernie Hogan, Oxford University, 1 St Giles, Oxford, OX1 3JS, UK
Email: bernie.hogan@oii.ox.ac.uk

for understanding online behavior (boyd, 2007; Marwick & boyd, in press; Mendelson & Papacharissi, 2010; Lewis, Kaufman, & Christakis, 2008; Quan-Haase & Collins, 2008; Schroeder, 2002; Tufekci, 2008).

I begin this article with a review of Goffman's dramaturgical approach and its extensive use within social media studies. I then introduce the exhibitional approach, paying particular attention to the "curator," a key role generally absent from everyday life situations. In the penultimate section, I cover two areas of concern on social network sites (friend lists and collapsed contexts), where shifting the focus toward exhibitions may reveal new insights and facilitate future research agendas.

Goffman's Dramaturgy

Goffman's dramaturgical approach is a metaphorical technique used to explain how an individual presents an "idealized" rather than authentic version of herself. The metaphor considers life as a stage for activity. Individuals thus engage in performances, which Goffman (1959) defines as "activity of an individual which occurs during a period marked by his continuous presence before a particular set of observers and which has some influence on the observers" (p. 22). This continued presence allows individuals to tweak their behavior and selectively give and give off details, a process he termed "impression management."

One core assumption of the dramaturgical approach is that activity takes place in specific bounded settings. To explain this Goffman draws on Roger Barker's (1968) notion of the "behavior setting". In reacting to the behaviorism of the early 20th century (Skinner, 1939; Watson, 1913), Barker (1968) suggested most behavior was not determined by individual-specific stimulus-response patterns but was instead guided by the norms and goals of specific settings. Goffman (1959) distilled these specific settings into the well-worn dichotomy of the "front region" and the "back region," or more colloquially, the "front stage" and the "back stage." In the front stage, we are trying to present an idealized version of the self according to a specific role: to be an appropriate server, lecturer, audience member, and so forth. The backstage, as Goffman says, is "a place, relative to a given performance, where the impression fostered by the performance is knowingly contradicted as a matter of course" (p. 112). In the backstage, we do much of the real work necessary to keep up appearances.

What is key for this article is to highlight how situations are bounded in space and time. According to Goffman (1959),

[W]hen a performance is given it is usually given in a highly bounded region, to which boundaries with respect to time are often added. The impression and understanding fostered by the performance will tend to

saturate the region and the time span, so that any individual located in this space-time manifold will be in a position to observe the performance and be guided by the definition of this situation which the performance fosters. (p. 106)

This quote parallels Barker key qualities of a behavior setting (adapted from Heft, 2001, pp. 253-254):

- Specifiable geographical location
- Temporal boundaries
- Boundaries are perceptible
- Behavior settings exist independently of any single person's experience of them

Considering these qualities of the situation, Goffman's (1959) dramaturgical approach is quite apt. Much like a stage play (rather than the script), it is bounded in space and time, and represents the instantiation of specific roles. Players seek to perform their role as convincingly as possible, and for the show to succeed there is much work that must take place behind the scenes. That these regions are bounded in time is implicit in how Goffman discusses shifts in performances:

By proper scheduling of one's performances, it is possible not only to keep one's audiences separated from each other (by appearing before them in different front regions or sequentially in the same region) but also to allow a few moments in between performances so as to extricate oneself psychologically and physically from one personal front, while taking on another. (p. 138)

The Audience

Within the dramaturgical approach, the audience refers those who observe a specific actor and monitor her performance. More succinctly, these are those for whom one "puts on a front." This front consists of the selective details that one presents in order to foster the desired impression alongside the unintentional details that are given off as part of the performance. Underlying this notion is the idea that the audience makes a single coherent demand on the individual. The above quote ("By proper scheduling . . .") reminds us that Goffman not only considers different regions as bounded in space-time, but that the audiences are bounded as well. That is to say, there is usually one specific front that needs to be presented in any given situation, because each region is not just a space-time locus, but a time-space-identity locus inhabited by a specific audience. Thus, it does not matter if the waiter knows his customers personally, so much that the waiter puts on that specific front to the customers. Moreover, a front involves the continual adjustment of self-presentation based on the presence of others. Goffman (1961) reinforces

this idea in *Encounters*, by discussing unfocused and focused interactions. Focused interaction “occurs when people effectively agree to sustain for a time a single focus of cognitive and visual attention” (p. 7). But even in unfocused interaction such as “when two strangers across the room from each other . . . [each] modifies his own demeanor because he himself is under observation” (p. 7). The key point here is that individuals put on specific fronts and modify said fronts because of the sustained observation of an audience.

Goffman also notes that conflict can arise when fronts collide. In *The Presentation of Self in Everyday Life*, Goffman (1959) discusses the civil inattention that takes place when someone answers a telephone in front of others, or when conversations in public are loud enough to be heard by a third party. Similarly, Ling (2008) discusses the problem associated with the “dual-front” that emerges from the cell phone. He notes how an office phone that is tethered to the place of work represents the individual in that place, and is part of the rituals that constitute the office. In contrast, the cell phone connects people in many situations including ones where there is substantial mismatch between the two fronts (such as the high-powered business deal that gets done at the otherwise languid airport terminal).

Goffman as Applied to Online Media

Goffman might not consider himself a media scholar, although Lemert (1997) makes the case that Goffman is a product of the televisual age. And to the extent that he does, it might be more for *Frame Analysis* (Goffman, 1974) than for *The Presentation of Self in Everyday Life* (Goffman, 1959). Nevertheless, Goffman’s dramaturgical approach is frequently considered a useful foil for understanding online presentation of self. The following list contains some of the many articles that use Goffman to this end:

- Donath (1998) employed Goffman as a starting point for signaling theory.
- Schroeder (2002) uses Goffman’s dramaturgy quite literally in his analysis of virtual worlds.
- boyd (2004, 2006, 2007) used Goffman to ground SNS activity as networked identity performance.
- Hewitt and Forte (2006) use Goffman to explain identity production on Facebook and conflict because of the use of multiple fronts.
- Robinson (2007) argues for the effectiveness of Goffman’s approach over postmodern perspectives found in Turkle (1997).
- Lewis, Kaufman, and Christakis (2008) draw on Goffman’s front stage/back stage distinction for deriving research questions about privacy.
- Tufekci (2008) builds her research on Facebook presentation around Goffman alongside Dunbar’s social brain hypothesis.
- Quan-Haase and Collins (2008) use impression management to discuss the art of creating status messages that signal availability.
- Menchik and Tian (2008) use Goffman and symbolic interactionism more broadly to interpret “face-saving” on e-mail mailing lists.
- Mendelson and Papacharissi (2010) demonstrate that pictures on social network sites conform to traditional notions of impression management.

A common thread running through these articles is that individuals would employ impression management (or the selective disclosure of personal details designed to present an idealized self). However, several articles draw more explicitly on the dramaturgical approach to suggest that sites based on access control are inherently private, and therefore, a “back stage” (boyd, 2006; Lewis et al., 2008; Robinson, 2007).

The notion that media provide a window into the private lives of others (or into things they would not normally show in public) is not specific to social media. This idea was used by Meyrowitz (1986) to explain some of the cultural impacts of television. He asserts that television exists in a private space and shows private lives: “through electronic media, groups lose exclusive access to aspects of their own back region, and they gain views of the back regions of other groups” (Meyrowitz, 1986, p. 135). Children get to view the typical adult world of their parents, men and women are now privy to conversations that would normally be segregated, and idols are brought down to earth through tabloid journalism. It is from here we can see the genesis of boyd’s “collapsed contexts” (2007), as well as concerns about impression management vis-à-vis tabloid journalism and television’s focus on scandal.

Backstage Is Not Private Space

I consider two issues emerging from this model: the conflation of the backstage with private spaces and the conflation of presentation of self with performance.

Several researchers have used the idea that Facebook is a backstage (Lewis et al., 2008; Tufekci, 2008) in order to motivate questions about privacy. However, the idea that some information is to be withheld from people is not the same thing as saying this information was part of what went into the creation of a front or that it contradicts a front as matter of course. From Goffman’s definition, anywhere can be a back stage to another front stage. Academics working in their office present a front to the colleagues at their department by showing studiousness and perhaps not surfing the net. However, this front may also involve long periods of deliberation on a piece of work that is hidden from another front: the audience at a conference.

Online, the notion of a backstage fails to capture the role of a third party in regulating who has access to information

about an individual. That Facebook allows only friends or “friends of friends” to see specific content does not suggest that this content signifies a backstage to other possible content that is available for anyone to see. To expect privacy online is not to imply that one has something worth hiding or a presentation that may contradict one’s role in other spheres of life. Rather, it signifies that some individuals are classified as being considered contextually appropriate for this specific information (Nissenbaum, 2004). It further suggests that there is a third party (Facebook’s servers) that knows who is considered an appropriate audience member for this content and who is not.

Lewis et al. (2008) used the notion of the backstage when comparing cultural information displayed by individuals with private and public accounts. They discovered that those with public accounts actually display more obscure music tastes. They loosely connected this to the notion of the backstage and suggest that some individuals draw open the stage’s curtain to let the world see their tastes. To make their metaphor successful, they imply that music tastes are something inherently private and something that go into the creation of a front stage. However, it is more likely that showing music tastes is appropriate to the context of Facebook. Musical tastes are not a backstage but rather are a front. Some people carefully select which tastes to show, and thus, give a clear reason to make their profile less private. It is not that others with a narrower range of music want to hide their musical tastes but that they are indifferent to the association of taste and identity.

Artifacts Are Representations Not Performances

Beyond the issue of the back stage and privacy is a deeper issue about whether online content can be considered a performance in the first place. The conflation of performance and online profile is likely because of the notion that because a blog or profile signifies a single individual it does not merely stand in for that individual but is that individual (Reed, 2005). Similarly, Robinson (2007) coins the term *cyberperformer* to denote individuals who perform in cyberspace. In doing so, she equates the behavior of individuals in chat rooms and instant messengers (who either interact in real time or with specific known recipients) with the behavior of Flickr.com photo submitters and bloggers.

Can all content be considered a performance? To address this issue, it is useful to distinguish between performance as ephemeral act and performance as recorded act. Once a performance has been recorded, the nature of the performance has altered. It may still be a presentation of self, and undoubtedly it continues to signify an individual. However, it no longer necessarily bounds the specific audience who were present when the performance took place. Instead, it can be taken out of a situation and replayed in a completely different context. For example, a concert video may bring back

great memories of a summertime show, but it does not transport the band to the viewer’s living room.

The distinction between ephemeral act and recorded has an instructive parallel in the domain of art. In *The Work of Art in the Age of Mechanical Reproduction*, Benjamin (1967) considers the functions of art in a time when process and reproduction make most artwork easily accessible to the masses. He asserts that these reproductions lack the unique “aura” of the original object. This aura is not a transcendental force but simply the unique historical trajectory of a singular object. This distinction between unique artwork with its aura and mechanical reproductions designed to signify the original parallels the distinction between singular individual, with one’s own mind and presence, and digital traces designed to signify the individual.

Benjamin (1967) notes several consequences of this shift away from an emphasis on the aura of objects that also have a relevant parallel. First, in being reproduced, the reception of art becomes less something to be revered in a unique situation and more something to be consumed alongside other work:

In the same way today, by the absolute emphasis on its exhibition value the work of art becomes a creation with entirely new functions, among which the one we are conscious of, the artistic function, later may be recognized as incidental. (p. 225)

Benjamin also suggests that individuals should be dissociated from their reproductions. All historically unique objects (including people) have an aura. He suggests that film is what separates the person from their aura:

[F]or the first time—and this is the effect of film—man has to operate with his whole living person, yet forgoing its aura. For aura is tied to his presence; there can be no replica of it. (p. 229)

Third, he presages the difference between immediate impression management and the context-collapsing artifacts online. He does this by considering the fixed gaze of the camera:

The film actor lacks the opportunity of the stage actor to adjust to the audience during his performance, since he does not present his performance to the audience in person . . . The audience’s identification with the actor is really an identification with the camera. (p. 228)

Thus, embedded in Benjamin’s (1967) thesis about artwork is a relevant distinction between the individual and the representation of the individual. Benjamin, as well as those writing in his wake tended to focus on the consequences of art and film (cf. Hansen, 1987). However, there is nothing in his thesis that prevents us from importing these ideas into everyday

life—now that everyday life is replete with reproductions of the self. To link this notion more explicitly to Goffmanian impression management, I offer below an explication of exhibition sites.

Exhibitional Approach Introduced

An exhibition site can now be defined as a site (typically online) where people submit reproducible artifacts (read: data). These artifacts are held in storehouses (databases). Curators (algorithms designed by site maintainers) selectively bring artifacts out of storage for particular audiences. The audience in these spaces consists of those who have and those who make use of access to the artifacts. This includes those who respond, those who lurk, and those who acknowledge or are likely to acknowledge.

Scope

In contrast to situations, many social media sites do not depend on being bounded in space and time with continued observation occurring between individuals. Instead they have the following features, which I consider sufficient components of an exhibition space:

1. Information signifying an individual is delivered to the audience, on demand by a third party.
2. Because of the reproducibility of content and the fact that it is sent to a third party for distribution, the submitter does not continually monitor these data as an audience is receiving it, and may possibly never fully know the audience.

Sites such as Facebook.com, Flickr.com, and YouTube.com have these qualities, as do the talk pages on Wikipedia.org (where content is associated with contributors). Wikipedia article pages would not be considered exhibition sites since the article is not designed to signify the specific individuals who wrote the article. Blogs generally fulfill these criteria but online gaming sites would not. That is to say, these criteria are most closely associated with what we presently consider social media or social network sites (boyd & Ellison, 2007).

The first and fundamental criterion draws a line between that which requires the *present* in order to be understood and that which makes no such demand. Virtual worlds and most online gaming (particular first-person shooters and MMORPGs) take place in the present. A user's actions are not simply placed in a sequence (such as reply-to), but are understood through mutual reactions where the timing of each action is relevant. Although individuals are not copresent in space, they are still monitoring and reacting to each other. The context of the game or the social world stands in for the context of a specific setting (Schroeder, 2002). In contrast, exhibition

spaces require a third party to store data for later interaction; real-time interaction can take place, but it is not necessary. This is clearly unlike a "situation" as is noted by the aforementioned quotes from Goffman.

The second criterion draws a line between that which is *addressed* and that which is *submitted*. Some content is addressed to a particular person or some particular people. E-mail and instant messaging are examples of addressed media. Each message denotes a specific sender and a specific set of recipients. This is much like a situation where people are addressing specific alters or a specific audience. It is not necessarily in real time, but one can still put up a front intended for a specific set of recipients, and monitor activity in a direct reply. In exhibition spaces content is submitted to a data repository; people post status updates to Facebook, upload pictures to Picasa.com or Flickr.com and post articles to a blog. This latter content may be produced and submitted with a specific audience in mind, but those who view and react to this content may be different from those for whom it was intended (if it was intended for anyone in particular to begin with).

These criteria do not preclude the use of an exhibitional approach in other domains but to suggest spaces where it is most appropriate: blog posts, photo galleries, and status updates. These are places where content is submitted to a third party, available to a large and potentially unknowable audience and tethered to a specific submitter. The extension of the exhibitional approach to other spaces (and to hybrid spaces such as Google Wave) is beyond the scope of this article.

The Curator

Unique historical artifacts have typically been curated by experts. These people select which artworks to display, where to place them, and what narrative to tell about this selection. With a shift from presence (and aura) to data and reproduction, it is now possible for information signifying someone to be endlessly copied and reconfigured. Everyone can have his or her own exhibit, as long as the relevant information can be displayed with some coherence. Yet it is simply impractical to have a human curator pore over one's social information and devise a unique and relevant exhibit for each person, on demand. Consequently, computers have taken on this role, devising continually more sophisticated ways to curate artifacts.¹

Curators mediate our experience of social information. Good curation presents things to the user that the user finds relevant or interesting. Bad curation is either overwhelming or unexpectedly irrelevant. Curators facilitate the following functions, which are available online and generally not a part of performances and situations: filtering, ordering, and searching. These functions are based on the fact that storehouses keep more artifacts than are generally on display. As such, it is necessary to limit the artifacts in some meaningful way.

Filtering artifacts simply limits which artifacts are on display. This can be done based on qualities of the artifacts or qualities of the relationship between an individual and the artifacts. For example, one might want to view only tweets that mention a specific topic. If the tweet is public and mentions the topic, it is included in the set of things to be displayed. If it is private, then the curator determines access to this tweet. If I am following someone's private account, then I can view these tweets.

Filtering performances is not something that can be done in a situation. Granted, one can choose to ignore a performance or specific aspects of it. People may choose to censor a humorous story for a specific group. But selectivity in a situation is not the same as filtering. Performers censor, curators filter on behalf of the audience. We can "tune in" or "tune out" performances, but filtering implies that one can evaluate a *set* of things *before* they are presented for consumption. Curators can do this because they retrieve things from a storehouse and put them on display.

Artifacts are also *ordered* in some way. Depending on the task, there is often a meaningful ordering. Communication is usually presented in reverse chronological order. Items for sale are frequently ordered according to price. More sophisticated algorithms can order items by relevance. For example, Facebook will select potential friends for the user from the larger set of friends. These potential friends will be ordered using a black box statistical metric seemingly related to the individuals one is likely to know. Amazon orders potential products based on their perceived relevance, which is a rank order based on a statistical measure of similarity. Lists of names are often sorted alphabetically.

Again, ordering is not something that can be done in a performance. That is not to say things in situations do not have a sequence. It is to say that performances in situations cannot be "reordered" as convenient. The order of online artifacts is based on the fact that each artifact is part of a set of similar artifacts that are known ahead of time. Performances have sequence but because they take place in "real time" or have a specific space-time locus they cannot be resorted at will.

Finally, artifacts online can be *searched*. Searching is simply filtering (and ordering) based on user input. Curators often work passively, as when people view their RSS readers, their Twitter queues or their Facebook news feeds. However, sometimes filtering and ordering is done on content that includes specific requests from a user. Simply by viewing online content one is subject to filtering and ordering. Searching requires the user to submit additional information to fine-tune the display of content.

The role of the curator is to manage the preexisting content on behalf of the submitters. Within this space, it is more relevant to ask about the access controls that the curator put in place than whether or not this space is private. We may ask about the consequence of a specific ordering of data and

whether this ordering is effective. We may also ask what is hidden from the users as a result of filtering, or what data are available for users to reorder. For example, can one reorder friends based on the number of mutual ties? Can one restrict access to content to a specific group of friends (i.e., impose a filter based on specific audience members)? How clearly do individuals understand different groups of friends on a given site? How easy is it to move content from one site to another?

Limits of the Exhibitional Approach

The exhibitional approach does not cover all online interaction, much like the dramaturgical approach does not cover all off-line interaction. For example, virtual worlds are hybrid spaces that share aspects of both off-line situations and online exhibitions. Insofar as there are servers that mediate information between individuals who are not immediately copresent, there is some recording involved. But play in social worlds generally takes place in specific bounded locations at specific bounded times in the same way that off-line interaction takes place in situations. One's avatar is meant to signify her mind as acting in a virtual context. The avatar interacts directly with other avatars that appear on the screen within one's field of view. It simulates off-line interaction, and consequently simulates the situation. Thus, it is unsurprising that Goffman has already been applied to these spaces (Schroeder, 2002).

Examples That Apply an Exhibitional Approach

In the penultimate section, I illustrate some examples where an exhibitional approach may illuminate or at least reorient our interpretations of online spaces.

What Is a Friend Online?

Sharing artifacts online is often done through "friends." As such, people add many friends to their online profile in order to participate in these sites fully. Curators use this list of friends in order to determine how to properly redistribute content. This list, however, is not tethered to a situation, but to an individual, beyond any specific situation. Consequently, people can add many more friends than would normally be included in a specific situation. It is not uncommon for students to have more than 200 friends on a social networking site (boyd, 2007; Lewis et al., 2008). This is larger than the number of people one is likely to know personally and feel close to. Depending on the question asked and method used, the number of people in the personal network varies from the low 30s (Hogan, Carrasco, and Wellman, 2007) through the upper 60s (Boase, Horrigan, Wellman, & Rainie, 2006; McCarty, Bernard, Killworth, Shelley, & Johnsen, 1997) to upwards of 150 (Roberts, Dunbar, Pollet, & Kuppens, 2008), but rarely if ever above that.

The irony of this situation is that only 10 years ago, sociologists and those in related fields were actively assessing whether online interaction was isolating people (Kraut, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998; Nie, Hillygus, & Erbring, 2002). Yet in 2009, the most recent OxIS report in Britain notes ex-users and nonusers of the Internet report twice as much of a sense of loneliness as Internet users (Dutton, Helsper, and Gerber, 2009). At the same time, people online are complaining the need to manage overwhelming lists of friends (Acquisti & Gross, 2006; Hewitt & Forte, 2006). This is unsurprising as there cognitive limits to the number of people one can actively maintain in a personal network (Dunbar, 1998).

If we consider online friends not as a means for signifying those with whom we have close relations but those with whom we want to manage access to content, we can refocus both what a friend means online and how to manage the surging lists of friends on many social network sites. How can systems be designed in order to curate more effectively? How do users classify their friends relative to a classification that emerges from the traces of interaction on a website? Gilbert and Karahalios (2009) approach this latter question by focusing on the ways in which strong ties can be modeled through passive data, such as time to last message or mutual friends. This work is oriented toward the ordering of content that has already been submitted. It is therefore possible to consider it as a means for fine-tuning the curatorial process. However, there is still little work on the means for fine-tuning the submission process. Do strong ties represent a single group to which one submits content? Or are there different strong ties within different groups whereby it is more useful to submit to the group and have group members filter accordingly? Here I do not provide an answer but reframe the question so that an answer can more effectively conform to the reality of what a "friend" is in an exhibition space.

Collapsed Contexts and the Lowest Common Denominator?

Friends are a form of access control online, and followers are a form of information management. These metaphors (friend and follower) do not perfectly correspond to their original meanings. Nevertheless, they are evidently a useful way to simplify the process of granting access controls online. If anything, these metaphors may be too simple. boyd (2006) lists 13 plausible reasons for befriending someone she encountered in ethnographic studies with teens. Only one was being a friend. The remainder focused on popularity, concerns for access control, and difficulty in saying no. What has emerged from this underdetermined friend tag is the accumulation of many social circles of friends under a single rubric (Hewitt & Forte, 2006). As sites expand to encompass more individuals from one's off-line life, with no clear distinction between them it also collapses all of the partially

overlapping social circles of modern life (Simmel, 1922) into a single list. Friends may now refer to family members, coworkers, actual friends, neighbors, acquaintances, high school friends, people from online hobby groups or gaming sites, one-night stands, distant friends of friends, students past or present, and generally any other potentially personal relationship.

boyd (2007) has referred to the existence of all of these groups in one space as the "collapsed contexts" quality of social network sites. For each of these contexts, one might have a slightly different presentation of self. Yet since they all have on-demand access to one's online artifacts, this results in a decontextualization of any of these artifacts. Artifacts are not tied to situations but to individual profiles. The individual therefore comes to represent these same artifacts to all "friends." If social network sites house more friends than are cognitively manageable, all of whom have access to one's content, and many of whom represent different social groupings and different potential fronts, then how do individuals manage to submit any content at all? Why is there not a sense of self-presentation paralysis?

The answer is that one need not consider everyone when submitting content but only two groups: those for whom we seek to present an idealized front and those who may find this front problematic. That is, in addition to the traditional audience of situations, one must add a hidden audience who are not the intended recipient of content but will have access to it as well. One might not post for one's boss on Twitter, but if one's boss is following (or is likely to follow), then one will certainly post in light of the fact that the boss may read it. One might not be posting for one's parents (or children or students) on Facebook, but again, one is posting in light of the fact that these individuals may have access; these individuals define the *lowest common denominator* of what is normatively acceptable.²

A theory of lowest common denominator culture is more appropriate to exhibition spaces replete with persistent content than single context performances. It offers a potential explanation for three aspects of social network sites. The first is why individuals effectively participate in these sites, halfheartedly join, or even refuse: An individual assesses whether his identity can be effectively represented by the lowest common denominator of the people who view his content in his absence. The second is to explain how in an age of profound surveillance (both from authorities and peers), individuals still submit content that is unambiguously questionable (nudity, violence, political extremism, racial epithets): The lowest common denominator of niche sites may be different than that of general sites. As such, one may have a clean profile on Facebook but a series of lewd pictures on Xtube.com, Suicidegirls.com, Pornotube.com, and so forth. Similarly, one may be sexually ambiguous or even deceptive on Facebook or one's twitter account, but still have a openly gay profile on Gaydar.co.uk, Gay.com, Manhunt.com,

and so on. A businessperson may seek to be clean cut and professional on one site but espouse politically extreme views on Stormfront.org or Newsxon.org. In more positive terms, a teacher may complain about troubling students on TheApple.Monster.com but make no such claims on Facebook, where the teacher might be friends with students' parents or the students themselves. The third aspect of these sites that a theory of lowest common denominator addresses is how exactly individuals interpret this particular context: it is likely that people do not create sophisticated projections of their social network, nor need they. Instead, their behavior is in reference to specific salient individuals, who are small enough in number to be coherent. The persistence of this content beyond these salient individuals is rarely accounted for. This theory is also in keeping with research by Acquisti and Gross (2006) about why individuals will reveal a great deal of information on Facebook: they trust the site to curate it for them appropriately (even though they are often misinformed about the who can access what), and that they submit information they feel is inoffensive to some perceived salient individuals.

Conclusions

Many online sites set up a situation where individuals can continually submit data to be associated with their profile. This sort of "interaction" where people view and react to the submitted content of others is dissimilar from the traditional situations that gave rise to Goffman's germane dramaturgical approach. The impetus for this article was to suggest that many aspects of Goffman's approach (e.g., impression management) can work in a framework that is more aligned to these spaces, namely through the metaphor of an exhibition rather than one of a stage play. One of the key distinctions between exhibitions and performances is that performances are subject to continual observation and self-monitoring as the means for impression management, whereas exhibitions are subject to selective contributions and the role of a third party. I refer to this third party as a curator that has the capacity to filter, order, and search content. The exhibition has its own logic, such as lowest common denominator culture and easy persistent friends that do not have direct analogs in offline life. Privacy becomes a matter of how content is aggregated (e.g., Is it tied to a real name? Is it tied to a geographical location? How findable is the user and the user's data?) and how access control is managed *a priori*, rather than *in situ*. I draw on Benjamin's classic essay to indicate that the notion of distinguishing individuals from their reproductions is not a novel idea. What is novel, however, are its application to everyday life, and its aggregation through digital means.

Acknowledging the difference between performances and exhibitions is an ontological matter, not an empirical or phenomenological one. People need not acknowledge this

mediated relationship in order to participate in it. In fact, it is likely that ignorance blissfully facilitates the willing capture, storage, and use of private data. Moreover, it is a difference that allows individuals to consume and view each other's past artifacts without directly engaging the individual, or in many instances, even letting the profile owner know that their information is being viewed.

What is empirical in this domain is the extent to which misunderstandings about the basic ontological structure of data, its curation, and exhibition give rise to new unintended problems: social information overload, collapsed contexts, accidental disclosures, and "identity" theft. What people do is based on their mental models of these sites, and as past work has demonstrated, there is often a great mismatch between the mental models and the actual behaviors (Acquisti & Gross, 2006). These sites also give rise to new potentials: heightened social capital from newly accessible weak ties (Ellison, Steinfeld, & Lampe, 2007); asynchronous and coordinated grassroots organizing (Earl, 2010); strengthening of long distance ties through photo sharing and rapid exchanges (Cook, Teasley, & Ackerman, 2009); otherwise hidden communities such as gays and lesbians suddenly being able to find each other rapidly and privately (Gray, 2009). These new phenomena are not necessarily about the performance but the new mediated architecture that encapsulates and redistributes past performances for mutual and often asynchronous benefits. The capabilities of exhibition sites allow a person to be found when others want to look rather than when the person is able to be present and perform. Thus, extending presentation of self by considering an exhibitional approach alongside a dramaturgical one is meant to be a step toward a clearer articulation of both the potentials and the perils of self-presentation in an age of digital reproduction.

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Notes

1. Interestingly, "digital curation" is now used in the United Kingdom to refer to the practice of maintaining storehouses

of digital research content (see <http://www.dcc.ac.uk/>). But in this case, it is still implied that there is an expert individual who is maintaining the data. This is a different matter, and one that parallels offline archival. This sort of curation also tends to work at the level of the data set, much like off-line curation works with a specific artwork, rather than the level of raw data.

2. I would like to thank an anonymous reviewer for noting that lowest common denominator culture is not specific to exhibition spaces but to collapsed contexts. For example, a wedding speech might not cater to every single audience member but simply be inoffensive to salient individuals (e.g., a priest and one's mother-in-law) while appealing to friends and certain relatives. That said, even in the case of a wedding speech, certain poor jokes can immediately be "recovered" in ways that artifacts may not.

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Bio

Bernie Hogan is a Research Fellow at the Oxford Internet Institute at the University of Oxford. His work focuses on relationships, social media and social networks. He received his dissertation from the University of Toronto in 2009.

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Too Much of a Good Thing? The Relationship Between Number of Friends and Interpersonal Impressions on Facebook

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Too Much of a Good Thing? The Relationship Between Number of Friends and Interpersonal Impressions on Facebook

Stephanie Tom Tong
Brandon Van Der Heide
Lindsey Langwell

Department of Communication

Joseph B. Walther

Departments of Communication and Telecommunication, Information Studies & Media
Michigan State University

A central feature of the online social networking system, Facebook, is the connection to and links among friends. The sum of the number of one's friends is a feature displayed on users' profiles as a vestige of the friend connections a user has accrued. In contrast to offline social networks, individuals in online network systems frequently accrue friends numbering several hundred. The uncertain meaning of friend status in these systems raises questions about whether and how sociometric popularity conveys attractiveness in non-traditional, non-linear ways. An experiment examined the relationship between the number of friends a Facebook profile featured and observers' ratings of attractiveness and extraversion. A curvilinear effect of sociometric popularity and social attractiveness emerged, as did a quartic relationship between friend count and perceived extraversion. These results suggest that an overabundance of friend connections raises doubts about Facebook users' popularity and desirability.

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New forms of computer-mediated-communication (CMC) are raising questions, about the relationship between communication activities and interpersonal judgments. Communication technology has evolved beyond the means by which senders had more or less complete control over the impression-related information that receivers could observe. With the advent of new social technologies, users no longer have to rely on an individual's self-composed emails, chat statements, or personal web pages to garner impressions about a subject. Users employ strategies unique to CMC including browsing archived transcripts of discussions and chats, surfing personal and institutional web sites, or using search engines to uncover a variety of

information repositories (e.g. “googling”) (Ramirez, Walther, Burgoon & Sunnafrank, 2002). Google searches also will soon lead to entries on certain social networking sites such as Facebook, another novel source of social information.

Social networking sites such as Friendster, MySpace, and Facebook have become immensely popular. The rapid adoption of these systems raise questions about the functionalities they offer that make them so popular, and about the communicate dynamics that are shaped by their use. The diffusion of social networking sites can be seen in various usership statistics: MySpace attracted over 114 million visitors globally by July of 2007 (Comscore, 2007). LinkedIn, which allows users to connect with each other for professional and social purposes, recently reached the “10 million member mark” with 130,000 new members joining every week (Allen, 2007).

The focus of this study is the social networking site Facebook, which was originally created as a site for college students, but now includes anyone with an email address who wishes to join. With an estimated 18 million members at this writing, Facebook is now the sixth most trafficked website in the United States (Abram, 2007) and the top web site in Canada, as a million new users establish accounts each week (Levy, 2007). Over 52 million people worldwide have visited the site (Comscore, 2007). Users can create profiles that describe various attributes about themselves such as their hometown, birthday, preferred activities, etc. They can expand their social networks by requesting another person’s friendship. These friends communicate within Facebook primarily by posting statements to each other’s profile “walls”. To be designated as “friend,” an individual directs the Facebook system to initiate a request to be recognized as someone’s friend, to which the two parties—the friend request initiator and the friend request sender—must agree. When individuals become friends, the system reveals their personal profiles as well as all their links to other members of their social networks. New friendship links often snowball via the enlarging and overlapping friends’ networks thus started.

Given these kinds of linkages that Facebook and similar systems provide, the sites are all the more interesting to communication researchers because they are specifically dedicated to forming and managing impressions, relational maintenance, and relationship-seeking. They are novel because, in comparison to typical conversations and in contrast to traditional CMC, the information on these sites contains information provided not only by the creator, but by the creator’s friends, not to mention by the computational programs embedded in the systems themselves.

Another important reason to examine such systems is that they reveal how people manage their social networks, both in manner and in size. Much of the value of these sites derives from their making manifestly visible users’ social network of friends, or at least acquaintances, who also have accounts on the system. While research on traditional social networks suggests that the number of people with whom an individual maintains close relationships is about 10-20 (Parks, 2007) and the total number of social relationships people manage may be around 150 (Dunbar, 1993; Gladwell, 2000), studies examining social networking sites suggest affiliations that often dramatically exceed this figure. One recent study found that

a sample of Facebook users at one university reported a mean of 246 friends (Walther, Van Der Heide, Kim, Westerman, & Tong, 2008), while another reported a similar finding of 272 friends (Vanden Boogart, 2006). The impact on observers' judgments from the purported size of one's social network, as this study will demonstrate, defies conclusions drawn from traditional research.

An additional issue raised by social network sites is what the meaning of "friends" is in these environments. Some observers speculate that the meaning of friend is more broad than conventional understandings. Despite this breadth, there may be an upper limit on the extent to which individuals can credulously support even superficial relationships, and claims exceeding that limit, as this study examines, backfire on successful impression management. This particular study attempted to bring these issues into consideration by focusing on the effect of one feature of the Facebook system: the number of friends a user is purported by the Facebook system to have. This feature allows researchers not only to examine the potency of one cue in the Facebook system, but also to explore previously unseen relationships between traditional attributes—popularity and attractiveness—that are facilitated by the technology in nontraditional ways.

Online Impression Formation and Social Networking Sites

Self, friend, and system as source

Previous studies about online impression formation have demonstrated that individuals can and do form impressions of others through various CMC venues (see for review Walther & Parks, 2002). Social information processing theory (SIP; Walther, 1992), suggests that people avail themselves of whatever information is available within a CMC environment with which to form impressions, despite the absence of the nonverbal cues that typically drive impressions in offline communication. Although SIP theory has focused on a variety of information types in the past, e. g., language style and content, chronemics (see for review Walther, 2006), and photographic or biographic information (Tanis, 2003), new cues such as network size coefficients are not beyond the realm of the theory's logic. At the same time, the theory has not considered incidental information, i.e., information that was not instigated through communicators' volitional behavior, conveyed with some level of intent. System-generated information is not within the class of variables SIP originally envisioned.

There are numerous volitional cues on social networking sites. Facebook provides means for a user to post information about the self. A photograph, almost always showing the self, occupies a dominant space on the profile. The system also provides categories for users' textual self-descriptions. Another source of information on one's profile comes from other social network members: An individual's friends can leave messages on one's profile. Finally, the computer system itself leaves information on one's profile, in specifying the number of friends with whom an individual has arranged to have this status.

How do these various information sources affect impressions? Forming impressions from self-selected statements in CMC is well-understood from a SIP theory perspective. With regard to friends' messages, recent research has shown that friends' wall postings also affect judgments of profile owners. Walther et al. (2008) utilized the Brunswikian Lens Model (Brunswik, 1956) in their research examining context effects in Facebook. The Brunswik Lens describes how observers associate non-behavioral clues that reside in an environment that belongs to a social actor to infer that actor's personality. These artifacts, or "behavioral residues," may be intentionally or unintentionally created, may originate with the target or with others, and may be displayed in physical or virtual space (e. g., Vazire & Gosling, 2004). In any case, observers attribute characteristics to targets based on the things they observe in the target's space. Walther et al. (2008) found that statements made by the profile owner's friends had a significant impact on observers' ratings of the social attractiveness and credibility of the profile owner. Wall postings alluding to sociable behavior by the target increased favorable ratings of targets, whereas postings suggesting excessive drinking and philandering prompted a reversal. Moreover, the physical attractiveness of a profile owner's friends (as seen on the profile's wall) directly affected observers' ratings of the profile owner's physical attractiveness. As such, behavioral residue generated by the profile owner's *friends* (rather than explicit identity claims left by the profile owner) was used by observers in impression formation processes.

While previous research has examined self-generated information and recent research examined information provided by friends, research has just begun to examine machine-rendered information, in the form of the coefficient reflecting the size of one's social network. We suspect that the sociometric information found in Facebook conveys impressions as well. The fact that one of the fundamental functions of social networking sites such as Facebook is to render visible and navigable the nature of one's social network suggests that this information may serve not only to establish how well-liked an individual is, but also to provide clues about the profile owner's social status, physical attractiveness, or credibility. That is, a network size coefficient should constitute behavioral residue. It should reflect to observers how an individual relates to others in terms of how many people he or she contacts, as an indicator of popularity. One's network size coefficient also reflects how individuals use the Facebook system, that is, the extent to which they use it normatively or relatively excessively, and consistent with the Brunswik Lens approach (Brunswik, 1956), these perceptions may lead to judgments about other characteristics the profile owner is likely to possess. In order to understand what meanings these coefficients might arouse in observers, we reviewed research on the antecedents and consequences of sociometric popularity, which suggested positive linear effects of friend count with social evaluations. Then we examined recent conjectures about technological transformations of network size and friend specification, which suggested alternative relationships between friend counts and social evaluations.

Effects of Popularity, Offline and Online

Traditional popularity research

One approach to understanding the effect that visible friend count may have on evaluations comes from the assumption that the number of friends one has is an index of popularity. Traditional research investigating offline popularity divides the notion into two constructs: *peer-perceived* (or *perceptual*) *popularity* and *sociometric popularity*. Perceptual popularity pertains to the judgments about individuals who are members of a group or class believed to be valued by its members. For instance, children and adolescents described as *perceptually* popular were more socially dominant within social interactions; however these individuals were not necessarily well-liked by the raters (Parkhurst & Hoppmeyer, 1998). Several studies have shown that those individuals rated as *perceptually* popular are also more likely to be rated as self-confident, stuck-up, more likely to start fights, and less likely to be subject to social teasing or ridicule (Parkhurst & Hoppmeyer, 1998). Of greater interest to the present research is the construct of *sociometric* popularity—that which corresponds to the number of friends or connections one has, which may be reflected in the coefficient of friends displayed on the profiles of Facebook users.

Sociometric popularity is also associated with a number of social evaluations. Sociometrically popular individuals receive more positive ratings on measures of liking and potential friendship from peers. Furthermore, sociometrically popular individuals are judged as more trustworthy and kind than *perceptually* popular counterparts (Parkhurst & Hoppmeyer, 1998). A meta-analysis conducted by Langlois et al. (2000) revealed that sociometric popularity is associated with physical attractiveness: the more physically attractive one is the more sociometrically popular. This association takes place among both children and adults. For instance, Krantz (1987) studied the influence of physical attractiveness on kindergarten students' preferences of potential friends. When given two photos of same-sex children (one previously rated as attractive, the other unattractive), kindergarten students chose the attractive child to be their potential friend more often than the unattractive child. Previous research suggests that people simply prefer to associate with those whom they find physically attractive. Thus if people prefer to socialize with attractive individuals, then those who are more popular should also be seen as more physically attractive.

Other judgments are also associated with attractiveness, which may also have some relationship with sociometric popularity. Attractive individuals are rated as more intellectually competent than unattractive ones, among both adults in the workplace (Jackson, Hunter & Hodge, 1995) and children in schools (Clifford & Walster, 1973; Jackson, Hunter & Hodge, 1995). Langlois et al.'s (2000) meta-analyses revealed that although differences in evaluation were stronger for children than adults, when compared "with other effect sizes in the social sciences," the effect sizes obtained by Langlois et al. (2000) were still "uncommonly large" for both groups (p. 400). Attractive individuals are judged more favorably than unattractive

individuals on a variety of different dimensions such as academic/developmental competence, interpersonal competence, social appeal, extraversion, self-confidence, and occupational competence. The well-documented “attractiveness halo effect” further suggests that attractiveness and social acceptance are linked (Berry & Miller, 2001; Eagly, Ashmore, Makhijani, & Longo, 1991). The above research suggests that observers make inferences about the popularity of the target individual which in turn affects their evaluations of the target’s physical and personality characteristics in a variety of ways.

Given that there appears to be a reciprocal relationship between popularity and attraction (and other evaluations), it seems plausible an individual who appears to be popular on Facebook (i.e. has lots of friends) is likely to be seen as more physically attractive, and also as having more socially desirable personality characteristics and mannerisms. The popularity/attractiveness research suggests nothing but a linear association for this relationship.

Facebook popularity, to a point

Research by Kleck, Reese, Behnken, and Sundar (2007) supported the notion that the number of friends indicated on one’s Facebook profile triggers positive social judgments in this way. Kleck et al. presented participants with mock-ups of Facebook profiles that varied in the number of friends profile owners appeared to have: 15, 82, or 261 friends. (Additionally, Kleck et al. varied the nature of the pictorial graphic on the profile so that the profile contained text information about the profile owner only, text information and a static photograph, and text information with the addition of a video of the profile owner, although the pictorial variations had no effects on any of the outcome judgments.) The number of friends did affect judgments. Analyses revealed that observers distinguished between low (15 and 82 friends) versus high (261 friends) friend conditions on several ratings: Popularity, pleasantness, heterosexual appeal, and confidence of the profile owner were greater when there was a high number of friends on an individual’s profile than when the lower coefficients were displayed.

Kleck et al.’s exploratory study answered some questions while raising others. It helped establish that the friends coefficients on Facebook—one subtle cue among many—did trigger social evaluations in a pattern consistent with past popularity research. The issue might be settled except when one considers the ranges in the number of friends that have been observed in other Facebook studies. For example, one recent survey found that students reported a mean number of 272 Facebook friends (Vanden Boogart, 2006). Another study found that the mean number of Facebook friends reported by a sample of college students was 246, with a standard deviation of 184 (Walther et al., 2008). These findings raise the elementary question whether the positive relationship determined by Kleck et al. (2007) persists across the larger ranges of friend counts that have been empirically observed in other populations. Beyond elementary skepticism, however, there are reasons to predict that the presence of even greater numbers of friends on a Facebook profile

leads to different social judgments than the popularity dynamics, alone, would suggest.

Other literature has speculated that the meaning of friends changes in social networking sites, particularly as the numbers grow higher. In Brunswikian terms, higher sociometric counts may be interpreted as behavioral residue of something other than genuine popularity. Theoretically, the effect aroused by the Facebook friends coefficient, documented by Kleck et al., may not extend beyond certain boundaries that yet higher numbers of online friends imply.

Shifting Meanings of Friendship in Social Networking Systems

Meanings and network sizes

On Facebook, the meaning of *friend* does not always have traditional connotations, and therefore the sociometric coefficient of the number of friends one has provides clues of a different nature about one's character. That is, in Brunswikian terms, the size of one's network is the behavioral residue of the way one accrues one's associations online. Other emerging research suggests there is a point of diminishing returns in terms of the normative use of Facebook with respect to accruing associations.

What does it mean to be a "friend" on Facebook? It can mean several things. First, it often reflects that individuals have some form of acquaintance that is based in offline interactions. Social networking systems can facilitate mixed-mode relationships. Walther and Parks (2002) defined mixed mode relationships as those which move from an electronic context to a face-to-face setting or vice-versa. In the case of social networking systems we may see many relationships that hover between the virtual and physical quite frequently. Donath and boyd (2004) argue that online social networking systems can help individuals to maintain a larger number of *close* ties than people can typically maintain without such technology, as the systems allow people to check one another's sites for updates, reflect new activities, as well as to facilitate brief verbal exchanges through asynchronous wall postings.

At the same time, that which is labeled "friend" on Facebook often does not correspond to the same label offline, and this difference inflates the potential size of friend networks. "Friending" large numbers of people has been shown to be one of the (if not *the*) main activities of Facebook, according to Ellison, Steinfield and Lampe (2006). Although Ellison et al. found that a large network of weak social ties via Facebook becomes a source of social capital, another survey reported that approximately 46% of survey respondents had either neutral feelings or felt disconnected from their friends on Facebook (Vanden Boogart, 2006). Ethnographic accounts indicate that among Facebook users it is not uncommon to solicit and establish friend status among the most barely acquainted partners (boyd, 2006), and it is socially inappropriate to refuse a friend request from someone who is familiar (boyd, 2007). Thus a wide array of relationship types are all represented as friends on Facebook, and each contributes to the total number of friends reflected in the sociometric coefficient, even though the friend designation is "unnuanced" in that

it does not signal relationship type to the observer (Donath & boyd, 2004). Thus, the size of one's apparent friend network on a system such as Facebook can easily become much larger than traditional offline networks, because friendship is in some cases most superficial, because the technology facilitates greater connection at some level, and because social norms inhibit refusals to friend requests.

Despite the flexibility of the friend association in social networking systems, it appears that judgments about users are based on the friend coefficients, in ways that Kleck et al. (2007) documented, but in other ways as well.

Incredulity and evaluation

In social networking systems, social norms apply in assessing whether friending reaches a point of incredulity or foolishness. Offline, there seems to be no upper limit to the number of friends one can have; the bigger one's social network, the higher the ratings of positive attributes (i. e., "Jane has lots of friends, she must be so likable, kind, trustworthy, etc."). Gross excesses that Facebook can facilitate appear to violate this relationship. After a point, too many connections may result in *negative* judgments. Gratuitous friending is noted: O'Murchu, Breslin, and Decker (2004, p. 6) note that "over exposure on these sites can also at times equate to a popularity contest based on status of how many friends or friends of friends one has." Donath and boyd (2004) noted a similar phenomena with regard to a corresponding social networking website, Friendster.com, where individuals who gratuitously aggregated superficial friends became known as "Friendster whores":

a pejorative term that was sometimes used self-mockingly, but also reflects the negative reaction of people who realised [sic] that an invitation to join someone's network of friends arrived not because they were perceived as an interesting or desirable person, but simply as an addition to a collection of links, one among hundreds (p. 80).

Terms like "Friendster whore" suggest that in this new domain of online social networks, there comes a point when too many apparent friendship connections becomes too much of a good thing. When the number of friends becomes implausible, apparent sociometric popularity becomes a hindrance, rather than an advantage, to the good impression of the profile owner, according to Donath and boyd (2004). In terms of Brunswikian "behavioral residue," an abnormally high friend count may fuel the inference that the profile owner spends more time superficially friending others beyond a plausible extent, i.e., the behaviors they appear to have made are gratuitous and disingenuous. This "sociometric overload" seems to be a phenomenon unique to CMC that does not generalize to offline encounters. Although certain individuals can be said to "know everybody" in offline acquaintances, such a phrase is clearly hyperbole. Further, the literature on offline popularity suggests no asymptotic trend in the association of friend count and positive evaluations.

Although the line separating an acceptable from an absurd number of friends online is not yet known, accounts suggest that the number of friends individuals

appear to have on Facebook may arouse a non-linear relationship with the kinds of social evaluations previously associated with popularity. Therefore, we posit the following hypothesis:

H1: There is a curvilinear inverted U-shaped relationship between the number of friends a profile owner has and observers' perceptions of the profiler's (a) social attractiveness (b) physical attractiveness.

Because extraversion is conceptualized as how verbose or outgoing one is, we do not necessarily expect the curvilinear relationship with this trait. In fact, it is likely that a profile owner would appear to maintain high levels of extraversion online in order to accumulate so many sociometric ties.

H2: There is a linear relationship between the number of friends a profile owner has and observers' perceptions of extraversion.

Method

A sample of 153 undergraduate students at a large university in the Midwestern United States voluntarily participated in the research in exchange for course credit. Participants were provided a URL with which to access a website that displayed all research materials. They were instructed to complete this research individually using a WWW browser at a location of their choice. This allowed them to view the stimuli in a natural environment.

The website initially presented informed consent information. The informed consent material explained that this was a study on impression formation in electronic communication and that they would be asked to make some judgments about another individual on the basis of looking at a sample of some online communication such as a Facebook profile, a transcript of an Instant Messenger chat, or an email exchange among prospective targets. In actuality, each participant was redirected to a Facebook mock-up. After participants read the informed consent information they selected a link which led to a javascript routine programmed to randomly redirect each participant's web browser to one of five versions of the stimulus (see Burton & Walther, 2001). Participants were instructed to view the stimulus material as long as was required in order to form an impression of the owner of the profile. Participants then clicked another link to open and then address questionnaire items.

Standard demographic information (gender, age, college year) and information pertaining to Facebook (Facebook usage, Internet usage, number of friends, etc.) was collected and analyzed. After removing respondents who indicated they did not have a Facebook profile and those who reported extreme outlier scores on number of friends, 132 subjects remained in the sample. Analyses revealed sample sex (53% female), age ($M = 20.18$, $SD = 1.32$, mode = 21), and year in school (20% freshmen, 28% sophomores, 31% juniors, 19% seniors, 2% missing). With regard to Facebook friends, analysis showed $M = 395.02$, $SD = 316.03$, median = 300, mode = 300. The

mean was skewed by some respondents with very high friend counts; 6 individuals reported 1000, 1 reported 1200, and 1 reported 2700 friends.¹ Participants reported the number of hours a day they spent on Facebook, $M = 4.51$, $SD = 4.31$.

Stimuli

Participants examined one of five stimuli, each containing a Facebook profile mock-up. Elements of these stimuli (e.g. photographs, wall posts, etc.) remained constant over the five versions, with the exception of the *number of friends* which appeared on the profile as 102, 302, 502, 702, or 902. These intervals were chosen in order to reflect equal intervals amenable to trend analysis. The specific quantities represented were suspected to range from lesser- through greater-than-normal sizes of Facebook friend networks based on previous research (Ellison, Steinfield, & Lampe, 2007; Vanden Boogart, 2006; Walther et al., 2008) and informal discussions with Facebook users.

Other elements of the Facebook mock-ups were selected based on the results of pre-testing with college-age focus groups. The photograph used to represent the profile owner was rated in pre-tests as neutral in physical attractiveness, and two offsetting positive and negative statements appeared on the profile “wall” (see Walther et al., 2008). The random selection of both male and female photographs used to represent “Friends in other networks” was held constant across conditions, and the two photos representing the friends featured on the wall (i.e., those who made the wall posts) were counterbalanced with one being attractive and the other being unattractive. The counterbalancing approach was selected in an effort to advance ecological validity while still maintaining an overall neutral information background. All profiles depicted females only although the effects of gender may be examined in future research.

Because most Facebook users rarely have all their friends confined to one network, the total number of friends was split among three different networks. The primary network displayed on stimuli was the university where respondents were enrolled. To select the other two networks, researchers gave a list of several other universities and colleges in the same US state to an offset group of college-aged raters from the university comprising the primary network. This procedure elicited prestige ratings of the alternative colleges, so that researchers could select two neutral exemplars for the secondary networks depicted in the mock-up profiles. The majority of the profile owner’s friends were depicted as members in the primary network with fewer friends in the other networks.

Dependent Measures

Data were collected on the physical and social attractiveness of the profile owner using measures created by McCroskey and McCain (1974). Analysis showed a Cronbach’s *alpha* reliability estimate of .77 for social attractiveness, and $\alpha = .80$ for physical attractiveness. Post-test items also included measures of extraversion ($\alpha = .84$) (McCroskey, Hamilton, & Weiner, 1974).

Results

Hypotheses Tests

Hypothesis 1 predicted a curvilinear (inverted U-shaped) relationship between the number of friends a profile owner has and observers' perceptions of the profile owner's (a) social and (b) physical attractiveness. In order to test these relationships, one-way analyses of variance (ANOVA) were conducted with number of friends as the independent variable and social attractiveness and physical attractiveness as the dependent variables. Hypothesis 1a was supported. Results showed a significant quadratic effect for the relationship of number of friends on social attractiveness, $F(1, 129) = 2.78, p = .098, \eta^2 = .02$.² Descriptive statistics appear in Table 1. In order to confirm the direction of the curve, the means were subjected to a post-hoc least significant differences (LSD) test. The LSD test revealed that the apex of the curvilinear relationship was at the 302 friend condition. That is, targets were viewed as most socially attractive when they had 302 friends.

The relationship between number of friends and physical attractiveness did not follow the predicted curvilinear relationship. The overall F and the specific test for quadratic effects were not significant, $F(1, 129) = 2.47, p = .119$. Hypothesis 1b was not supported. Post-hoc LSD analyses failed to show any pairwise differences among the five means (see Table 1).

Hypothesis 2 predicted a linear relationship between the number of friends a profile owner has and observers' perceptions of the profile owner's extraversion. An omnibus one-way ANOVA with extraversion as the dependent variable was significant, $F(4, 129) = 3.12, p = .02$. However, the linear effect specified by H2 was not supported, $F(1, 129) = 2.32, p = .13$. Rather, a significant quartic effect emerged, $F(1, 129) = 5.66, p = .02$. Post hoc analysis using LSD comparisons demonstrated significant pairwise differences among some of the cells suggesting (a) a curvilinear inverted-U effect overall, with the highest level of extraversion occurring at the 502 friends level. Although perceived extraversion trailed off beyond the apex, the higher numbers of friends (702 and 902) stimulated no less extraversion than the apex. However, the lowest numbers of friends (102 or 302) prompted

Table 1 Means and Standard Deviations of Social Attractiveness, Physical Attractiveness, and Extraversion by Apparent Number of Facebook Friends

Experimental Condition	Social Attractiveness	Physical Attractiveness	Extraversion	<i>n</i>
102 Friends	4.05 (1.01) ^{a,c}	3.50 (0.66) ^a	3.56 (1.08) ^{a,b}	24
302 Friends	4.77 (0.87) ^b	3.88 (0.99) ^a	3.48 (0.89) ^{a,b}	33
502 Friends	4.38 (1.17) ^{a,b,c}	3.81 (1.24) ^a	4.40 (1.36) ^c	26
702 Friends	4.22 (1.32) ^{a,c}	3.73 (1.15) ^a	3.95 (1.06) ^{a,b,c}	30
902 Friends	4.12 (1.14) ^{a,c}	3.50 (1.03) ^a	3.86 (0.99) ^{a,b,c}	21

Note: Means with different superscripts differ within columns at the $p < .05$ level.

significantly lower extraversion judgments compared to the apex of 502 (see Table 1 for complete results). It appears that having a lot more friends indeed connotes greater extraversion for Facebook profile owners, somewhat as predicted, but that the association is not a direct linear pattern. The most extroverted attributions are relegated to individuals with a greater-than-average number of friends.

Discussion

The goal of this research was to determine the nature of the relationship between sociometric indicators of connectedness depicted on Facebook and the social attractiveness, physical attractiveness, and extraversion of the profile owner perceived by others. This study posed questions about the nature of these relationships and subsequently found effects of the information generated by the social networking system on others' perception of an individual in a social networking environment.

There is a curvilinear relationship between the number of friends that profile owners are purported to have and others' perceptions of their social attractiveness. More specifically, in the condition where the profile owner had the fewest friends (102), ratings of the individual's social attractiveness were among the lowest. Ratings of the individual's social attractiveness were highest when the profile displayed that the profile owner had approximately 300 friends. Beyond that level of friends, ratings of a profile owner's social attractiveness declined to a level approaching the 102 friends condition. Although there were no significant differences between social attractiveness in the very lowest and very greatest number of friends' conditions, the absolute values of the associated means are trending in the direction that suggests it is better to have too many friends than to have too few.

Whereas H2 predicted a linear relationship, results yielded a complex, quartic relationship between the number of friends on an owners' profile and perceptions of the profile owner's extraversion. Although more friends connoted greater extraversion than did less friends, analyses revealed that there were significant deviations from linearity in this relationship, with the greatest degree of extraversion associated with moderately large numbers of friends, but declining at the greatest numbers. It seems that having an exceedingly large number of friends leads to judgments that profile owners are not sociable and outgoing, but are relatively more introverted. Observers apparently infer that an individual with an excessive number of friends may not have accumulated them as a result of extraversion, but rather by some other characteristic.

This possibility is consistent with the Brunswik's (1956) Lens approach, which suggests that observers interpret artifacts as clues to the behaviors one likely committed, from which personality assessments are inferred. Individuals with too many friends may appear to be focusing too much on Facebook, friending out of desperation rather than popularity, spending a great deal of time on their computers ostensibly trying to make connections in a computer-mediated environment where they feel more comfortable than in face-to-face social interaction (see Caplan, 2003).

Although these precise interpretations are not revealed in the present study, they are consistent with Donath and Boyd's (2004) ethnographically-based speculations why "friending" too many others may lead to negative judgments about the profile owner.

Although this interpretation is plausible, caution is warranted in placing too much of a premium on participants' or observers' own accounts of the mechanisms by which they make judgments. Individuals may not be aware of the degree to which friends counts actually affect them. A modest follow-up study explored this issue.

In the primary study, the only active independent variable among all the Facebook mockups was the representation of the number of friends, and since these coefficients were demonstrably different (whether or not they were noticed by research participants), no manipulation check was warranted and none was conducted (see O'Keefe, 2003). The question of observers' cognizance is intriguing nevertheless, and therefore a post hoc experiment was conducted to explore this question. Students from the same university as the primary experiment (from one intact course), $N = 24$, were each randomly presented one of the same stimuli described in the main study as discussed above, on full-sheet, color-printed paper handouts. These observers were asked to list impressions about the targets, and then to list the bases of their judgments. Only 5 of the 24 respondents specifically mentioned the number of friends that the profile listed. When these identifications occurred, they appeared across the array of friend count manipulations except for the most normative (302) level: 102, 502 (twice), 702, and 902.

It appears that while friend counts had a reliable effect in the initial impression task, the basis of the effect was not something of which most observers are consciously aware. Such a phenomenon is most consistent with the anchoring effects described by Tversky and Kahneman's (1974) classic research on human reactions to exposure to numbers: Brief exposure to high or low numbers unconsciously triggers decision heuristics in a variety of settings, leading to biased estimations of populations, differential bidding, and other irrational numerically-related effects. Understanding the precise mechanisms or attributions resulting from such anchoring, however, will require additional research.

One plausible mechanism that can be explored behaviorally from the present study is a possible similarity effect: The optimal number of friends is related to the rater's number of friends. The participants in the present study reported a modal number of friends of 300. Given that the optimal number of Facebook friends in the stimuli was the number closest to the average number of friends claimed by the respondents, it is plausible that judgments of social attractiveness are due to similarity of the rater to the target. If this is the case, then if observers who have 100 Facebook friends may judge an individual with 300 friends to be less like them and therefore less socially attractive than an individual with 100 friends. Likewise, the rater with 1000 friends may find the profile owner with 900 friends more similar and thus more socially attractive than the profile owner with 300 friends.

The similarity effect was examined post hoc through a multiple regression analysis in which social attractiveness scores were regressed on a term representing the interaction of the number of friends in the stimuli by respondents' number of friends (adjusting the respondents' friends count with a log-normal transformation due to the non-normal distribution of that count; Osborne, 2002). The analysis was not significant, $\text{adj. } R^2 = .01$, $F(1, 130) = 2.33$, $p = .13$. It appears that the social attractiveness assessments attributable to the number of friends on a Facebook profile are not a significant function of the observer's own friend count. It seems reasonable that some normative standards apply, deviations from which trigger derision in some manner, and judgments of greatest social attractiveness go to those individuals who are closest to average. Such a process may be thoughtful or heuristically-derived.

Contrary to predictions, there was no relationship between the number of friends a profile owner had and the physical attractiveness attributed to the profile owner by others. It is, perhaps, not altogether surprising that the number of friends did not affect physical attractiveness perceptions. First, a photograph of the same profile owner was present on each of the experimental stimuli. Little variation on an impression that was strongly and directly cued by a photo would be somewhat expected. Although past research has found that a profile owner's physical attractiveness is affected by differences in the attractiveness of those who comment on a Facebook profile's "wall," as well as what those comments contain (Walther et al., 2008), these factors were held constant in the present study. Therefore, it seems likely that the presence of these other cues anchored physical attractiveness judgments beyond a level which would be influenced by the number of friends purported by one's profile. It is possible that in the absence of photographic cues and messages, the number of friends a person has may serve as a more potent cue in the determination of physical attractiveness, in addition to other judgments.

The effect sizes in this study were relatively small. This raises concerns about whether manipulations were inadequate, whether the experiment captured ecologically valid assessments, or whether the true effect of the number of friends on social judgments in Facebook is in fact small. It should be noted however, that significant results were obtained despite an infinitesimally small experimental manipulation. Facebook profile content was held constant with the exception of the alteration of one value of one information item per Facebook profile (by means of alteration to the friends' networks so that the sum of friends totaled the number presented on the profile). Given this small induction and the subsequent results, it seems reasonable to conclude that sociometric information such as the number of friends one has is a relatively potent cue to various social judgments in a social network environment.

The present findings extend and modify conclusions to be drawn from Kleck et al.'s (2007) research. Kleck et al. argued that greater numbers of apparent Facebook friends impel positive impressions of a profile owner. This study confirms that assertion but only to a certain point. In light of the present study, Kleck et al.'s manipulation was restricted in range—only low and median amounts of friends were tested—which led to the linear relationship their results suggested. Their finding was

replicated within the present design, for the difference between 102 versus 302 friends. However, the present findings indicate that people with an excessive number of apparent friends do not continue to increase positive evaluations.

This study raises questions for theories of online impression formation and management about the nature of the role of sociometric information in online and offline impressions. Walther and Parks (2002) posited that the warranting value of information (the degree to which information about oneself is more or less self-presented rather than presented by others) raises its value in making judgments about what a person encountered online is really like offline. First-person messages about one's self on the Internet are of less value to a rater than are third person messages about a target, according to the warranting principle. It seems reasonable to ask, from this perspective, what the role of sociometric information might be in the impression formation process. Sociometric coefficients are not clearly either first-person or third-person reports about an individual. Rather, sociometric data, in the case representing the number of accepted social networking friendship requests, are a behavioral residue of both a profile owner's behavior and the behavior of a certain set of friends. This characteristic might render the number of friends moderate in warranting value. Alternatively, given that friend requests must be sanctioned by others, they may have strong warranting value. Furthermore, since sociometric information is generated by the mechanics of the social networking computer system itself rather than by any one specific person, we should expect this information to be seen as truthful by perceivers. That said, given the common knowledge that Facebook "friends" are often simply acquaintances, and that refusals of friend requests are uncommon (boyd, 2007), the truthfulness of one's apparent tendency to gather friends meaninglessly online (or one's apparent inability to gather "sufficient" friends) is likely to carry credence in the virtual environment. Future research should evaluate the weight of this information in the context of people who meet offline or in Internet discussion venues "Facebooking" one another as a means of reducing the uncertainty of the initial acquaintance.

In conclusion, this study advances the important finding that sociometric data such as the number of friends one has on Facebook can prove to be a significant cue by which individuals make social judgments about others in an online social network. This study contributes findings that in the case of social attractiveness and extraversion, individuals who have too few friends or too many friends are perceived more negatively than those who have an optimally large number of friends. Regarding sociometric information, future research should certainly examine if more detailed sociometric data (i.e. friend status, connectedness, etc.) has any effect on the evaluations of the profile owner in different types of populations and settings. More broadly, future research should investigate how individuals utilize other types of machine-rendered (website-generated) data when making social judgments of others. It would be of interest as well as scholarly and practical value to scholars to apply these questions to aspects of other social networking sites. While MySpace, Orkut, and LinkedIn are all rooted in the same social networking phenomenon, there

are some features and attributes of each that are unique. For instance, in MySpace, an individual can be friends with a professional musical group or other collectives, and in such cases, are not likely to have had any face-to-face contact with the friend entity. Does sociometry mean anything similar in such an environment, where the label of friend persists but its meaning is even more obscure? Do affiliations signal something other than popularity or desperation altogether, or do some meanings cross contexts? What are the range of judgments that result from various affiliation signals, as new communication technologies change the definitions of relationship terms and modify the demonstration of social networks, if not the nature of our social networks themselves? As researchers move forward in understanding the ways individuals interact with one another in online social networking environments, these are some of the questions that will further inform our understanding of these new communication technologies.

Notes

- 1 Reanalysis restricted only to those participants with less than 1000 friends yielded $M = 340.66$, $SD = 192.55$, a figure still well above those reported in other studies referenced above. It may be that, compared to earlier studies, Facebook has gained more users and users have discovered greater connections.
- 2 A statistical significance rule of $p < .10$ for directional hypothesis tests was employed, given the a priori prediction of the inverted-U curvilinear function (see Levine & Banas, 2002).

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About the Authors

Stephanie Tom Tong (B.A., University of California, Davis) is a graduate student in the Department of Communication at Michigan State University. Her research interests include how communication technology impacts the formation, development, and termination of interpersonal relationships.

Address: 459 Comm Arts & Sci Bldg, Michigan State University, East Lansing, MI, 48824, USA

Brandon Van Der Heide (M. A., Michigan State University) is a doctoral student in the Department of Communication at Michigan State University. His primary interest is in the area of communication technology. Specifically, he is interested in social influence, small group processes, and impression formation in a variety of online environments.

Address: 553 Comm Arts & Sci Bldg., Michigan State University, East Lansing, MI, 48824, USA

Lindsey Langwell completed her BA in communication at Michigan State University in 2007 and is currently an assistant digital media planner for Universal McCann in New York where she continues to explore interests in social networking systems and emerging media.

Address: 622 3rd Ave., New York, NY 10017 USA

Joseph B. Walther (Ph.D., University of Arizona) is a professor in the Department of Telecommunication, Information Studies & Media, and the Department of Communication, at Michigan State University. His research focuses on the interpersonal dynamics of communication via computers, in personal relationships, work groups, and educational settings.

Address: 565 Comm Arts & Sci Bldg., Michigan State University, East Lansing, MI, 48824, USA

ORIGINAL ARTICLE

Perceptions of Social Media for Politics: Testing the Slacktivism Hypothesis

Nojin Kwak, Daniel S. Lane, Brian E. Weeks, Dam Hee Kim, Slgi S. Lee,
& Sarah Bachleda

Department of Communication Studies, University of Michigan, Ann Arbor, MI 48109, USA

Americans' views of political activity on social media range from exuberant to exasperated. But do perceptions of social media actually influence citizens' online and offline political behaviors as suggested by the so-called "Slacktivism hypothesis?" In the present study, we undertake a more careful examination of this question by testing a theoretical model in which perceiving participation on social media as an easy or impactful means of engaging in politics encourages political expression on social media, which in turn increases offline political participation. Using panel survey data collected during the 2016 U.S. presidential election, we show that positive perceptions of social media indirectly increase offline political participation, through the influence of political expression on social media. However, we find no such positive indirect effects for those with politically diverse networks or for younger people. Implications for reconceptualizing the relationship between perceptions of social media and political participation are discussed.

Keywords: Perceptions, Political Participation, Social Media, Age, Network Heterogeneity, Slacktivism, Political Expression, Spillover.

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Introduction

With generational shifts in civic norms and a proliferation of new opportunities to participate in the democratic process, scholars have often expressed optimism about the role social media can play in political life (e.g., Lee, Choi, Kim, & Kim, 2014; Xenos, Vromen, & Loader, 2014). Research has largely demonstrated a positive relationship between social media use and offline political participation (Boulianne, 2015) and identified ways in which social media facilitate a new style of personalized, expressive citizenship (Bennett, Wells, & Freelon, 2011). However, communication scholars have long expressed concern over how media use can lead citizens down a path to discord, disengagement and apathy (Lazarsfeld & Merton, 1948). From this perspective, the adoption of new communication technology can pose a threat to existing modes of political participation.

Corresponding author: Nojin Kwak; e-mail: kwak@umich.edu

The American public seems to hold quite diverse views on social media as a new space for politics. A 2016 Pew Research survey found that many respondents view political talk on social media as frustrating, divisive and something to be avoided (Duggan & Smith, 2016). At the same time, other respondents in the same survey held positive perceptions of political discourse on social media and relied on social networking sites (SNS) as platforms for expressing their political views. The varying perceptions of social media as contexts for political engagement reflect research showing both benefits and dangers inherent in the rapid migration of political information, discourse and participation online (Gil de Zúñiga, Jung, & Valenzuela, 2012; Sunstein, 2009). However, it remains unclear whether people's prior perceptions of social media as spaces for politics affect their actual political engagement on social media and subsequently shape their offline political participation.

Researchers have long considered how perceptions influence the adoption of new communication technology (Rogers, 1962) and how using such technology may lead to disengagement in politics (Lazarsfeld & Merton, 1948). Yet little work has examined how these two theoretical processes work in concert with one another, raising a key theoretical question: can positive perceptions of the expressive potential of a political communication technology in one domain influence political behavior in another? This is a particularly important possibility, given the persistence of the so-called "Slacktivism hypothesis," which posits that engaging in low-threshold acts of political participation online will decrease willingness to engage in more effortful action offline (Morozov, 2012).

This article attempts a more careful examination of the relationship between perceptions of social media as contexts for politics and both online and offline political behavior. We propose and test a theoretical model which hypothesizes that perceiving social media as impactful or easy ways to engage in politics will be associated with greater political expression on social media, which in turn will *promote* traditional forms of offline political participation (Figure 1). We further examine whether or not this pathway depends on contextual factors (e.g., the diversity of political views in one's social network) or individual factors (e.g., age). These moderators are important to explore because, despite holding positive perceptions of social media, users may be unwilling to express themselves on social networks populated by those with differing political views out of fear that talking politics in such settings feels unproductive or difficult (Eliasoph, 1998). Similarly, younger people may avoid political expression, given their generation's lower levels of political interest (Moy, Manosevitch, Stamm, & Dunsmore, 2005) and general uncertainty about the process and consequences of political talk on social media (Thorson, 2013).

Our study adds to previous research in at least three ways. First, we use diffusion of innovations theory (DIT) to explain how individuals might adopt social media for political expression if they perceive that: (a) doing so is impactful, or (b) that social media are easy to use. This provides a framework for understanding how users' perceptions of social media influence expressive behaviors on SNS. Second, we show that using media for expressive purposes rather than consumptive purposes results in different behavioral

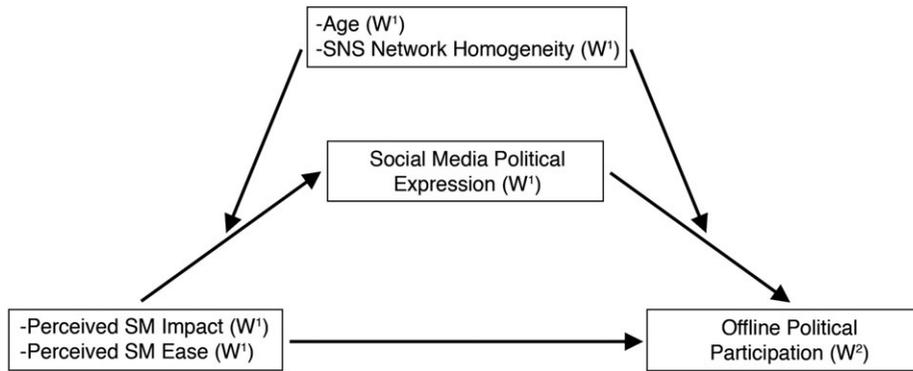


Figure 1 Theoretical model.

effects. This distinction problematizes the contemporary notion of Slacktivism as well as older theories, which predict that media consumption will lead to disengagement (e.g., Lazarsfeld & Merton, 1948). In doing so, we help explain the largely positive relationship between social media use and offline political participation found in the literature (Boulianne, 2015). Third, we highlight the important role that contextual and individual factors play in the translation of online political expression to offline political action. By testing network homogeneity and age as moderators, we are better able to predict how and for whom our model matters in the real world.

The Slacktivism hypothesis

Why might our perceptions of social media for politics shape our willingness to engage in political action? The public discourse around this question has often centered on the narrative of Slacktivism (e.g., Morozov, 2012). “Slacktivism” choose to click on links or share content, naïvely believing that their political expression has a substantive impact on real world political outcomes (e.g., Yarnall & Marks, 2014). Proponents of the Slacktivist narrative argue that those who perceive social media as easy means of having an impact on politics are likely to dismiss offline political participation entirely (e.g., Robertson, 2014).

As we have noted, the concern over the negative influence of media consumption on political engagement dates back to early media effects research. Lazarsfeld and Merton (1948) warned of the “narcotizing dysfunction” of the mass media, in which increased media consumption leads to a withdrawal from civic and political life. Despite the emergence of Slacktivism as the newest iteration of this long-standing fear, there is ample evidence that low-threshold political participation on social media can “spill-over” into higher-threshold offline engagement (Boulianne, 2015; Lane & Dal Cin, 2017; Vaccari et al., 2015). Ultimately, perceiving social media use as an impactful or easy way to engage in politics may influence offline political behavior, but not in the way that the Slacktivism hypothesis suggests.

In this study, we give more systematic consideration to the Slacktivism hypothesis by empirically testing whether or not positive perceptions of political engagement on social media indeed affect individuals' willingness to engage in politics offline. Rather than assuming that favorable perceptions of social media somehow directly discourage traditional political participation, we argue that beliefs about social media are far more relevant to how social media are adopted as *technology* (Rogers, 1962). Accordingly, we unpack the Slacktivism hypothesis by first examining the extent to which individual perceptions encourage expression in the increasingly politically-important context of social media (Bennett et al., 2011; Boulianne, 2015). In the following section, we review literature that examines how political expression on social media is influenced by the perception that political activity on SNS is: (a) impactful, and (b) easy.

Perceptions of political participation on social media

While the perceptions of ease and impact are often interwoven in accounts of Slacktivism (e.g., Robertson, 2014), research suggests that these two perceptions may exert independent influence over people's use of social media for political expression. DIT has been widely used to explain the process through which new technologies are adopted (Ma, Lee, & Goh, 2014; Rogers, 1962), and is particularly useful for its parsimony in theorizing the effects of different types of perceptions. The DIT literature suggests that both perceptions of impact and ease may increase the likelihood of technological adoption, but through very different psychological routes. One goal of this study is to disentangle these two types of perceptions and test their effects independently. Accordingly, we use DIT framework to explain how perceptions of ease and impact might be uniquely important for the adoption of social media as technologies for political expression.

Perceptions of impact

Rogers (1962) argues that technologies are more quickly adopted when their impact is *observable*. If the results of an innovation are visible, people are more likely to discuss its merits and become convinced of its usefulness (Rogers, 1962). Empirical evidence across several domains supports Rogers' contention that observable technologies are more rapidly adopted (e.g., Denis, Hébert, Langley, Lozeau, & Trottier, 2002; Makse & Volden, 2011). Expression on social media is, by design, highly visible. Not only can users observe the political expression of others, but they can also use social signals (e.g., likes, shares, comments) to directly assess their impact on those in their network (boyd & Ellison, 2007). DIT would predict that those who perceive that social media can have an impact on politics are more likely to adopt the technology for their own political expression.

Closely related to the concept of observability of impact is political efficacy, a more global sense of one's ability to play a meaningful role in the political process (Balch, 1974). Psychological research suggests that individuals make judgments

about the efficacy of their actions based on observations of their social environment (see [Bandura, 1982](#)). Studies show that political expression on the internet can be predicted by an individuals' level of technological efficacy ([Hoffman & Schechter, 2016](#); also see [Correa, 2010](#); [Eastin & LaRose, 2000](#) for discussion of the impact of self-efficacy on online behaviors). Similarly, there is initial evidence that individuals who view expression on social media as an effective means of participating in politics are more likely to post and comment on political content, while those who observe negative interactions involving political talk on social media refrain from expressing their political views altogether ([Duggan & Smith, 2016](#)).

Theories of democratic deliberation also stress that successful deliberation depends upon the shared end-goal of reaching a solution to political or social problems ([Habermas, 1989](#)). Embedded in this conceptualization of deliberation is the understanding that citizens want their political conversations to have an impact on the realities of political life ([Delli Carpini, Cook, & Jacobs, 2004](#)). When individuals are uncertain whether their political views will be received constructively within a certain context, they are less likely to share their opinions ([Eliasoph, 1998](#); [Thorson, 2013](#)). However, when a specific context is perceived as conducive to constructive political talk, citizens may feel that their contributions will be impactful and be willing to express themselves. Based on the reviewed literature we hypothesize the following:

H1a: The perception that using social media for politics is impactful (W1) will be positively associated with using social media for political expression (W1).

Perceptions of ease

The degree to which technologies are easy to use is another key characteristic of diffusion of innovations. [Rogers \(1962\)](#) conceptualizes ease of use as *complexity*, how difficult a given technology is to understand or use. Research has shown that complex technologies are adopted at a much slower rate, while simpler technologies are easier for individuals to quickly put to use (e.g., [Denis et al., 2002](#); [Makse & Volden, 2011](#)). Complexity is particularly important for communication technologies, which are often intended for wide adoption by the public, but vary in their ease of use ([Davis, 1989](#); [Nysveen, Pedersen, & Thorbjørnsen, 2005](#)). The relative ease of using specific affordances of SNS, such as posting, sharing, and commenting, may ultimately make online participation less effortful. [Borrero, Yousafzai, Javed, and Page \(2014\)](#) found that for some users, perceiving expression on social media as less effortful increased their intention to do so. In light of this, we argue that if people perceive political involvement on social media to be easy, they should be more likely to express themselves politically on SNS.

This proposition is well supported by the technology acceptance model (TAM), which indicates that perceptions of technology use, particularly in terms of ease of use, are important antecedents that drive actual use of technology ([Davis, 1989](#); [Nysveen et al., 2005](#)). When applying this model to the context of

social media, researchers have found that the perceived ease of using social media can encourage actual use of social media (Rauniar, Rawski, Yang, & Johnson, 2014). As people become more comfortable using a new media technology, they tend to experience more benefits from using that technology (Campbell & Kwak, 2010). We therefore expect that those who perceive using social media as an easy way to participate in politics will be more likely to use SNS to express themselves politically:

H1b: The perception that using social media for politics is easy (W1) will be positively associated with using social media for political expression (W1).

Political expression on social media and offline political participation

If individuals ultimately do engage in political expression on social media, will they become Slacktivists? Lazarsfeld and Merton (1948) argued that mass media serve a “narcotizing dysfunction” by leading citizens to mistake the consumption of information with meaningful engagement in politics. While this argument appears, at face value, to nicely capture the contemporary phenomenon of Slacktivism, applying the concept of narcotizing dysfunction to explain the effects of political expression on social media is problematic on theoretical grounds. First, the focus of Lazarsfeld and Merton’s concern was the act of *consumption*, which they believed would lead individuals to “mistake *knowing* about problems of the day for *doing* something about them” (p. 23). Unlike traditional one-to-many mediums (e.g., newspapers, television), social media are many-to-many mediums that allows users to *express* themselves. We argue that expression likely has very different consequences than consumption. Second, social media are fundamentally different from other mass media in the degree to which user behavior is shaped by relationships within social networks. As we will discuss later, the diversity of political views in one’s social media network and one’s sensitivity to political difference have important implications for the role of expression in models of political behavior.

These theoretical distinctions might help explain why there is not widespread empirical evidence of Slacktivism. Some studies have found that engagement in low-threshold participation (e.g., signing an online petition) can decrease willingness to engage in high-threshold participation (e.g., volunteering for an organization) (Kristofferson, White, & Pelozo, 2014). However, an abundance of research has challenged the notion of “Slacktivism” and instead shown that political expression online and on social media can encourage offline participation (Boulianne, 2015; Lane & Dal Cin, 2017; Vaccari et al., 2015; Yamamoto, Kushin, & Dalisay, 2015).

Why might political expression on social media lead people to become more engaged offline? Through the process of composing and posting messages, individuals are more likely to pay close attention to and learn from information they have received, elaborate on and justify their position, and establish a greater level of commitment to their ideas (Pingree, 2007). Such expression moves people from

political observers to participants, which may give them confidence and tools that are carried over into offline political contexts (Gil de Zúñiga, Molyneux, & Zheng, 2014). By expressing themselves online, individuals build interest, come to think more about and relate to politics, and are more likely to see themselves as political, thus strengthening some core skills needed to subsequently participate offline (Kim & Kim, 2008; Vaccari et al., 2015; Yamamoto et al., 2015). Accordingly, political expression on social media is often considered a precursor to and facilitator of offline political participation (Rojas & Puig-i-Abril, 2009). As a result, we expect that political expression on social media should encourage, rather than dampen, offline involvement:

H2: Using social media for political expression (W1) will be positively associated with offline political participation (W2).

Thus far, we have proposed links between perceptions of social media and political expression on social media and between political expression on social media and offline political participation. Putting these arguments together, we predict that these links should result in a positive indirect effect of perceptions of social media on offline participation (Figure 1):

H3: Perceptions that using social media for politics is impactful or easy (W1) will have positive, indirect effects on offline political participation (W2) through the influence of political expression on social media (W1).

The moderating influence of SNS network homogeneity and age

Given the mediation model outlined above, we now turn to the possibility that the proposed indirect effects might be stronger or weaker depending on contextual and individual factors. The causes and consequences of expressing political views on social media are crucially influenced by both the balance of political views in one's network as well as the way different cohorts approach political expression. Specifically, we examine the possibility that our model is moderated by both the homogeneity of political views present in users' online social networks and their age (see Figure 1).

Network homogeneity as a moderator

The partisan composition of one's network has been a central factor in investigating political outcomes in the context of interpersonal and mobile communication (Campbell & Kwak, 2011; Lee, Kwak, & Campbell, 2015; Mutz, 2002a, 2002b), and more recently, in the context of social media (Choi & Lee, 2015; Lee et al., 2014). Given that the homogeneity of social networks is likely to determine the political experiences that individuals can have on social media—for example, the content of political viewpoints that individuals are exposed to—it is important to consider network homogeneity in analyses involving social media use and political outcomes.

The first link in our model between positive perceptions of social media and political expression on social media may be stronger among individuals with more politically homogeneous social networks. Those surrounded mostly by others with similar political ideas to their own will likely see reinforcing ideas exchanged in a constructive and respectful manner on social media and are less likely to have the unpleasant experience of encountering political fights or rants on social media (Vraga, Thorson, Kligler-Vilenchik, & Gee, 2015). Accordingly, those with positive perceptions of social media may be further encouraged to express themselves if they know their expression will be well received within a network of like-minded others.

The second link between political expression on social media and offline political participation may also be stronger among people with high levels of network homogeneity. When these people express themselves politically on social networks comprised of like-minded individuals, they are more likely to receive positive, supportive and reinforcing feedback (Gil de Zúñiga et al., 2014; Pingree, 2007). Users with homogenous social networks will rarely be challenged by individuals with political views dissimilar to their own (Mutz, 2006; Nir, 2011). Accordingly, such users may become more certain about, and committed to, their political positions and grow confident that they can be a part of the larger political process (Vaccari et al., 2015). Therefore, it is possible that individuals with more homogeneous social networks will demonstrate a stronger indirect relationship between positive perceptions of social media and offline political participation:

H4: The positive indirect effects of perceptions of social media for politics (W1) on offline political participation (W2), through the influence of political expression on social media (W1), will be stronger for individuals with more homogenous SNS networks.

Age as a moderator

Research has consistently shown that age plays a significant role in understanding *whose* political activity is most likely to be affected by political media use, and has demonstrated that age adds helpful nuance to models of online/offline political engagement (Kwak, Campbell, Choi, & Bae, 2011; Xenos et al., 2014). Similarly, we argue that the relationships in our model should be *weaker* for younger people. Investigation of this possibility is supported by journalists' frequent focus on young people as the group most likely to engage in Slacktivism (e.g., Robertson, 2014), as well as research demonstrating that young people may approach political expression on SNS with a greater sensitivity to political disagreement (Thorson, 2013) and find traditional offline participation less meaningful (Bennett et al., 2011).

Young people are often among the earliest adopters of new communication technology (Kennedy & Funk, 2016) and accordingly, age is used as a moderator in various studies of technological adoption (e.g., Straub, 2009). However, because of their heightened aversion to political disagreement, enthusiasm for social media among young people may not necessarily lead to political expression. Research

shows that some young people refrain from political expression on social media altogether for fear of engaging in conflict in an important social environment (Thorson, 2013). Accordingly, young social media users adopt complicated social norms governing when it is acceptable to talk politics (Vraga et al., 2015), which may inhibit their own expression. This evidence suggests that positive perceptions of social media may not lead to political expression for younger people in the same way they do for older people.

Similarly, there is reason to suspect that young people may experience a weaker “spill-over” effect from expression on social media into participation offline. Younger people are less likely than older people to adhere to models of citizenship that value offline participation and instead may feel that their self-expression is “meaningful” enough (Bennett et al., 2011). Previous studies support this, demonstrating that the effects of online political media use on political participation grows with age (Gil de Zúñiga et al., 2012; Kwak et al., 2011; Vaccari et al., 2015). Given the reviewed literature, we argue that the indirect relationship between positive perceptions of social media and offline political participation will be weaker for younger people:

H5: The positive indirect effects of perceptions of social media for politics (W1) on offline political participation (W2), through the influence of political expression on social media (W1), will be weaker for younger individuals.

Method

Sample

The data for this study were collected using a two-wave national online survey. Respondents from the United States were recruited by the survey research company YouGov. To ensure a nationally representative pool of respondents, YouGov recruits through online advertising and strategic partnerships with a wide range of websites. The sub-sample for our study was drawn from YouGov’s larger pool of adult respondents, using a matching technique, which reflects the population in terms of age, gender and other demographic characteristics. Wave 1 (W1) of the survey was conducted in late September 2016, during the general campaign period of the 2016 US presidential election. This first wave had a 29% response rate, with 1,800 respondents completing the survey out of 6,213 individuals who were invited to participate. This response rate is far above those reported by major research organizations during the same period (Duggan & Smith, 2016). Invitations to participate in wave 2 (W2) were sent to all W1 respondents in late October, 2016 during the last six days of the general campaign prior to election day. In all, 1,293 respondents completed the survey, resulting in a 72% retention rate. Any respondents who failed an attention-check question were removed, leaving 1,056 valid responses.¹ Because our study concerns perceptions and behaviors specific to social media, we further limit the analyses and descriptive statistics reported below to

respondents who reported using SNS that are frequently used for political purposes (Duggan & Smith, 2016), including Facebook, Twitter, Snapchat or Instagram during W1 ($N = 902$, 85.42%).

The final sample demographic profile resembles figures reported in the US Census Bureau's 2015 American Community Survey (ACS) for variables including median age of individuals under 18 (ACS = 45–54 years, W1 = 49), percentage of females (ACS = 51.4%, W1 = 58%), median household income (ACS = \$53,889, W1 = \$50,000–\$59,000) and median educational attainment for those 25 or older (ACS = some college, W1 = some college).

Measures

Perceptions of political participation on social media and offline

To assess perceptions of political participation in various contexts we asked respondents to rate their agreement with four statements using a seven-point scale ranging from 1 = definitely disagree to 7 = definitely agree. The first item measured the perception that “expressing political views on social media has a significant impact on politics” and was recoded into *perceived social media (SM) impact* (W1; $M = 3.52$, $SD = 1.64$). The second item measured the perception that “participating in politics on social media takes a lot of effort,” which was reverse coded into *perceived SM ease* (W1; $M = 4.85$, $SD = 1.62$). The final two items used similar wording to assess perceptions that offline participation has an impact (*perceived offline impact* W1; $M = 4.22$, $SD = 1.58$) and is easy (*perceived offline ease* W1; $M = 3.30$, $SD = 1.57$). Social media perception items were used as independent variables in our analyses, while offline perception items were used to control for respondents' general perceptions of political participation as impactful or easy.

Social media political expression

In order to capture political expression on social media, we asked how frequently respondents performed behaviors on four platforms frequently used for such purposes in our data set (Facebook: 5 items, Twitter: 7 items, Snapchat: 1 item and Instagram: 1 item). Respondents reported the frequency of platform specific behaviors on six-point scale ranging from 1 = never to 6 = every day in the past 30 days. These items included behaviors such as “sharing,” “liking,” and “tweeting” political content on specific platforms. Items were combined to form four platform specific indexes ($\alpha = .91$ – $.96$). The platform specific indexes were then combined to create an overall index of *SM political expression* (W1; $M = 1.41$, $SD = .56$).

Offline political participation

To assess the criterion variable of offline political participation, we used eight items asking respondents how frequently they performed a range of offline political activities including: (a) attended a public hearing, town hall meeting, or city council meeting, (b) called or mailed a public official or politician, (c) physically posted or distributed a political sign, banner, button or bumper sticker, (d) attended a political event for a candidate, (e) participated in a political demonstration or protest,

(f) volunteered for a political campaign, (g) signed a petition about a political issue, topic or candidate; and (h) donated money to a political party, candidate or political action committee in-person or by mail. Respondents were given these measures in both W1 and W2 using the same six-point scale as previous frequency measures, but changing the reference window from “the past 30 days” (W1) to “the past 14 days” (W2). This change was necessary in order to ensure that there was no overlap in the reference window between waves. All eight measures were combined into indices for offline political participation (one for each wave). *Offline political participation (W2)* was used as the dependent variable ($M = 1.20$, $SD = .44$, $\alpha = .81$), while *offline political participation (W1)* was used to control for baseline offline political participation ($M = 1.26$, $SD = .5$, $\alpha = .83$).

Age

Significant differences have been observed in the way different age groups engage in politics, particularly in online contexts (e.g., [Bennett & Segerberg, 2012](#)). Age was measured by asking respondents in which year they were born ($M = 47.46$ years, $SD = 16.06$ years).

SNS network homogeneity

Previous research suggests that the political diversity of social networks can influence processes of political communication and participation (e.g., [Lee et al., 2015](#); [Mutz, 2002a](#)). Given the difficulty of accurately self-reporting network characteristics across multiple platforms, we asked respondents about the social networking site they used the most frequently. Two items, using a 5-point scale ranging from 1 = none to 5 = all, asked how many individuals on the site respondents use the most, “share the same views on social issues or politics” and “support the same presidential candidate.” These two items were combined as an index of SNS *network homogeneity* ($M = 2.92$, $SD = 1.02$, $r = .81$).

Control variables

We also include a number of control variables in our analyses, which are theoretically relevant to the dependent, independent or mediating variables. To account for the possibility that respondents’ social media political expression might be reflective of more general social media use, we control for the frequency of *SM for relational use* by asking respondents how frequently in the past 30 days they used social media to “stay in touch with family and friends.” This item was measured on the same six-point frequency scale as previous measures (W1; $M = 4.25$, $SD = 1.73$). Research suggests that political expression on social media can also be shaped by levels of political interest and traditional political news consumption ([Hasell & Weeks, 2016](#)). We control for *political interest* ($M = 5.04$, $SD = 1.82$) by asking respondents their agreement with the statement; “I am very interested in politics,” on a 7-point scale ranging from 1 = definitely disagree to 7 = definitely agree. Traditional media use was assessed with items asking how often in the past seven days respondents used a range of news sources, including national nightly news, cable news, local television

news, daily newspapers and online news sites. Responses to each item were measured on a 5-point scale, ranging from 1 = never to 5 = everyday, and then combined as an index of *traditional media use* ($M = 2.16$; $SD = .98$; Cronbach $\alpha = .61$). Finally, *gender* and *education* were included as demographic control variables.

Analysis

To strengthen our test of the causal link between social media perceptions and offline political participation through social media political expression, we used panel data to control for W1 levels of offline political participation. This allowed us to effectively assess the change in offline political participation (Eveland & Thomson, 2006). For social media perceptions and social media political expression we used W1 variables. Perceptions that *offline* participation is impactful or easy were included in all analyses to control for general attitudes towards political participation and to allow us to analyze the perceptions unique to social media. We also controlled for W1 levels of political interest, SM relational use, traditional media use, SNS network homogeneity, age, gender and education in all analyses.

Determining appropriate α level

Throughout this study we use a pre-determined α level of .05 as our criterion for statistical significance. In acknowledgement of the growing call for researchers to better justify their chosen level of statistical significance (see O'Keefe, 2007), we examined extant literature for estimates of anticipated effect sizes and conducted power analyses to determine our achieved power at alternative α levels. Because we could find no meta-analytic evidence suggesting an anticipated effect size for the specific relationships in our model, we used Cohen's (1992) guideline for small ($f^2 = .02$), medium ($f^2 = .15$) and large ($f^2 = .35$) main effect sizes. Because our model also includes interactive effects, which are likely to be far smaller than main effects (Aguinis, Beaty, Boik, & Pierce, 2005), we used a different guideline for expected interactive effects in our model. We selected small, medium and large interactive effect sizes that correspond to 25th ($f^2 = .0004$), 50th ($f^2 = .002$), and 75th ($f^2 = .0053$) percentiles of effects sizes observed by Aguinis et al. (2005) in their 30-year review of moderation effect sizes.

Using the above effect sizes, a desired power level ($1 - \beta$) of .80 (Cohen, 1992), and our sample size ($N = 902$), we computed achieved power for both the canonical α level of .05 as well as a stricter α level of .01. Results from power analyses conducted using the statistical program G*Power 3.1 are reported in Table 1. We find that acceptable power to detect small, medium and large main effects is achieved at both α levels. However, achieved power falls below .80 for all sizes of interactive effects at both α levels. This is not entirely surprising given that interactive effects are typically much smaller than main effects (Aguinis et al., 2005) and that tests for interactive effects are notoriously under-powered (Brookes et al., 2004). Accordingly, we chose to use $\alpha = .05$, in order to retain the maximum power to detect interaction effects, while noting that even using this α level leaves us underpowered.

Table 1 Power Analyses

	Achieved power when $\alpha = .05$	Achieved power when $\alpha = .01$
Main Effect—Small ($f^2 = .02$) ¹	.98	.95
Main Effect—Medium ($f^2 = .15$) ¹	1.00	1.00
Main Effect—Large ($f^2 = .35$) ¹	1.00	1.00
Interactive Effect—Small ($f^2 = .0004$) ²	.09	.02
Interactive Effect—Medium ($f^2 = .002$) ²	.27	.11
Interactive Effect—Large ($f^2 = .0053$) ²	.58	.34

Notes: All calculations based on $N = 902$.

¹ f^2 from Cohen (1992); uses 13 as the number of predictors.

²from Aguinis et al. (2005); uses 14 as the number of predictors.

Results

Tests of simple mediation

To test our proposed theoretical model (Figure 1), we first examined the potential mediating role of SM political expression by testing two regression models and then calculating indirect effects using the SPSS macro PROCESS.² The first regression tested the relationship between perceptions of social media and SM political expression (H1a and H1b; Table 2, first column). We found that both perceived SM impact, $b = .06$ (.01), $p < .001$, and perceived SM ease, $b = .04$ (.01), $p < .001$, are positively associated with SM political expression (W1) after entering all control variables. This indicates that the more that respondents perceive political participation on social media as impactful or easy, the more likely they are to engage in political expression on social media. The second regression model tested the relationship between SM political expression (W1) and offline political participation (W2), while controlling for W1 levels of participation and other control variables (H2; Table 2, second column). The two social media perception variables were also entered into the model in order to test for mediation. We found that SM political expression is positively related to offline political participation (W2), $b = .11$ (.02), $p < .001$, indicating that engaging in more political expression on social media leads to an increase in political participation offline. We found no significant direct relationship between perceived SM impact and offline political participation, $b = .001$ (.01), $p = .89$, or perceived SM ease, $b = .01$ (.01), $p = .40$.

To formally test SM political expression as a mediator of the relationship between perceptions of social media and offline political participation, we used model 4 of the SPSS macro PROCESS, which employs ordinary least squares path analyses (Hayes, 2013). This allowed us to test the unstandardized indirect effect of each predictor by computing 10,000 bootstrapping samples and bias corrected 95% confidence intervals (CI). PROCESS used the same regression models shown in Table 2 as a basis for testing all models. First, we computed the indirect effect

Table 2 Regressions for Mediation Analyses

	<i>Dependent Variables</i>	
	SM Political Expression (W ¹) (Mediator) <i>b</i> (SE)	Offline Political Participation (W ²) (Criterion) <i>b</i> (SE)
SM Political Expression (W ¹)	-	.11 (.02)***
Perceived SM Impact (W ¹)	.06 (.01)***	.001 (.01)
Perceived SM Ease (W ¹)	.04 (.01)***	.01 (.01)
Age	-.003 (.001)***	.002 (.001)***
Gender (Male = 1, Female = 2)	-.04 (.03)	.02 (.02)
Education	.004 (.01)	.02 (.01)*
Political Interest (W ¹)	.05 (.01)***	.01 (.01)
SM for relational use (W ¹)	.09 (.01)***	-.01 (.01)*
Traditional Media Use (W ¹)	.03 (.02) [#]	-.02 (.01)
SNS Network Homogeneity (W ¹)	.06 (.02)***	.01 (.01)
Perceived Offline Impact (W ¹)	-.03 (.01)**	-.01 (.01)
Perceived Offline Ease (W ¹)	-.02 (.01)	.003 (.01)
Offline Political Participation (W ¹)	.42 (.03)***	.53 (.03)***
Constant	.003 (.12)	.21 (.09)*
Adjusted R ²	.39	.48
Residual Std. Error	.44 (df = 889)	.32 (df = 888)
F Statistic	49.34*** (df = 12; 889)	64.98*** (df = 13; 888)

Note: Unstandardized coefficients reported. Standard errors in parentheses.

[#] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$, (two-tailed). $N = 902$. In model predicting SM Political Expression (W¹) ΔR^2 for Perceived SM Impact (W¹) = .023, ΔR^2 for Perceived SM Ease (W¹) = .009 (all $ps < .001$). In model predicting Offline Political Participation (W²) ΔR^2 for SM Political Expression (W¹) = .012 ($p < .001$).

for a mediation model specifying perceived SM impact as the predictor. We found a significant indirect effect of perceived SM impact (W1) on offline political participation (W2) through SM political expression (W1), with a point estimate of .007 (.003), 95% CI [.0021, .0153] (CI entirely above zero). Next, we tested a model specifying perceived SM ease (W1) as the predictor and found a similar indirect effect of .004 (.002), 95% CI [.0010 to .0101] (CI entirely above zero). This indicates that holding perceptions that social media is impactful or easy ultimately increases offline political participation by encouraging respondents to express themselves politically on social media (H3). While both perceptions were fully mediated by SM political expression, the indirect effect observed for the perception that social media has an impact was nearly double that of the indirect effect observed for the perception that social media is easy.

Tests of moderated mediation

Finally, we addressed the question of whether or not the mediated effects observed vary based on respondents' age or the homogeneity of their social networks. To do so, we conducted moderated mediation analyses for each social media perception using PROCESS model number 58, which tests the indirect effect of a given predictor at different levels of either age or SNS network homogeneity. Model 58 tests one moderator at a time while controlling for the other moderator and produces interaction terms for both paths in the model (see Figure 1). Accordingly, the coefficients reported below come from models that are identical, except for the variables that are specified as the predictor and moderator.

When SM impact was specified as the predictor, we found that the relationship between perceived SM impact (W1) and SM political expression (W1) is significantly moderated by SNS network homogeneity, $b = .02$ (.01), $p = .04$, but not significantly moderated by age, $b = .0005$ (.001), $p = .36$. The relationship between SM political expression (W1) and offline political participation (W2) is moderated by both SNS network homogeneity $b = .06$ (.02), $p = .01$ and age, $b = .003$ (.001), $p = .04$.

The results summarized above suggest that the indirect effect of perceiving social media as impactful on offline political participation through social media political expression, may vary depending on an individual's age and the political diversity of their social media networks (H4 and H5). To further probe these interactions and determine their influence on the mediated effect of social media political expression, we employed the pick-a-point approach recommended by Hayes (2013), in which values of each moderator are specified and indirect effects are computed at those levels. This allowed us to determine indirect effects at different levels of age and SNS network homogeneity. Results show that indirect effects increase as individuals' networks become more homogeneous, with no significant indirect effects for those with comparatively diverse networks (at values below 2.9 on a 5-point scale). Indirect effects also increase as individuals get older, with no significant indirect effects for individuals 31 years or younger. Figures 2 and 3 plot approximate point estimates and 95% CI across levels of the moderators and include precise point estimates in the notes.³

We took a similar approach to analyzing models with perceived SM ease as the predictor. We found that the relationship between perceived SM ease (W1) and SM political expression (W1) is not significantly moderated by SNS network homogeneity, $b = .01$ (.01), $p = .37$ or age, $b = .001$ (.001), $p = .11$. The relationship between SM political expression (W1) and offline political participation (W2) is moderated by both SNS network homogeneity, $b = .06$ (.02), $p < .01$ and age, $b = .003$ (.001), $p = .04$.

This suggests that the indirect effect of perceiving social media as easy on offline political participation may vary depending on an individual's age and SNS network composition (H4 and H5). We again plotted indirect effects and 95% CI at

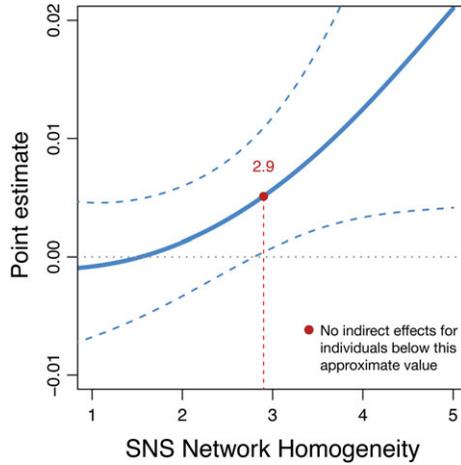


Figure 2 Conditional Indirect Effects of Perceived SM Impact (W^1) on Offline Political Participation (W^2) through SM Political Expression (W^1) at Values of SNS Network Homogeneity.

Note: Lines represent trends. Precise point estimate (PE) and 95% CI at levels of SNS Network Homogeneity³: **1.90** (-1 SD), $PE = .0009$, CI $[-.0037$ to $.0068]$, **2.92** (Mean), $PE = .0052$, CI $[.0009$ to $.0118]$, **3.94** ($+1$ SD), $PE = .0119$, CI $[.0037$ to $.0273]$.

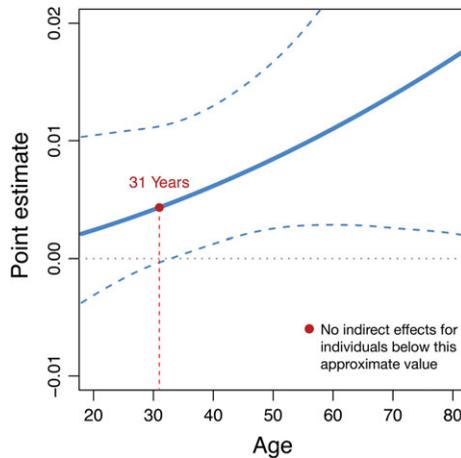


Figure 3 Conditional Indirect Effects of Perceived SM Impact (W^1) on Offline Political Participation (W^2) through SM Political Expression (W^1) at Values of Age.

Note: Lines represent trends. Precise point estimate (PE) and 95% CI at levels of age³: **31.40** (-1 SD), $PE = .0044$, CI $[.0001$ to $.0123]$, **47.67** (Mean), $PE = .0078$, CI $[.0027$ to $.0169]$, **63.52** ($+1$ SD), $PE = .0120$, CI $[.0034$ to $.0267]$.

levels of the moderators, with precise point estimates as a note (Figures 4 and 5). Indirect effects increase as individuals' networks become more homogeneous, with no significant indirect effects for those with comparatively diverse networks (at values below 2.6 on a 5-point scale). Indirect effects also increase as individuals get older, with no significant indirect effects for individuals 36 years or younger.

Discussion

This study examines the narrative popularized by the Slacktivism hypothesis: positive perceptions of political participation on social media can lead individuals down the road to political disengagement. In the construction of our theoretical model, we engaged two well-established theoretical frameworks, the narcotizing dysfunction of the media thesis (Lazarsfeld & Merton, 1948) and DIT (Rogers, 1962). On the one hand, our findings confirm that ease and impact, the attractive features of social media highlighted by the Slacktivism hypothesis, are indeed associated with political expression on social media. These results are reflective of the characteristics of innovation (observability and complexity) that DIT predicts will lead to technological adoption (Rogers, 1962).

However, we do not find support for the notion that those who express themselves online become Slacktivists, as implied by the concept of narcotizing dysfunction (Lazarsfeld & Merton, 1948). To the contrary, and consistent with prior literature (e.g., Boulianne, 2015), we find that those who engage in low-threshold acts of political expression on social media are more likely to subsequently take

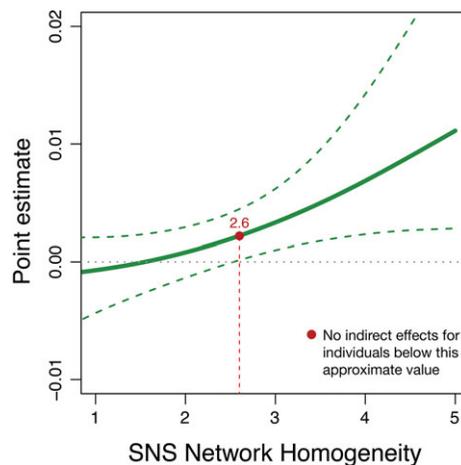


Figure 4 Conditional Indirect Effects of Perceived SM Ease (W^1) on Offline Political Participation (W^2) through SM Political Expression (W^1) at Values of SNS Network Homogeneity.

Note: Lines represent trends. Precise point estimate (PE) and 95% CI at levels of SNS Network Homogeneityⁱⁱⁱ: **1.90 (-1 SD)**, PE = .0006, CI [-.0026 to .0044], **2.92 (Mean)**, PE = .0031, CI [.0005 to .0080], **3.94 (+1 SD)**, PE = .0066, CI [.0016 to .0182].

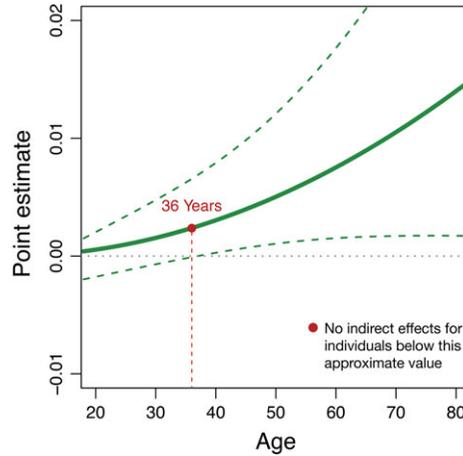


Figure 5 Conditional Indirect Effects of Perceived SM Ease (W^1) on Offline Political Participation (W^2) through SM Political Expression (W^1) at Values of Age.

Note: Lines represent trends. Precise point estimate (PE) and 95% CI at levels of ageⁱⁱⁱ: **31.40** (–1 SD), PE = .0017, CI [–.0002 to .0068], **47.67** (Mean), PE = .0045, CI [.0013 to .0108], **63.52** (+ 1SD), PE = .0085, CI [.0023 to .0208].

part in higher-threshold offline political activity. By formally testing social media political expression as a mediator, we confirm that perceiving social media as easy or impactful modes of political engagement indirectly encourages offline political participation. In this sense, our results support the contention that political expression may not have the same “narcotizing” effects as political information consumption, despite what previous theory might predict.

Our results also show that the benefits of perceiving the political world of social media positively are not uniform for everyone. The indirect effects we observe are non-existent for those with politically diverse networks and for younger people, suggesting that political expression may be too risky an endeavor in some contexts or for some cohorts. This highlights the reality that political difference may play a key role in shaping political expression on social media.

For users with homogenous social networks, positive expectations of political discourse on social media are likely to be reaffirmed and strengthened. This finding is in line with prior literature on network diversity in the context of interpersonal and mobile communication, in that political discussion in networks of like-minded contacts can lead to greater certainty of political views and increased willingness to participate in politics (Campbell & Kwak, 2011; Mutz, 2002a). Those surrounded by people who hold similar political views on social media can express themselves without risking damage to social relationships (Mutz, 2006). In contexts where political talk is largely supportive or constructive, expression may feel like a more meaningful and gratifying political act. Positive reactions to acts of expression may further galvanize users to take part in more effortful offline action.

Although it is encouraging to find that people in like-minded social networks participate more after expressing themselves on social media, it is also possible that such individuals miss out on important opportunities to deliberate with others who hold opposing viewpoints (Kim & Pasek, 2016; Mutz, 2002b). Users with highly homogenous social networks may participate in partisan politics within online echo chambers, without sufficiently weighing the diversity of opinions available in American society. Given the historical importance of deliberation in the democratic process, more empirical work needs to be conducted to investigate the implications of network homogeneity for political deliberation and participation in our model.

Similarly, we find that young people's positive perceptions of social media are not likely to translate into offline action. On the one hand, we find that positive perceptions of social media are related to increased engagement in political expression regardless of one's age. This provides further evidence that despite the "Slacktivism" narrative's focus on young people (e.g., Morozov, 2012), perceiving social media as impactful or easy encourages individuals of *all ages* to express their political views on SNS. However, we find that only middle-aged and older people benefit from a potential "spill-over" effect between online expression and offline activity. Younger people's positive perceptions of social media make them more likely to express themselves on social media, but not more likely to engage in offline political participation.

One possible explanation for why our model largely does not benefit young people lies in the difference between generational styles of citizenship (Bennett et al., 2011). For older people, who are likely to practice "dutiful citizenship," attending political rallies or public hearings are behaviors that are valued as good citizenship. Yet, young people may adopt the norms of "actualizing citizenship," and for them, political expression on social media may in and of itself be a way to satisfy citizenship goals. It is important to note that we do not observe a *negative* effect of expression on participation as the narcotizing dysfunction or Slacktivism accounts would predict, but rather find no evidence to suggest that political expression on social media is influencing young people's offline participation.

Our study indicates that both perceptions of impact and ease can indirectly shape offline behavior. While the Slacktivist narrative has often combined these two perceptions, our intention was to measure and analyze them separately as suggested by DIT. Some scholars have emphasized the *effort* (difficulty) involved in traditional forms of participation as a key factor in declining civic engagement (Putnam, 2001), however we find that the perception of *impact* has the strongest effect on offline political participation. This suggests the relative importance of individuals' perception that their political behavior will have a substantive impact. While we do not specifically test the interaction between perceptions of impact and ease, future work should examine the interplay between different perceptions of social media.

On a related note, the similarity in the direction of the effects of the two social media perceptions in our model does necessitate considering whether they are simply measuring the same latent construct. In order to examine the discriminant validity of our two perception measures, we performed post-hoc regression analyses of their

antecedents. Results, which are summarized in supplementary Appendix A, first show that perceived SM impact and perceived SM ease are negatively correlated ($r = -.36$). The cross-sectional regression models, which predict each perception variable while controlling for the other, demonstrate that the two perceptions have a unique set of predictors. While both perceptions are more likely among younger people and those with higher political interest, perceived SM impact is more likely among women, those who are less educated, those who have higher levels of political self-efficacy, and those who engage in more frequent offline political participation. Perceived SM ease is more likely among those who use social media more frequently for relational purposes. These findings suggest that perceptions of ease and impact are indeed distinct, however future research is needed to continue to investigate the unique roles that they may play in influencing political behavior on social media. In addition, future research should go beyond our single-item measures to strengthen the reliability and validity of the perception concepts we examine.

The panel data used in this study strengthen our causal claims by effectively controlling for changes in offline political participation over time.⁴ Despite this strength, our study is limited in several ways. First, as with all survey research, we must rely on individuals to accurately report their own behavior. While we have no reason to believe our self-report measures would lead to systematically biased reporting, future research should examine behavioral data to better capture what individuals do on social media. This may be particularly helpful in assessments of political diversity within online networks. Our conclusions are also qualified by the modest effect sizes we observe, which may be related to the number of control variables in our model and the general level of political disengagement in America at present. Nevertheless, such effects promise to have a significant impact at the population level.

Conclusion

This article contributes to the literature by advancing a model that helps explain how positive perceptions of a political communication technology in one domain influence political behavior in another. While our study is one of the first to examine this dynamic in the context of social media, it is important to note that our findings echo previous work on the decline of traditional forms of civic engagement over the past half-century. [Putnam \(2001\)](#) suggests that increased use of electronic media, such as television, was a contributing factor to Americans' withdrawal from traditional civic life over the past half-century. We could imagine a similar dynamic emerging as social media mature as venues for politics, in which perceptions of the digital political sphere not only influence what people do on social media, but also exert crucial influence over whether or not traditional forms of participation endure or continue to disappear. However, we demonstrate here that, paradoxically, the future of older forms of participation may depend on positive perceptions of new forms of participation. Our finding that young people and those with politically diverse networks do not benefit from such positive perceptions, highlights the fragility of such emerging pathways to increased democratic participation.

Ultimately, our theoretical model poses an interesting question for those who wish to engage more people in the political process. If perceiving political action on social media as impactful or easy indeed promotes political participation, can such perceptions be cultivated? Existing efforts to engage individuals in politics have often focused on the responsibilities and benefits associated with traditional forms of political participation (e.g., Putnam, 2001). Given the challenging nature of directly motivating individuals to vote or attend a political rally, might it be more beneficial to focus on promoting social media as a low-threshold gateway to engagement? By making political participation on social media appear impactful or easy, more people may be drawn into politics and encouraged by their experiences with political expression to participate the old-fashioned way.

Supporting Information

Additional supporting information may be found in the online version of this article: Table S1. Summary of Regression Analyses for Social Media Participation Perceptions

Notes

- 1 Participants who failed the attention check were not significantly different from the remaining participants in their level of political interest, $t(1107) = -2.97, p = .70$.
- 2 All analyses were conducted again with participants who failed the attention check included. The results are comparable to what we report here with small differences in effect sizes and one change in level of significance (the indirect effect of SM Impact on offline political participation is non-significant at the mean level).
- 3 All plot lines drawn by computing indirect effects using the R package “mediation,” with 1,000 simulations for discrete values of the moderator. Lines were then smoothed using interpolation and plotted. Precise indirect effects are unstandardized point estimates generated using PROCESS and based on 10,000 bootstrapping samples with 95% biased corrected CIs. All control variables included in each model. $N = 902$.
- 4 Our lagged dependent variable model allows us to help clarify previous research on the relationship between social media and offline political participation, which has largely relied on cross-sectional data to draw conclusions (Boulianne, 2015). There is ongoing discussion about the strengths and weaknesses of the lagged dependent variable model we used. Some scholars caution that controlling for autoregressive terms might generate biased coefficient estimates (e.g., Achen, 2000). Yet, we believe that the lagged dependent variable model remains a good choice, because in the context of elections, past political behaviors matter for future political behaviors (see Keele & Kelly, 2005). We also controlled for potential confounders in our model (Finkel, 1995), ranging from demographic to political and media use-related variables.

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Positive Side of Social Comparison on Social Network Sites: How Envy Can Drive Inspiration on Instagram

Adrian Meier, MA, and Svenja Schäfer, MA

Abstract

A growing body of research finds social network sites (SNS) such as Instagram to facilitate social comparison and the emotional experience of envy in everyday life, with harmful effects for users' well-being. Yet, previous research has exclusively focused on the negative side of social comparison and envy on SNS. Thereby, it has neglected two important aspects: (a) comparison processes can also elicit a beneficial emotional reaction to other users' online self-presentations (i.e., benign envy) and, thus, (b) comparisons can be motivating, with positive outcomes for well-being. The present study aims at closing this research gap by investigating how social comparisons and envy on SNS are related to *inspiration*, a complex motivational state. Due to its specific characteristics of a creative and aesthetic visual culture, we focus our investigation on Instagram. A structural equation modeling mediation analysis with data from $N=385$ Instagram users reveals that the intensity of social comparisons on Instagram was positively related to inspiration and that this relationship was fully mediated by benign envy. Furthermore, inspiration on Instagram was related to increased positive affect. Results of this study underline that to understand the effects of SNS on well-being, we also need to consider the positive motivational side of social comparison and envy.

Keywords: Instagram, social comparison, envy, inspiration, well-being

Introduction

INSTAGRAM HAS BECOME a frequently used mobile social network site (SNS) that is deeply embedded in users' everyday lives.^{1,2} Research shows that the visual content shared on Instagram can impair well-being, particularly by facilitating social comparison processes^{1,3} and by eliciting negative emotions such as envy.⁴ However, comparing oneself to others can also drive individuals to engage in new and self-improving behaviors,^{5,6} eliciting positive motivational outcomes such as inspiration.⁷ Inspiration describes a complex intrinsic, yet, stimulus-evoked approach motivation that animates individuals to transcend their current selves,⁸ thus being highly beneficial for individuals' well-being.⁹ In the present study, we investigate whether comparisons on Instagram can contribute to well-being by eliciting this positive motivational state of inspiration.

After reviewing comparison processes and their outcomes on SNS, we will make the case for inspiration as a positive outcome of comparisons on Instagram. We will then introduce the distinction between malicious and benign envy^{10,11} as a potential mechanism linking comparisons to inspiration

on Instagram. In doing so, we also integrate our research with previous research on the negative well-being outcomes of social comparison and envy on SNS.

Positive Side of Social Comparison on SNS

Social comparison is defined as "the process of thinking about information about one or more other people in relationship to the self."^{12(pp520f)} Comparisons allow one to assess the self in relationship to a target on a personally relevant criterion, which is evolutionarily adaptive and thus deeply engrained in human psychology.¹³ Research often distinguishes between *upwards* and *downwards* comparisons. While upward comparisons are typically associated with negative effects for the self (i.e., feeling inferior), downward comparisons are associated with positive effects (i.e., feeling superior).¹³ However, neither direction necessarily determines positive or negative outcomes.⁵ Instead, the effects of comparisons seem to be determined by a selective information accessibility mechanism: *assimilation* versus *contrast*.^{14,15} While assimilative comparisons shift the individual's focus toward becoming similar to the comparison target, contrastive comparisons shift

the focus toward the differences with the target and what upholds them. Research further indicates that while contrast with upward targets and assimilation with downward targets decrease well-being, assimilation with upward targets and contrast with downward targets increase well-being.¹³

With regard to SNS environments, research has so far overwhelmingly focused on “negative” (i.e., contrastive) upward comparisons.⁴ Unsurprisingly then, studies on SNS have predominantly found negative effects of comparisons on well-being such as increased depressive symptoms,^{1,16} higher negative affect,¹⁷ and lower positive affect,³ as well as lower (state) self-esteem.^{2,17} In contrast, a recent survey found comparisons on Facebook that were motivated by self-improvement to be associated with higher positive affect among individuals with high self-esteem.¹⁸ In general, upward comparisons have been found to elicit positive motivational outcomes such as inspiration.⁶ Together, this literature points to an important gap in previous research: comparisons on SNS may also have positive motivational outcomes. In this study, we specifically focus on how such comparisons may give rise to inspiration on the understudied SNS Instagram.

Inspiration as a Motivational Outcome of Instagram Use

Inspiration is conceptualized as a complex appetitive motivational state that can be experienced in various domains of life.¹⁹ Three components define the experience of inspiration: First, *transcendence* refers to gaining an awareness of new or better possibilities (e.g., learning about a previously unknown travel destination from a friend’s SNS post). Second, *evocation* clarifies that inspiration is, initially, a passive and stimulus-evoked experience. One is spontaneously *inspired by* something (e.g., one first encounters information about said travel destination serendipitously by browsing one’s SNS feed). Finally, inspiration elicits *approach motivation*. One is *inspired to* get active and bring a new and realizable idea into fruition (e.g., the travel post elicits the specific idea of planning your next holiday there). Thus, by spontaneously encountering novel stimuli that resonate with their current interests, individuals can be inspired to try out new experiences.²⁰

Instagram, a mobile SNS through which users share pictures and videos on diverse topics (e.g., travel, nature, food, sports, art), appears as a highly inspiring social environment. Instagram has a particularly strong visual positivity norm.¹ Uploaded content is typically aesthetic and optimized for self-presentation, but also a result of creative self-expression. A study by Ouwerkerk and Johnson⁷ found inspiration to be a prevalent motive for following and friending others on SNS, particularly on Instagram. Results indicate that inspiration was significantly related to time spent on Instagram as well as the number of followings, but unrelated to time spent on other SNS. Thus, there is some evidence indicating that Instagram provides a source of inspiration in users’ everyday lives.

Previous studies identified the intensity with which individuals engage in comparisons as a key driver of inspiration in general.⁶ We aim to replicate this link in the Instagram context. While one would expect *upward* comparisons to be particularly strongly related to inspiration on Instagram, in this study, we only consider general, *nondirectional* social comparison intensity on Instagram. As self-report scales supposedly measuring upward comparisons often conflate them with negative

effects for the self,⁴ we instead measured social comparison with neutral, nondirectional intensity items (see Measures for details).¹⁶ Accordingly, we expect the following:

H1: Nondirectional social comparison on Instagram will be positively related to inspiration on Instagram.

Inspiration activates intrinsically motivated behavior, which is highly beneficial for affective well-being.²¹ Accordingly, inspiration has been linked longitudinally and experimentally to increased *positive affect* while showing no relationship to *negative affect*.^{9,22} With regard to inspiration as a result of using Instagram, we thus analogously assume,

H2: Inspiration on Instagram will be (a) positively related to positive affect and (b) unrelated to negative affect.

So far, it remains unclear how exactly comparisons on Instagram can contribute to the positive motivational state of inspiration and, hence, to well-being. Moreover, previous research clearly shows that comparisons on SNS can negatively impact motivation and well-being.^{1,2,4} To integrate our positive view on social comparison with previous research and to explicate a mechanism linking comparisons to inspiration, we turn our investigation to envy, a key emotional outcome of upward comparisons.^{4,15}

Malicious and Benign Envy on SNS

Envy is usually defined as “an unpleasant and often painful blend of feelings characterized by inferiority, hostility, and resentment caused by a comparison with a person or group of persons who possess something we desire.”^{23(p49)} While envy has long been seen as an inherently negative and self-harming emotion, recent research has reconceptualized envy as an emotion that can take two forms: First, *malicious envy* or *envy proper*, which elicits a hostile motivation to pull the superior comparison target down. Second, *benign envy*, while also being mildly frustrating, elicits a more benevolent motivation to self-improve and become more similar to the superior comparison target.^{10,11}

Since the mechanisms underlying assimilation versus contrast in social comparison are assumed to occur largely unconsciously,¹⁴ they can best be measured *indirectly* by assessing their respective emotional outcomes (i.e., malicious vs. benign envy) via self-reports.¹⁵ As an emotional outcome of upward comparison processes,¹⁵ malicious envy indicates the intensity of *contrastive upward comparisons*. That is, malicious envy assesses whether the attentional focus of comparison lay on the deficits one has in comparison to the target. Benign envy, in turn, indicates the intensity of *assimilative upward comparisons*, assessing whether the attentional focus lay on ways to become more similar to the target.¹⁴

Research on envy as a mediator between SNS usage (specifically, comparisons on SNS) and well-being has so far exclusively investigated malicious envy—indicating contrastive upward comparisons—and thus consistently found negative effects.^{24–27} Yet, the overall literature on SNS observes both positive and negative effects on well-being.²⁸ A recent review has thus called for a differentiation between benign and malicious envy as this may “shed light on the conflicting findings concerning SNS use.”^{4(p47)} Indeed, a

study by Lin and Utz²⁹ found that Facebook postings elicited much stronger benign than malicious envy.^{10,29} Thus, while SNS can certainly elicit malicious envy, benign envy, in comparison, may be the much more common emotional reaction towards friends' postings on SNS such as Instagram. It appears plausible then that social comparisons in the positive, self-optimized, yet ultimately mundane visual network culture of Instagram can elicit both benign as well as malicious envy. Accordingly, we assume the following:

H3: Nondirectional social comparison on Instagram will be positively related to (a) benign envy and (b) malicious envy on Instagram.

Turning to the role of envy as a driver of inspiration, benign envy as a benevolent assimilative emotion should sensitize an individual for information on how to become similar to a comparison target and thus facilitate the experience of being inspired. Malicious envy as a contrastive emotion, in turn, should decrease the likelihood of such motivating inspiration experiences.^{15,30} Thus, we assume the following:

H4: (a) Benign envy will be positively and (b) malicious envy will be negatively related to inspiration on Instagram.

Since we expect a positive direct effect of social comparison on inspiration (H1), positive relationships between social comparison and benign and malicious envy (H2), and opposing relationships between benign versus malicious envy on inspiration (H3), we state the following mediation hypotheses:

H5a: Nondirectional social comparison will have a positive indirect effect on inspiration via benign envy on Instagram.

H5b: Nondirectional social comparison will have a negative indirect effect on inspiration via malicious envy on Instagram.

Finally, previous research has consistently found two individual differences, self-esteem and narcissism, to influence how individuals use SNS and how they process other users' social information.^{2,18,31,32} Both traits have also been identified as crucial personality variables for the effects of social comparison^{5,13} and envy.²⁹ We thus include them, together with age and gender, as controls in our research model.

Methods

Participants and procedure

A total of 385 German-speaking Instagram users were recruited in late 2016 through postings on Facebook and Instagram profiles as well as in public Facebook groups and via personal messages. The study was promoted as a study about "Instagram use," avoiding any positive or negative connotation. Having an Instagram account was mandatory to participate.

Participants were aged 18–52 years ($M = 22.64$; $SD = 4.00$), predominantly highly educated (77 percent students), female (82 percent), and reported frequent Instagram usage, with 89 percent using it at least once a day. The sample approximates results of a 2015 representative survey of German SNS users,³³ where 14–29-year-olds made up 70 percent of all Instagram users. Fourteen to 29-year-olds also predominantly

used Instagram daily (71 percent) and daily users between 14 and 29 were twice as likely to be female than male.

Measures

All items included in this study were measured on five-point Likert scales anchored at 1 ("strongly disagree") and 5 ("totally agree"). For means, SDs, internal consistencies, and zero-order correlations, see Table 1.

Social comparison. We measured social comparison intensity on Instagram with two items from the Facebook Social Comparison Scale¹⁶ adapted to Instagram. Of the six original items, we included only the two items assessing *nondirectional* comparison [e.g., "When I am using Instagram, ..." (a) "...I pay a lot of attention to how I do things compared to how others do things" and (b) "...I want to find out how well I do things compared to others"]. The other four items already predetermined positive or negative outcomes of downward or upward comparison, respectively, and were thus omitted.

Malicious and benign envy. To measure malicious and benign envy, we used the scale by Lange and Crusius.¹⁰ The original scale consists of five items for malicious and benign envy each, which we adapted to assess emotional experiences during typical Instagram use (e.g., "Seeing other people's achievement on Instagram makes me resent them" for malicious envy and "When I envy others on Instagram, I focus on how I can become equally successful in the future" for benign envy).

Inspiration. We used the four-item Inspiration Scale⁸ to measure participant's intensity of inspiration on Instagram. While two items asked how strongly users experience inspiration on Instagram (e.g., "When I am on Instagram, I experience or encounter things that inspire me"), two additional items referred to inspiration specifically derived from other users' photos or videos (e.g., "When I am on Instagram, I am inspired by the posts of other users to do something [new]").

Positive and negative affect. We used a 10-item short-version of the PANAS to assess positive and negative affect.³⁴ Participants were asked to report how intensely they had experienced different affective states (e.g., excited, determined, distressed, afraid) during the last week.

Trait narcissism and trait self-esteem. We measured these control variables using 10-item versions of the two most commonly used scales, the Narcissistic Personality Inventory³⁵ and the Rosenberg Self-Esteem Scale.³⁶

Results

Exploratory analyses

On the five-point scales used in this study, participants reported substantial levels of inspiration on Instagram ($M = 3.62$, $SD = 1.04$) and higher levels of benign ($M = 2.16$, $SD = 1.00$) than malicious envy ($M = 1.44$, $SD = 0.69$). Moreover, inspiration showed significant zero-order relationships with most of the other investigated constructs (Table 1).

TABLE 1. MEANS, STANDARD DEVIATIONS, INTERNAL CONSISTENCIES (CRONBACH'S α), AND ZERO-ORDER CORRELATIONS FOR STRUCTURAL EQUATION MODELING VARIABLES

Variable	M	SD	α	1	2	3	4	5	6	7	8	9	10
1. Nondirectional social comparison on Instagram	2.10	0.97	0.74	—									
2. Malicious envy on Instagram	1.44	0.69	0.87	0.35***	—								
3. Benign envy on Instagram	2.16	1.00	0.89	0.46***	0.38***	—							
4. Inspiration on Instagram	3.62	1.04	0.93	0.14**	0.00	0.34***	—						
5. Positive affect	3.21	0.71	0.70	-0.04	-0.08	0.01	0.16**	—					
6. Negative affect	2.09	0.74	0.72	0.09	0.17**	0.02	-0.11*	0.10	—				
7. Trait self-esteem	4.09	0.63	0.85	-0.24***	-0.23***	-0.15**	0.11*	0.25***	-0.31***	—			
8. Trait narcissism	2.93	0.67	0.81	0.06	0.10*	0.17**	0.02	0.16**	-0.01	0.35***	—		
9. Age	22.64	4.00	—	-0.11**	-0.12*	-0.14**	-0.06	0.01	0.02	0.10	0.10	—	
10. Gender	—	—	—	-0.03	-0.07	-0.05	0.08	0.00	0.07	-0.06	-0.24***	-0.19***	—

Note. Based on $N=385$ participants and two-tailed significance tests. All scales are five-point Likert-scales with high values representing high levels of the respective construct. All scales, except the personality traits and affect, were assessed with respect to participants' "typical Instagram usage." Positive and negative affect were measured with respect to participants' "feelings in the last week." Gender is coded as 0 = male, 1 = female. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Testing the hypothesized model

We thus continued our analysis and tested hypotheses with structural equation modeling (SEM) using the *R* package *lavaan* (version 0.5-23.1097).³⁷ All constructs (see H1–H5) were treated as latent variables. The overall measurement model (i.e., without any structural paths) showed an adequate fit [$\chi^2(961)=1,826.558, p < 0.001; \chi^2/df=1.900$, comparative fit index, CFI=0.890; root-mean-squared error of approximation, RMSEA=0.048 (90 percent confidence interval, CI: 0.045–0.052); SRMR=0.062].

However, since the CFI was below 0.900,³⁸ we implemented changes suggested by modification indices and included covariances between some of the error terms of items measuring the controls, narcissism and self-esteem. Likewise, self-esteem and narcissism as well as malicious and benign envy were allowed to covary. This improved the measurement model to a satisfying level [$\chi^2(957)=1,622.237, p < 0.001; \chi^2/df=1.695$, CFI=0.916; RMSEA=0.042 (90 percent CI: 0.039–0.046); SRMR=0.061]. The structural model tested hypotheses based on this modified measurement model. Moreover, we controlled for the variance explained by age, gender, trait narcissism, and trait self-esteem in all model constructs (see H1–H5).

The SEM (Fig. 1) showed an adequate fit to the data [$\chi^2(1,043)=1,751.376, p < 0.001; \chi^2/df=1.679$, CFI=0.911; RMSEA=0.042 (90 percent CI: 0.039–0.046); SRMR=0.062]. Results of the SEM and our mediation analysis revealed that social comparison did not have a significant *direct* relationship with inspiration ($\beta=0.03, p > 0.05$), but showed a significant *total* relationship ($\beta=0.21, p < 0.01$), suggesting full mediation via envy (see H5). Based on this significant overall relationship, we accept H1. As expected in H2a and H2b, inspiration on Instagram was positively related to positive affect ($\beta=0.17, p < 0.01$) and showed no significant relationship with negative affect ($\beta=-0.09, p > 0.05$). Confirming H3a and H3b, social comparison was positively related to both benign ($\beta=0.50, p < 0.001$) and malicious envy ($\beta=0.31, p < 0.001$). As predicted in H4a, benign envy was positively related to inspiration ($\beta=0.44, p < 0.001$). However, the negative relationship between malicious envy and inspiration was only marginally significant ($\beta=-0.11, p=0.09$), leading to a rejection of H4b.

We continued by investigating whether benign and malicious envy mediated the relationship between social comparison and inspiration (H5a and H5b). Significance of indirect relationships was tested with 5,000 bias-corrected bootstrap subsamples on a 95 percent CI. In line with H5a, social comparison showed an indirect relationship with inspiration via benign envy ($\beta=0.22, p < 0.001, LLCI=0.166, ULCI=0.422$). The indirect relationship with inspiration via malicious envy did not reach significance ($\beta=-0.03, p > 0.05, LLCI=-0.106, ULCI=0.003$). Consequently, H5b was rejected.

Supplementary analyses

Since the paths between social comparison to benign envy, inspiration, and positive affect all reached significance, we tested a serial mediation that considered these paths simultaneously. Indeed, we found the relationships between social comparison and positive affect to be mediated through benign envy and inspiration ($\beta=0.04, p < 0.05, LLCI=0.004, ULCI=0.061$). The serial mediation from social comparison

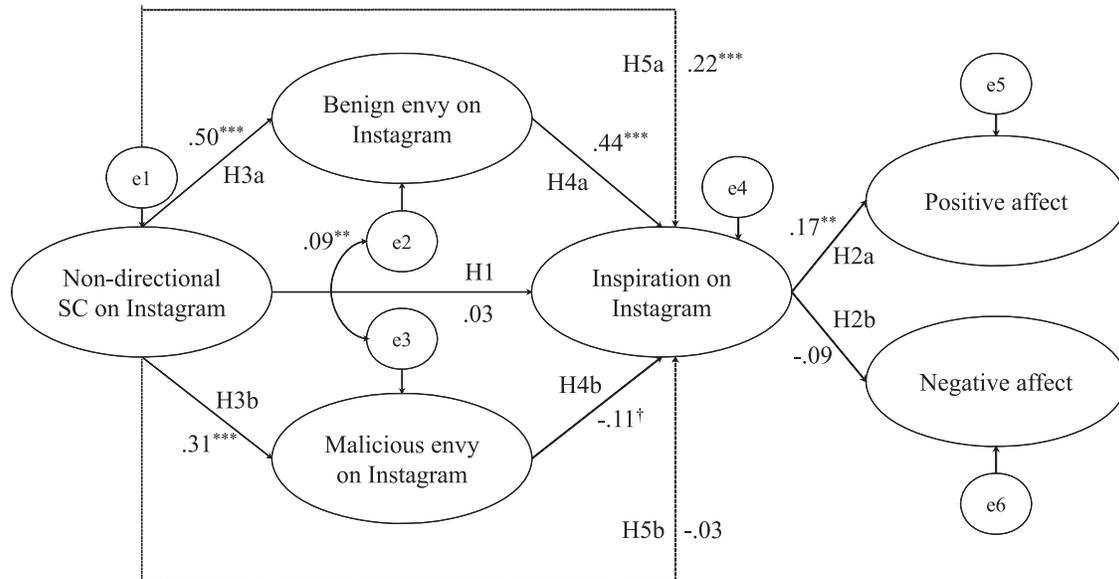


FIG. 1. Structural equation model of the hypothesized relationships (H1–H5), with age, gender, trait narcissism, and trait self-esteem as controls. *Note.* Observed structural equation model based on data from $N=385$ participants. Fit indices are $\chi^2(1043) = 1751.376, p < 0.001; \chi^2/df = 1.679; CFI = 0.911; RMSEA = 0.042$ (90% C.I.: 0.039, 0.046); $SRMR = 0.062$. Scores in the figure represent standardized path coefficients. In all latent constructs, we controlled for variance explained by age, gender, trait narcissism, and trait self-esteem (not displayed for sake of clarity). Significance of indirect effects was tested with 5000 bias-corrected bootstrap sub-samples on a 95% confidence interval. † $p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001$. SC, social comparison.

through malicious envy and inspiration on negative affect, however, was not significant ($\beta = 0.00, p > 0.05, LLCI = -0.001, ULCI = 0.008$). Integrating both serial mediations into the model did not change any of the relationships reported in Figure 1.

Discussion

Summary and contribution

The present study investigated whether social comparisons on the popular picture- and video-sharing SNS Instagram can also be beneficial for users’ well-being by facilitating the motivational experience of inspiration. Overall, we contribute to the literature on SNS and well-being in four ways: First, our results provide clear evidence for a link between social comparison and inspiration on Instagram. Crucially, we observed a significant relationship between social comparison and inspiration, which was found to be fully mediated by benign envy, an emotional outcome of assimilative upward comparisons.

Second, increased inspiration on Instagram was related to higher levels of positive affect. In line with general inspiration research,^{9,22} this underlines the positive well-being outcomes that Instagram users can derive from experiencing increased approach motivation in the form of inspiration. The present study thus suggests that users can improve the short-term affective outcomes of their Instagram usage by following content that inspires them to pursue new and personally interesting activities (e.g., traveling, sports, cooking), akin to, for example, reading special interest magazines.

Third, while our results show that malicious envy seems to be largely irrelevant for the level of inspiration that users associate with Instagram, our findings do not refute that malicious

envy can negatively affect well-being, as consistently found in previous studies.^{24,27} Yet, we would not have been able to detect the positive relationship between envy and inspiration had we only investigated malicious envy, as previous studies have. In the broader context of research on social comparison and envy on SNS, this underlines the need to approach psychological processes more comprehensively—that is, including a potential positive side—when assessing the supposedly detrimental effects of user engagement with SNS on well-being.

Finally, by focusing on Instagram, we contribute to SNS research beyond Facebook. It can be assumed that the positive experience of inspiration results from Instagram-specific visual content as well as Instagram’s particular functionality (e.g., searching and browsing via content- or location-specific hashtags). Other SNS (e.g., Pinterest vs. Facebook) might evoke similar or different outcomes, respectively, due to their distinct content and design properties. Our study thus underlines the need to differentiate between SNS when investigating their role for well-being.

Limitations and future research

While the present study advances previous research on SNS and well-being, it certainly comes with limitations. First, the analysis is limited by the cross-sectional nature of our data. Results should not be mistaken for causal evidence. Second, although we investigated a large dataset from $N = 385$ Instagram users, our convenience sample consisted of mostly young, highly educated, and female participants who frequently used Instagram. Even though these skewed distributions are somewhat reflective of German Instagram users,³³ the considerable bias in our sample as well as the nonrandom sampling procedure limit interpretations of our results to the investigated data.

Future SNS research on the effects of social comparison and envy can build on this study in numerous ways. For instance, our study did not incorporate several important moderators of social comparison processes on SNS, such as tie strength,²⁹ the amount of strangers that users follow,¹ or the attainability of comparison standards.⁶ Comparing the inspirational effects of postings from strong versus weak tie users who depict their successes with “hubristic pride” rather than humility may be a worthwhile task for future research.⁴ Moreover, assessing whether social comparison and envy can have similar beneficial effects on other SNS (e.g., Pinterest or Facebook) remains a pressing task.

Since our results refer to inspiration derived from *overall* Instagram use, it seems particularly important for future research to distinguish between inspiration derived from different Instagram contents. For example, “fitspiration” imagery has been linked to lower body image and mood among female undergraduates when compared to travel imagery.³⁹ Thus, there might also be a dark side to inspiration derived from certain contents on SNS. Nonetheless, results of our study point to a positive association between *overall* Instagram inspiration and affective well-being.

Conclusion

In conclusion, results of this study indicate that mundane forms of Instagram use can provide users with new ideas and impulses, potentially motivating them to transcend their current selves and strive for self-improvement. We found a positive association between such “Instagram inspiration” and users’ affective well-being and further identified a relevant psychological mechanism driving inspiration: Benign envy as an emotional outcome of assimilative upward comparisons sensitizes individuals for social information on how to self-improve and close up to their peers, hence, facilitating inspiration. To complete the picture of the effects of SNS on well-being, future research will thus benefit from investigating not just the negative but also the positive side of social comparisons and envy on SNS.

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Address correspondence to:

Adrian Meier
 Department of Communication
 Johannes Gutenberg University of Mainz
 Jakob-Welder-Weg 12
 Mainz 55099
 Germany

E-mail: meier@uni-mainz.de