

# How Social Media Algorithms Shape Offline Civic Participation: A Framework of Social-Psychological Processes

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## Abstract

Even though social media platforms have created opportunities for more efficient and convenient civic participation, they are unlikely to bring about social change if the online actions do not propagate to offline civic participation. This article begins by reviewing the meta-analytic evidence on the relation between social media use and offline civic participation. Following this discussion, we present a theoretical framework that incorporates the attitudinal, motivational, and relational processes that may mediate the effect of social media use on offline civic participation. The framework highlights how social media algorithms may shape attitudes on important societal issues, promote generalized action goals among habitual users, and build social capital. We further discuss factors that may strengthen or undermine each of these processes, suggest ways to design and implement algorithms that may promote offline civic participation, and propose questions for future research.

## Keywords

social media, algorithm, civic participation, activism, action

Many contemporary social movements have been curated on social media. For example, although the Occupy Wall Street protests against economic inequality rarely appeared in legacy media in its early days, the movement attracted 4,300 Twitter mentions on its first day and soon produced an average of 10,000 to 15,000 posts an hour (DeLuca et al., 2012). Likewise, within just 24 hr of its first post, the #MeToo movement generated 53,000 tweets and retweets discussing personal experiences of sexual violence, drastically sparking the public's interest in sexual harassment (Kaufman et al., 1991). This fast diffusion suggests that, with minimal effort, cost, and risk, social media can enable fast dissemination of user-generated activism within wide-reaching social networks (Milan, 2015). People no longer need to put up flyers, secure financial resources, or coordinate mass gatherings to promote and support a cause, suggesting an immense potential of social media to enable grassroots movements without formal structures or organizations.

Nonetheless, social media activism is insufficient to produce real social change if it exists only online. People can discuss and express support for social issues online however much they want, but unless they are

able to actualize their values into real-world behavior, such as voting in elections and donating or volunteering for social causes, change will be limited. Online and offline activism must therefore go hand in hand for societal and structural change to flourish. To this end, numerous studies have investigated the relation between online and offline activism. Much of this focus has been on whether people's social and digital media use as well as participation in online activism affect subsequent offline political and civic participation.

One important limitation of the current literature, however, is that most evidence is correlational, which prevents inferences about causality and fails to provide an understanding of the social-psychological mechanisms by which social media technologies may affect offline activism. Moreover, important gaps remain in our theorizing about the psychological impact of social

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media algorithms, which we define as built-in functions that shape how users consume content, act online, and interact with others. For example, do social media algorithms moderate offline civic participation by curating the information users receive? Do the algorithms affect offline civic participation by eliciting seemingly minor actions such as liking and sharing posts? How do social media algorithms influence the type of networks people create, and what is their role in motivating offline civic participation? Furthermore, under what circumstances and for which users do social media algorithms strengthen or undermine their motivation for offline civic participation? This article highlights these important social-psychological questions by discussing the relevant literature on formation and change of social attitudes and behaviors, proposing potential mechanisms based on existing social-psychological theories and offering theoretically informed suggestions for using social media algorithms to motivate offline civic participation. We also suggest several avenues for future research that may advance our understanding of the interplay between social media algorithms and offline civic participation.

### **The Relation Between Social Media Use and Offline Civic Participation**

Given the salience of social media on highlighting and spreading awareness of social issues including economic inequality, reproductive rights, racism, and climate change, numerous works have gauged the magnitude of this impact and asked whether social media use translates into offline social and political activism (Lee & Hsieh, 2013; Schumann & Klein, 2015).

On the one hand, some scholars have criticized social media activism as *slacktivism* or *clicktivism* (Cabrera et al., 2017). People may be willing to change their profile photos, like a post, or comment to support social causes without doing more (Lee & Hsieh, 2013) or translating their display of public support for a cause into real-life action (Kristofferson et al., 2014). Loosely tied individuals who support similar causes and yet lack formal leadership, structure, and hierarchy may have little identification with the cause or the group, let alone a sense of accountability sufficient to motivate actions offline (Gladwell, 2010).

Another possibility is that low-threshold digital practices such as liking a Facebook group page may substitute offline contributions for that group (Schumann & Klein, 2015) because of at least two reasons. First, online participation may provide an opportunity for moral licensing, whereby prior good deeds lift off the burden of future good deeds (for a meta-analysis, see Blanken et al., 2015). Second, as people attach greater value to more effortful actions (Festinger & Carlsmith,

1959), online activism involving little effort may be ineffective in sustaining people's interest and concern on important social issues over time. Nonetheless, many of the studies suggesting negative effects of online activism on offline civic participation have been conducted in controlled laboratory settings (e.g., N. Kim et al., 2023; Sachdeva et al., 2009; Tan et al., 2019) and have typically examined short-term behavioral outcomes, which limits their ability to explain how long-term exposure to and use of social media could influence people's motivation to engage in offline collective actions. Thus, the effects in real-life contexts could be weaker and less long-lasting than these experiments suggest.

In fact, meta-analytic evidence synthesizing decades of work on the association between digital media use and online/offline civic participation paints a different picture. Table 1 summarizes the findings from these meta-analyses. Specifically, Skoric et al. (2016), who analyzed 22 studies of the relation of social media use with online and offline civic participation, found that social media use has moderate positive associations with both online ( $r = .37$ ) and offline ( $r = .33$ ) civic participation. Chae et al. (2019), who analyzed 63 studies examining the relation between Internet use (including social media) and online and offline political participation, found similar results. Internet use had a small to moderate positive influence on both online ( $r = .33$ ) and offline ( $r = .18$ ) political participation, and these associations were stronger for more recent studies (conducted between 2009 and 2014;  $r = .30$ ) than older ones (conducted between 1997 and 2008;  $r = .18-.19$ ). Two meta-analyses (Boulianne, 2020; Boulianne & Theocharis, 2020) examining specific behavioral outcomes (e.g., contacting officials, discussing politics with others, volunteering, and protesting offline) again found a weak but positive relation ( $r = .14$ ) across different countries. However, the correlation between digital media use and offline civic behavior was stronger for more recent studies (correlation between study year and effect size  $r = .32$ ), suggesting that the role of social media activism on motivating similar offline actions has become more prominent over time. All in all, though, the small to moderate effects suggest effects that are likely to occur only under some conditions, creating a need for understanding what processes moderate the associations between online and offline participation.

### **Theorizing About the Social-Psychological Mechanisms of the Influence of Social Media on Offline Civic Participation**

Despite many strengths, the prior empirical evidence has painted an incomplete picture of why the associations between online and offline participation varies

and has been silent on the psychological processes at stake. To this end, we next propose a framework with three psychological mechanisms by which social media and their operating algorithms may enhance people’s motivation to engage in offline civic participation, including (a) curating information, (b) promoting generalized action goals, and (c) building social capital. Figure 1 depicts these psychological processes, which are discussed presently.

Our framework considers multiple pathways through which the social media environment may shape behavioral outcomes in the domain of civic participation, including those that are attitudinal, motivational, and relational. To begin, the types of information people consume on social media are largely curated by social media algorithms, and yet there is a considerable disagreement as to whether social media algorithms limit or diversify users’ information consumption (e.g., Grimes, 2017; Guess et al., 2018). Even more, when or why limiting or diversifying information affects attitudes and offline actions is also unclear. On the basis of findings from a recent systematic review (Lorenz-Spreen et al., 2023) and meta-analysis (Terren & Borge, 2021), we recognize that social media algorithms can expose users to information that confirms and thus strengthens their preexisting attitudes but also provides more opportunities for encountering uncongenial information. The ultimate impact of congenial and uncongenial information depends on the motives of users and whether one considers users’ exposure decision or attention.

Next, we discuss how social media algorithms may affect people’s general motivational state to subsequently influence offline civic participation. Specifically, we propose that social media affordances are programmed to reward actions (e.g., posting, sharing, liking posts) over inactions and may thus instill generalized action goals among habitual users. Low-effort public displays of supporting social causes on social media may in turn increase meaningful offline actions through the established social-psychological mechanisms on action priming, action positivity, and action continuity.

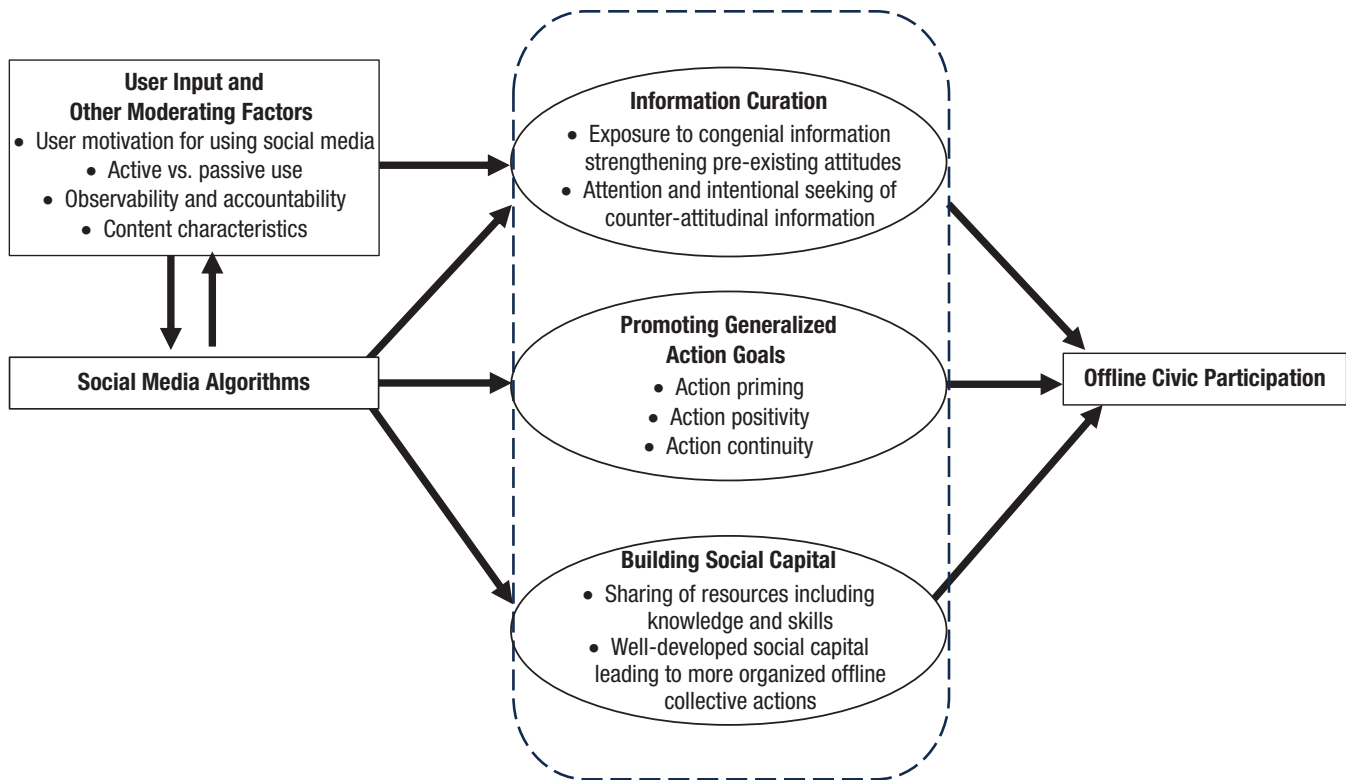
Last, we discuss the relational functions of social media and propose that social media algorithms may build the necessary social capital that lubricates offline civic participation. Specifically, one unique benefit social media environments provide is the ease in which people can build and sustain relationships with other people. The types of relationships people build on social media transcend time and space because they are organized according to shared interests and values instead of shared physical locations. We therefore discuss the processes by which social media affects social capital and consequently offline civic participation.

The three broad routes we propose in Figure 1 are not independent but rather rely on each other. For

**Table 1.** Effect Sizes From Meta-Analyses Examining the Association Between Digital Media Use and Civic (Political, Prosocial) Participation

Effect category	Effect size ( <i>r</i> )
Relation between social media use and online/offline civic participation (Skoric et al., 2016; 22 studies)	
Average coefficient	.37
Coefficient for prosocial participation	.24
Coefficient for political participation	.37
Coefficient for online civic participation	.37
Coefficient for offline civic participation	.33
Coefficient for expressive social media use	.41
Coefficient for informational social media use	.37
Coefficient for relational social media use	.15
Coefficient for reputational social media use	.05
Coefficient for entertainment social media use	.03
Relation between Internet use and civic participation (Chae et al., 2019; 63 studies)	
Average coefficient	.22
Coefficient for social media use	.29
Coefficient for general (nonsocial media) Internet use	.17
Coefficient for online political participation	.33
Coefficient for offline political participation	.18
Coefficient for prosocial participation	.20
Coefficient for informational Internet use	.27
Coefficient for noninformational Internet use	.19
Coefficient for studies conducted between 2009 and 2014	.30
Coefficient for studies conducted between 2003 and 2008	.18
Coefficient for studies conducted between 1997 and 2012	.19
Relation between digital media use and offline civic participation among young adults (Boulianne & Thoecharis, 2020; 106 studies)	
Average coefficient	.14
Coefficient for political digital media use	.20
Coefficient for nonpolitical digital media use	.06
Relation between digital media use and offline civic participation over time and across countries (Boulianne, 2020; 243 studies)	
Average coefficient	.14
Correlation between study year and coefficient	.32

example, algorithms curate information to attract users’ attention and increase the chances that they will act on the information and form connections with others who share similar interests even if they have different attitudes. Furthermore, the actions and social media networks of users provide new input for algorithms to update and optimize how they curate user information. These processes also depend on people’s motivations,



**Fig. 1.** Psychological mechanisms involved in the positive influence of social media algorithms on offline civic participation.

such that people motivated to seek accurate information should be more attentive to curated contents that are uncongenial. Likewise, through social media participation, people with a high need to belong may accumulate more social capital for offline action than people with a low need to belong (Reich & Vorderer, 2013).

### How Social Media Algorithms May Affect Offline Civic Participation Through Curating Information

Forming attitudes about societal issues is the first critical step in people engaging in social actions, and the type of information people consume inevitably influences this process. The emergence of social media substantially expanded the pool of information available to the public and has become a regular source of information for many (Walker & Matsa, 2021), thereby shaping the public opinion on social matters. Nonetheless, because people's capacity to process large amounts of data is limited (Fiske & Taylor, 1991; Halford et al., 2005; Keogh & Pearson, 2017; Marois & Ivanoff, 2005; Mintz et al., 2021), social media algorithms have evolved to curate information for users. As an example, social media algorithms personalize users' newsfeed by recommending information and contents that align with

users' interests and save the time users would otherwise spend to search, identify, and verify information. However, whether this information curation limits or diversifies information consumption has been debated for more than a decade (Dubois & Blank, 2018; Grimes, 2017; Grisham, 2021; Guess et al., 2018; Roberts, 2019), and the ultimate impact of each effect is likely to depend on the goals of the individuals processing information online.

One systematic review and one meta-analysis recently summarized the relevant research and drew conclusions about the impact of social media on users' information consumption. According to Lorenz-Spreen et al. (2023), although social media links users to like-minded others who can thus form homogeneous social clusters (see Cota et al., 2019; Guerrero-Solé & Lopez-Gonzalez, 2019; Koironen et al., 2019), they also diversify users' newsfeed and information exposure (see Fletcher & Nielsen, 2018; Strauß et al., 2020; Yang et al., 2020). Similarly, a meta-analysis by Terren and Borge (2021) found that although studies using digital trace data show that social media present predominantly congenial information (see Bessi et al., 2016; Williams et al., 2015), studies relying on self-report measures show that users often report seeing uncongenial information (see Dubois & Blank, 2018; Hampton et al.,

2011). Together, the relevant evidence suggests that social media algorithms can reinforce users' current interests through personalized curations while simultaneously providing opportunities for diverse information consumption. This combination of factors, we argue, may potentially benefit offline civic participation.

### ***Exposure to congenial information that strengthens preexisting attitudes***

Most current recommendation algorithms are designed to link users to contents that match their interests. Therefore, it is not surprising that social media users are predominantly exposed to congenial information on social media platforms (see Bessi et al., 2016; Williams et al., 2015). Although social media algorithms that increase exposure to congenial information are often blamed for negative biases and political polarization (Ali & Eriyanto, 2021; Stroud, 2010), the same algorithms may also offer some benefits when it comes to promoting offline civic participation. First, social media algorithms allow users to form stronger attitudes by increasing exposure to attitude-confirming information. Stronger attitudes are evaluations held with confidence, supported by a knowledge base, predictive of future behavior, and easier to defend (Howe & Krosnick, 2017; Krosnick, 1989). By definition then, stronger attitudes that trigger polarization may also heighten the determination to act (Luttrell & Sawicki, 2020; Theodorakis, 2016), which is a prerequisite to invest in offline social activism (Wilson & Hill, 2023).

Second, social media algorithms often expose users to other people who share similar interests or pursue similar actions (Kaiser & Rauchfleisch, 2020; Lindström et al., 2021). Knowing others who perform similar behavior can promote political actions by increasing political efficacy, which is the belief that the group's actions can succeed at changing political outcomes (C. Chen, Bai, & Wang, 2019; Velasquez & LaRose, 2015). Last, social media algorithms provide users with more opportunities to express their attitudes and receive positive social feedback within a homophilic environment. Repetitive expression of attitudes often increases public commitment to an action and thus strengthens attitudes and intentions to execute the actions (Downing et al., 1992; Fazio, 2020; Fazio & Sherry, 2020; Tesser et al., 1995). Positive social feedback about an action can also make people evaluate the action even more positively (Carr et al., 2018), feel happier and more satisfied with the action (Zell & Moeller, 2018), and become more likely to repeat the action in the future (Lindström et al., 2021). All in all, the online environment operated by computer algorithms that promote

congenial information is likely to reinforce attitudes and intentions for offline actions, in which users receive attitude-confirming information, are linked to similar others, and rewarded for expressing personal attitudes. Thus, an abundance of congenial information may increase users' motivation to engage in behaviors that are consistent with users' attitudes.

The degree to which exposure to congenial information strengthens behavioral enactment should also depend on the motivations of social media users. In particular, the motivation to defend one's attitudes, which leads to polarization, is stronger for value-relevant issues such as political or religious ones. Accordingly, using social media to read news leads to a stronger and more positive impact on political participation than using social media for entertainment (Chae et al., 2019). Likewise, political uses of social media (e.g., sharing political views online, discussing politics with others, and signing e-petitions) promote offline civic participation more than nonpolitical uses of social media (Boulianne & Theocharis, 2020). Thus, social media algorithms may increase civic participation more for political or religious topics or users chronically interested in those issues.

### ***Attention to uncongenial information***

Even though algorithms generally promote exposure to congenial information (see Bessi et al., 2016; Williams et al., 2015), people who consume online news actually attend more to uncongenial content (Fletcher & Nielsen, 2018). Moreover, because social media algorithms often pair relevant extremist content with counter-messages, people may receive counter-messages even when they actively seek congenial information (Schmitt et al., 2018). Such incidental exposure to uncongenial information can increase users' correct knowledge about civic and political issues (Allcott et al., 2020; Kleinberg & Lau, 2021), in turn increasing their interest in (Moeller et al., 2018) and motivation for (Bond et al., 2012; Lelkes, 2020) constructive political actions.

As shown in Figure 1, even though information curation can increase incidental exposure to congenial information, attention and intentional information searches are likely to favor uncongenial information. To begin, even when people who are motivated to defend their attitudes seek congenial information, they pay greater attention to uncongenial information. They also seek uncongenial information when they are motivated to hold accurate attitudes (Hart et al., 2009). For example, for issues that elicit accuracy motivation, such as science or health, social media users may actively

seek and find diverse information that could change their attitudes and ultimately the course of their offline actions. In such situations, because social media algorithms learn users' information-seeking habits (Berman & Katona, 2020), interest in uncongenial information should promote future presentation of uncongenial information.

Whether exposure to uncongenial information produces activism is not a simple question because the impact of information depends on people's reaction to it. People exposed to uncongenial information may still experience attitude polarization because they critically scrutinize counterattitudinal information (Dawson et al., 2002; Ditto et al., 1988; Druckman & Bolsen, 2011; Lord et al., 1979; Slothuus & De Vreese, 2010). Thus, a social media user may form stronger attitudes after using social media simply because they downplay any uncongenial information they encounter. Alternatively, users may actually change their minds and eventually support or cease to support a cause offline.

### **How Social Media Algorithms May Affect Offline Civic Participation Through Promoting Generalized Action Goals**

Social media algorithms curate information, but curations cannot be done without prior user input. Algorithms need data on what contents users click, like, comment, and share, as well as with whom users connect and interact, to continuously personalize user content and recommendations. Hence, because the operating mechanisms of social media algorithms rely on users' prior actions, social media platforms are typically designed to motivate and sustain actions through predefined tools that enable people to easily express emotions, exchange messages, and share information with just a few clicks (Gerlitz & Helmond, 2013). In this way, social media not only serves as a gateway for receiving new information but also to readily act on it by discussing information, disseminating posts, and creating social circles of like-minded others. We therefore propose that social media and their algorithms may reinforce the link between online and offline actions by promoting generalized action goals personalized to each individual user. The various mechanisms associated with promoting generalized action goals appear in the middle of Figure 1 and involve action priming, action positivity, and action continuity.

#### ***Action priming***

Environmental cues can effectively shape our behaviors through goal priming (Chartrand & Bargh, 1996; Dai et al., 2023; Weingarten et al., 2016). For example,

encountering cues related to action (e.g., words such as *do* and *press*) or inaction (e.g., words such as *rest* or *sleep*) can instill general action or inaction goals that guide the amount of motor or cognitive effort people put in upcoming behaviors (Albarraçín et al., 2008, 2011). Specifically, action primes have been shown to promote faster behavioral responses, greater consumption of food, more idea generation, and more persistence on challenging tasks (Albarraçín et al., 2008; Weingarten et al., 2016). Social media are similarly filled with action cues, as only observable actions taken by their users can be seen and prompt responses by other users. For example, Facebook or Instagram sends notifications when a friend takes some action (e.g., creating a new post, liking your post, sending you a message) but not when a friend remains inactive. Similarly, social media encourage reading, liking, and commenting rather than abstaining from bullying other users (Giumetti & Kowalski, 2022; Whittaker & Kowalski, 2015). Hence, social media users, who are regularly presented with personalized action cues, may adopt a generalized action goal, especially when they habitually use social media. These high-level, general action goals may then instill lower level and individual-specific action goals, such as participating in an offline protest on a matter important to them. To illustrate, the use of more active language on social media has been shown to be associated with lower HIV rates in U.S. counties (Ireland et al., 2016), suggesting that general actions goals can be conducive to taking more proactive steps in offline contexts. Nevertheless, the degree to which these action cues instill lower level specific offline action goals remains unclear and needs empirical research.

#### ***Action positivity***

People tend to associate actions with positivity, such that they generally evaluate actions more positively than inactions, consider actions as being more intentional than inactions, and expect actions to bring about more positive outcomes than inactions (Albarraçín et al., 2019). These differences occur even for trivial actions such as pressing a button or flipping a switch and in the absence of knowledge about the outcomes of those behaviors (Dai et al., 2023; Sunderrajan & Albarraçín, 2021). In addition, repetitively pressing a key when seeing an object induces more positive attitudes toward the object than not pressing a key in response (Z. Chen, Holland, et al., 2019). All in all, the trivial actions that people perform on social media may increase support for political causes. Initially low-effort engagement such as clicking or commenting on a post may be sufficient to increase people's positive attitudes and promote their engagement on related issues.

Algorithms may further reinforce the association between action and positivity by recommending contents that previously engaged users and strengthen positive attitudes. Such a mechanism might be tested by measuring social media users' attitudes and behavioral intentions concerning offline actions immediately after they do and do not perform the low-effort online actions.

### **Action continuity**

When people form positive attitudes toward their past actions, these attitudes can also guide future behaviors (Albarracín & Wyer, 2000) by eliciting biased scanning (Janis & King, 1954) and self-perception processes (Bem, 1967, 1972). People rationalize their past actions by generating detailed thoughts about the reasons for doing so when they have the ability and motivation to think about their behavior or simply infer that they like the behavior they performed even in the absence of cognitive ability and motivation (Albarracín & Wyer, 2000). In fact, the influences of behavior on attitudes have been demonstrated in several domains, including physical activity (Wang & Zhang, 2016), sexual behavior (Turchik & Gidycz, 2012), gambling (Dahl et al., 2018), and prosociality (Ferguson & Bibby, 2002; Hamid & Cheng, 1995). For example, past environmentally friendly behaviors (e.g., buying eco-friendly products, attending ecology-related meetings) have a direct and independent influence on future environmentally friendly behaviors (Hamid & Cheng, 1995). Similarly, having signed an online petition for racial justice may promote participation in an offline Black Lives Matter protest.

Action continuity is partly driven by self-consistency motives, as people strive to maintain a consistent view of themselves (Swann, 1990; Spencer-Rodgers et al., 2009). Specifically, unless people have external reasons for engaging in a particular behavior (e.g., getting paid a large sum of money to execute a behavior), they often infer internal attitudes and beliefs from their actions (Bem, 1967; Swann, 1990). A case in point is the foot-in-the-door effect, whereby accepting a smaller and low-effort request can increase the acceptance of larger and high-effort requests in the future (Burger & Guadagno, 2003; Souchet & Girandola, 2013). Likewise, social media algorithms may create personalized opportunities to act with minimal effort and risk, and these actions may in turn facilitate higher effort and riskier behaviors. Accordingly, the gateway effect of online activism suggests that social media activism can be a critical gateway for younger people to build awareness, learn the importance of civic engagement, and develop their identities as engaged civilians (Y. Kim et al., 2017; Middaugh et al., 2017). Future studies should empirically test whether

these outcomes of simple actions may then fuel motivation for offline actions and whether self-perception and biased scanning are at play.

Of course, the magnitude to which social media algorithms promote generalized action goals may depend on several factors, including whether people use social media actively or passively. When people passively use social media, the algorithms lack sufficient input to generate actionable items personalized to each user, and users may participate less both online and offline. Indeed, users who actively consume information, expand social networks, and share opinions are more likely to also participate in offline political actions than users who do not (Smith, 2013; Yu, 2016). Furthermore, platforms with more actionable functions, including tools that enable people to express their thoughts and feelings in more diverse manners (e.g., personalized interface, emojis) may promote action goals more than platforms that lack such tools. Although there has been some work on how active versus passive social media use is associated with offline civic participation, future work should explore these nuanced questions.

### **How Social Media Algorithms May Affect Offline Civic Participation Through Building Social Capital**

Even when people form strong attitudes about a social cause and are motivated to take action in support of or against the cause, the implementation of offline collective action may depend on having the relevant social capital. Social capital refers to social networks built on shared norms and trust (Carbone, 2019; Putnam, 2000) and enables people to effectively share and disseminate benefits, whether in the form of knowledge, resources, or skills, within the networks (Ostrom & Ahn, 2009). For this reason, social capital can enhance people's ability to solve collective-action problems. To illustrate, higher levels of social capital in U.S. states are associated with lower crime rates, better health, and greater civic equality (Putnam, 2001). Higher social capital, represented by more bridging and linking within social networks, also heightens collective action toward community development in underprivileged regions of the United States (H.-Y. Kim, 2018).

In many ways then, the most critical element of social media algorithms in enabling activism may be their ability to build the social capital needed to engage in social matters. Social media algorithms have noticeably lowered the barriers to making new social connections (Manago & Vaughn, 2015) and allow people to organize their social circles on the basis of personal interests and preferences (Fang et al., 2014). For example, YouTube's channel-recommendation algorithms

foster a large number of highly homophilous communities in both the United States and Germany (Kaiser & Rauchfleisch, 2020). Frequent interactions with others who share similar values and opinions can build trust and foster a group identity that translates into offline actions that protect and support the values of the collective (Hogg, 2016; Tajfel & Turner, 2004), even in the absence of the formal structures or the hierarchies that typically exist in offline group actions.

In addition to social media algorithms allowing users to form social networks that share interests, social media algorithms can also create heterogeneous social circles through extended networks. For example, young adults who frequently use social media are more likely to communicate with people from different sociodemographic backgrounds and others with different opinions, increasing their social capital in support of their offline civic engagement (Kim & Kim, 2022). Similarly, frequent social media use is associated with heterogeneous discussions (Kim et al., 2013) and thus an expansion of interests that can affect offline civic engagement. Thus, social media algorithms can create distant ties that further contribute capital and facilitate action in different domains (Brown & Konrad, 2001; Granovetter, 1973, 1983).

Last, unlike offline behaviors, which are often private, many activities that occur on social media are easily observable to others. Algorithms allow users to see what others in their social circles like, comment on, and share, all in real time. Social media algorithms also highlight content that has received a high volume of user reactions by posting popular content on users' feeds. This social-monitoring function of algorithms may go beyond simply encouraging users to express their views but also to sustain and reaffirm them beyond online contexts. For example, users may post their proof of vaccination or disclose participation in a protest to get support and recognition from their networks. These factors combined may provide an ideal environment for people to build social capital and exchange necessary resources to subsequently engage with societal issues in various forms. In fact, the positive association between social media and social capital has been frequently observed. Specifically, the use of Facebook among seniors is positively associated with bonding social capital through sharing and receiving emotional support (Erickson, 2011). Social media use also leads to more organized efforts to manage shared knowledge through enhanced social capital (Bharati et al., 2015). Finally, frequent users of social media were more willing to engage in social participation when they belonged to well-developed networks (Hwang & Kim, 2015).

Several factors could contribute to the quality of social capital people build on social media, with one

being the type of content shared within the networks. Specifically, emotional content tends to spread more rapidly and widely among people than nonemotional content. For example, legacy media with emotional content are more likely to be shared across cultures and languages (Berger & Milkman, 2012; Guerini & Staiano, 2015). Similarly, on social media, emotional content is more likely to be shared than nonemotional content (Hansen et al., 2011; Heimbach et al., 2015) in a variety of areas, including sensitive social topics such as gun control, same-sex marriage, and climate change (Brady et al., 2017, 2020). Indeed, information conveying emotions may be considered as being more diagnostic of immediate changes or threats in an environment and therefore capture people's attention more, especially when they convey negative emotions such as anger or fear (Pessoa, 2009; Tannenbaum et al., 2015). Regardless of the valence, sharing of emotions also contributes to more bonding of interpersonal relationships (Fischer & Manstead, 2008; Peters & Kashima, 2007), producing tighter social networks online. In this regard, the more emotional content consumed and shared within social media networks may be more beneficial in creating more tightly knit social capital, thereby increasing the likelihood that people would take more actions, including those that are offline, to express and protect the values shared by one's group. Thus, extending the current literature on the association between sharing of emotions and information diffusion, future work could also explore how the level of emotions and the type of emotions shared among networks on social media affect subsequent offline actions and why.

Accountability is also an important factor determining social capital. Specifically, collective actions can go awry when the responsibility to take action is diffused among group members (Martin & North, 2015), when members free-ride on others' efforts (Shiue et al., 2010), and when people do not feel that their impact is noticeable (Gram et al., 2019). Because these factors are present in situations that favor anonymity and decrease commitment to the group, there are clear limits to the potential for social media networks to sustain civic participation. Indeed, social media networks are often fluid because users can freely join and leave circles without strings attached and accountability is low. However, future research may ascertain whether structures that mimic the structure of offline networks can increase civic participation, particularly in the long run.

## Final Note and Future Directions

Despite interest in the influence of social media on civic participation (Boulianne, 2020; Skoric et al., 2016), the current literature has lacked a comprehensive theory



of psychological mechanisms as well as empirical tests of the psychological processes at play. Thus, the main goal of this article was to provide a theoretical framework that can explain how social media and their algorithms influence offline civic participation and when. In doing so, we aimed to provide novel insights that could encourage future empirical work on this topic.

Our analysis focused on three processes: curating information that can shape people's attitudes and values, instilling action goals that motivate people to act, and building relevant social resources to implement offline collective actions. According to our framework, at work is a combination of exposure to congenial information and social circles that reaffirm and strengthen prior attitudes, attention and intentional seeking of uncongenial information and social circles that diversify people's interests and build relevant social capital, and social media structures that reward and reinforce active participation in discussions. Importantly, however, the user's goals and online habits matter, and these factors still depend on the users' motivations to defend their attitudes and beliefs, form accurate beliefs, and be socially integrated (Albarracín, 2020).

It may seem like a paradox that social media and their algorithms can reinforce people's existing attitudes while also diversifying their information pool. However, as suggested by a recent systematic review (Lorenz-Spreen et al., 2023) and meta-analysis (Terren & Borge, 2021), such effects are not contradictory and can indeed coexist. Humans have inhabited environments with de facto congenial information way before the advent of social media and their algorithms (see Dahlgren, 2019; Dubois & Blank, 2018; Fletcher et al., 2021; Garrett, 2013; Gentzkow & Shapiro, 2011; Guess et al., 2018; Sears, 1968), but social media afford more opportunities to encounter, seek, and pay attention to uncongenial information not available in other environments.

Our analysis nonetheless has several limitations. Although it relies on established psychological theories, it does not necessarily reflect empirical findings, and thus several mechanisms outlined in this article need to be examined in future work. For example, no work has examined how social media use influences people's generalized action goals, specifically whether people who more frequently use social media have more action-oriented goals than people who do not. In addition, no work has examined whether the emergence or popularity of social media has increased general action goals in society, which inevitably has implications for civic participation. Likewise, although past research has considered how online social networks influence activism, future work could examine whether different structures of online social networks are more or less conducive to motivating and sustaining civic participation than others.

Furthermore, this article did not consider different types of civic participation because it may include both political and nonpolitical ones. Some collective actions can even be antidemocratic rather than civic, as is the case when they propagate extremist beliefs or insurrections. The aim of this article was to propose possible mechanisms underlying the variable association between social media use and offline civic participation found in recent empirical studies and meta-analyses (e.g., Chae et al., 2019; Skoric et al., 2016). Distinguishing between civic and antidemocratic participation or exploring the potential mechanisms of antidemocratic actions is beyond the scope of this article (Cnaan & Park, 2016; Dixon & McKeown, 2021). However, given the importance and practical relevance of this topic, we look forward to future work on the specific impact of social media algorithms on actions that undermine democratic regimes.

Last, social media platforms do not operate on unified algorithms because different platforms program their algorithms differently. Therefore, future research should examine whether certain algorithms are more beneficial in motivating civic participation. Most social media algorithms are currently designed to filter out information that falls below a utility threshold for individual users to avoid presenting irrelevant information. With such algorithms, users will see information only if they expressed interest in it through likes, comments, and shares, possibly leading them to consume congenial information only. For example, if an algorithm presents liberal users with exclusively liberal content and conservative users with exclusively conservative content, then this algorithm could easily limit the heterogeneity of information, which may hurt civic participation. One alternative is to exclude content that falls below a threshold of a minimum acceptable quality to thus avoid displaying low-quality information. For example, if an algorithm excludes low-quality articles and channels equal proportions of high-quality liberal and conservative content, then high quality and diversity of information will both be preserved. Examining the impact of these different types of algorithms on how people consume information and make civic decisions warrants attention in future work.

## Transparency

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*Author Contributions*

H. Jung and W. Dai contributed equally to this article and should be considered joint first authors. All of the authors approved the final manuscript for submission.

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### References

- Albarracín, D. (2020). Conspiracy beliefs: Knowledge, ego defense, and social integration in the processing of fake news. In *The psychology of fake news: Accepting, sharing, and correcting misinformation* (pp. 196–219). Taylor & Francis. <https://doi.org/10.4324/9780429295379-14>
- Albarracín, D., Handley, I. M., Albarracín, D., & Handley, I. M. (2011). The time for doing is not the time for change: Effects of general action and inaction goals on attitude retrieval and attitude change. *Journal of Personality and Social Psychology, 100*(6), 983–998. <https://doi.org/10.1037/a0023245>
- Albarracín, D., Handley, I. M., Noguchi, K., McCulloch, K. C., Li, H., Leeper, J., Brown, R. D., Earl, A., & Hart, W. (2008). Increasing and decreasing motor and cognitive output: A model of general action and inaction goals. *Journal of Personality and Social Psychology, 95*(3), 510–523. <https://doi.org/10.1037/a0012833>
- Albarracín, D., Sunderrajan, A., Dai, W., & White, B. X. (2019). The social creation of action and inaction: From concepts to goals to behaviors. In J. M. Olson (Ed.), *Advances in Experimental Social Psychology* (Vol. 60, pp. 223–271). Academic Press.
- Albarracín, D., & Wyer, R. S. (2000). The cognitive impact of past behavior: Influences on beliefs, attitudes, and future behavioral decisions. *Journal of Personality and Social Psychology, 79*(1), 5–22. <https://doi.org/10.1037/0022-3514.79.1.5>
- Ali, D. J., & Eriyanto. (2021). Political polarization and selective exposure of social media users in Indonesia. *Jurnal Ilmu Sosial Dan Ilmu Politik, 24*(3), 266–283. <https://doi.org/10.22146/JSP.58199>
- Allcott, H., Braghieri, L., Eichmeyer, S., & Gentzkow, M. (2020). The welfare effects of social media. *American Economic Review, 110*(3), 629–676. <https://doi.org/10.1257/aer.20190658>
- Bem, D. J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review, 74*(3), 183–200. <https://doi.org/10.1037/h0024835>
- Bem, D. J. (1972). Self-perception theory. *Advances in Experimental Social Psychology, 6*(C), 1–62. [https://doi.org/10.1016/S0065-2601\(08\)60024-6](https://doi.org/10.1016/S0065-2601(08)60024-6)
- Berger, J., & Milkman, K. L. (2012). What makes online content viral? *Journal of Marketing Research, 49*(2), 192–205.
- Berman, R., & Katona, Z. (2020). Curation algorithms and filter bubbles in social networks. *Marketing Science, 39*(2), 296–316. <https://doi.org/10.1287/mksc.2019.1208>
- Bessi, A., Zollo, F., Del Vicario, M., Puliga, M., Scala, A., Caldarelli, G., Uzzi, B., & Quattrocioni, W. (2016). Users polarization on Facebook and YouTube. *PLOS ONE, 11*(8), Article e0159641. <https://doi.org/10.1371/journal.pone.0159641>
- Bharati, P., Zhang, W., & Chaudhury, A. (2015). Better knowledge with social media? Exploring the roles of social capital and organizational knowledge management. *Journal of Knowledge Management, 19*(3), 456–475.
- Blanken, I., van de Ven, N., & Zeelenberg, M. (2015). A meta-analytic review of moral licensing. *Personality and Social Psychology Bulletin, 41*(4), 540–558. <https://doi.org/10.1177/0146167215572134>
- Bond, R. M., Fariss, C. J., Jones, J. J., Kramer, A. D. I., Marlow, C., Settle, J. E., & Fowler, J. H. (2012). A 61-million-person experiment in social influence and political mobilization. *Nature, 489*, 295–298. <https://doi.org/10.1038/nature11421>
- Boulianne, S. (2020). Twenty years of digital media effects on civic and political participation. *Communication Research, 47*(7), 947–966. <https://doi.org/10.1177/0093650218808186>
- Boulianne, S., & Theocharis, Y. (2020). Young people, digital media, and engagement: A meta-analysis of research. *Social Science Computer Review, 38*(2), 111–127. <https://doi.org/10.1177/0894439318814190>
- Brady, W. J., Crockett, M. J., & Van Bavel, J. J. (2020). The MAD model of moral contagion: The role of motivation, attention, and design in the spread of moralized content online. *Perspectives on Psychological Science, 15*(4), 978–1010.
- Brady, W. J., Wills, J. A., Jost, J. T., Tucker, J. A., & Van Bavel, J. J. (2017). Emotion shapes the diffusion of moralized content in social networks. *Proceedings of the National Academy of Sciences, USA, 114*(28), 7313–7318.
- Brown, D. W., & Konrad, A. M. (2001). Granovetter was right: The importance of weak ties to a contemporary job search. *Group & Organization Management, 26*(4), 434–462.
- Burger, J. M., & Guadagno, R. E. (2003). Self-concept clarity and the foot-in-the-door procedure. *Basic and Applied Social Psychology, 25*(1), 79–86. [https://doi.org/10.1207/S15324834BASP2501\\_6](https://doi.org/10.1207/S15324834BASP2501_6)
- Cabrera, N. L., Matias, C. E., & Montoya, R. (2017). Activism or slacktivism? The potential and pitfalls of social media in contemporary student activism. *Journal of Diversity in Higher Education, 10*(4), 400–415.
- Carbone, J. T. (2019). Bonding social capital and collective action: Associations with residents' perceptions of their neighbourhoods. *Journal of Community & Applied Social Psychology, 29*(6), 504–519.
- Carr, C. T., Hayes, R. A., & Sumner, E. M. (2018). Predicting a threshold of perceived Facebook post success via likes and reactions: A test of explanatory mechanisms. *Communication Research Reports, 35*(2), 141–151. <https://doi.org/10.1080/08824096.2017.1409618>
- Chae, Y., Lee, S., & Kim, Y. (2019). Meta-analysis of the relationship between Internet use and political participation: Examining main and moderating effects. *Asian Journal of Communication, 29*(1), 35–54. <https://doi.org/10.1080/01292986.2018.1499121>
- Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: Nonconscious goal priming reproduces effects of explicit task instructions. *Journal of Personality and Social Psychology, 71*(2), 230–244. <https://doi.org/10.1037/0022-3514.71.2.230>

- Psychology*, 71(3), 464–478. <https://doi.org/10.1037/0022-3514.71.3.464>
- Chen, C., Bai, Y., & Wang, R. (2019). Online political efficacy and political participation: A mediation analysis based on the evidence from Taiwan. *New Media and Society*, 21(8), 1667–1696. <https://doi.org/10.1177/1461444819828718>
- Chen, Z., Holland, R. W., Quandt, J., Dijksterhuis, A., & Veling, H. (2019). When mere action versus inaction leads to robust preference change. *Journal of Personality and Social Psychology*, 117(4), 721–740. <https://doi.org/10.1037/pspa0000158>
- Cnaan, R. A., & Park, S. (2016). The multifaceted nature of civic participation: A literature review. *Voluntaristics Review*, 1(1), 1–73.
- Cota, W., Ferreira, S. C., Pastor-Satorras, R., & Starnini, M. (2019). Quantifying echo chamber effects in information spreading over political communication networks. *EPJ Data Science*, 8, Article 35. <https://doi.org/10.1140/epjds/s13688-019-0213-9>
- Dahl, E., Tagler, M. J., & Hohman, Z. P. (2018). Gambling and the reasoned action model: Predicting past behavior, intentions, and future behavior. *Journal of Gambling Studies*, 34, 101–118. <https://doi.org/10.1007/s10899-017-9702-6>
- Dahlgren, P. M. (2019). Selective exposure to public service news over thirty years: The role of ideological leaning, party support, and political interest. *International Journal of Press/Politics*, 24(3), 293–314. <https://doi.org/10.1177/1940161219836223>
- Dai, W., Yang, T., White, B. X., Palmer, R., Sanders, E., McDonald, J. A., & Albarracín, D. (2023). Priming behavior: A meta-analysis of the effects of behavioral and nonbehavioral primes on overt behavioral outcomes. *Psychological Bulletin*, 149(1–2), 67–98. <https://doi.org/10.1037/bul0000374>
- Dawson, E., Gilovich, T., & Regan, D. T. (2002). Motivated reasoning and performance on the Wason selection task. *Personality and Social Psychology Bulletin*, 28(10), 1379–1387. <https://doi.org/10.1177/014616702236869>
- DeLuca, K. M., Lawson, S., & Sun, Y. (2012). Occupy Wall Street on the public screens of social media: The many framings of the birth of a protest movement. *Communication, Culture & Critique*, 5(4), 483–509. <https://doi.org/10.1111/j.1753-9137.2012.01141.x>
- Ditto, P. H., Jemmott, J. B., & Darley, J. M. (1988). Appraising the threat of illness: A mental representational approach. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association*, 7(2), 183–201. <https://doi.org/10.1037/0278-6133.7.2.183>
- Dixon, J., & McKeown, S. (2021). Negative contact, collective action, and social change: Critical reflections, technological advances, and new directions. *Journal of Social Issues*, 77(1), 242–257. <https://doi.org/10.1111/JOSI.12429>
- Downing, J. W., Judd, C. M., & Brauer, M. (1992). Effects of repeated expressions on attitude extremity. *Journal of Personality and Social Psychology*, 63(1), 17–29. <https://doi.org/10.1037/0022-3514.63.1.17>
- Druckman, J. N., & Bolsen, T. (2011). Framing, motivated reasoning, and opinions about emergent technologies. *Journal of Communication*, 61(4), 659–688. <https://doi.org/10.1111/j.1460-2466.2011.01562.x>
- Dubois, E., & Blank, G. (2018). The echo chamber is overstated: The moderating effect of political interest and diverse media. *Information Communication and Society*, 21(5), 729–745. <https://doi.org/10.1080/1369118X.2018.1428656>
- Erickson, L. B. (2011, August 4–8). *Social media, social capital, and seniors: The impact of Facebook on bonding and bridging social capital of individuals over 65* [Paper presentation]. 17th Americas Conference on Information Systems, Detroit, MI.
- Fang, Q., Sang, J., Xu, C., & Rui, Y. (2014). Topic-sensitive influencer mining in interest-based social media networks via hypergraph learning. *IEEE Transactions on Multimedia*, 16(3), 796–812. <https://doi.org/10.1109/TMM.2014.2298216>
- Fazio, L. K. (2020). Repetition increases perceived truth even for known falsehoods. *Collabra: Psychology*, 6(1), Article 38. <https://doi.org/10.1525/collabra.347>
- Fazio, L. K., & Sherry, C. L. (2020). The effect of repetition on truth judgments across development. *Psychological Science*, 31(9), 1150–1160.
- Ferguson, E., & Bibby, P. A. (2002). Predicting future blood donor returns: Past behavior, intentions, and observer effects. *Health Psychology*, 21(5), 513–518. <https://doi.org/10.1037/0278-6133.21.5.513>
- Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology*, 58(2), 203–210. <https://doi.org/10.1037/h0041593>
- Fischer, A. H., & Manstead, A. S. R. (2008). Social functions of emotion. *Handbook of Emotions*, 3, 456–468.
- Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). McGraw-Hill.
- Fletcher, R., & Nielsen, R. K. (2018). Automated serendipity: The effect of using search engines on news repertoire balance and diversity. *Digital Journalism*, 6(8), 976–989. <https://doi.org/10.1080/21670811.2018.1502045>
- Fletcher, R., Robertson, C. T., & Nielsen, R. K. (2021). How many people live in politically partisan online news echo chambers in different countries? *Journal of Quantitative Description: Digital Media*, 1. <https://doi.org/10.51685/jqd.2021.020>
- Garrett, R. K. (2013). Selective exposure: New methods and new directions. *Communication Methods and Measures*, 7, 247–256. <https://doi.org/10.1080/19312458.2013.835796>
- Gentzkow, M., & Shapiro, J. M. (2011). Ideological segregation online and offline. *Quarterly Journal of Economics*, 126(4), 1799–1839. <https://doi.org/10.1093/qje/qjr044>
- Gerlitz, C., & Helmond, A. (2013). The like economy: Social buttons and the data-intensive web. *New Media and Society*, 15(8), 1348–1365. <https://doi.org/10.1177/1461444812472322>
- Giumetti, G. W., & Kowalski, R. M. (2022). Cyberbullying via social media and well-being. *Current Opinion in Psychology*, 45, Article 101314. <https://doi.org/10.1016/j.copsyc.2022.101314>

- Gladwell, M. (2010, September 27). Small change: Why the revolution will not be tweeted. *The New Yorker*. <https://www.newyorker.com/magazine/2010/10/04/small-change-malcolm-gladwell>
- Gram, L., Daruwalla, N., & Osrin, D. (2019). Understanding participation dilemmas in community mobilisation: Can collective action theory help? *Journal of Epidemiology and Community Health*, *73*(1), 90–96.
- Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, *78*, 1360–1380.
- Granovetter, M. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory*, *1*, 201–233.
- Grimes, D. R. (2017, December 4). Echo chambers are dangerous – We must try to break free of our online bubbles. *The Guardian*. <https://www.theguardian.com/science/blog/2017/dec/04/echo-chambers-are-dangerous-we-must-try-to-break-free-of-our-online-bubbles>
- Grisham, J. (2021, September 1). *Echo chambers—How they happen and who's to blame?* <https://echo-breaking-news.com/blog/echo-chambers-how-they-happen-and-whos-to-blame>
- Guerini, M., & Staiano, J. (2015). Deep feelings: A massive cross-lingual study on the relation between emotions and virality. In *WWW '15 Companion: Proceedings of the 24th International Conference on World Wide Web* (pp. 299–305). Association for Computing Machinery.
- Guerrero-Solé, F., & Lopez-Gonzalez, H. (2019). Government formation and political discussions in Twitter: An extended model for quantifying political distances in multiparty democracies. *Social Science Computer Review*, *37*(1), 3–21. <https://doi.org/10.1177/0894439317744163>
- Guess, A., Lyons, B., Nyhan, B., & Reifler, J. (2018). *Avoiding the echo chamber about echo chambers: Why selective exposure to like-minded political news is less prevalent than you think*. Knight Foundation.
- Halford, G. S., Baker, R., McCredden, J. E., & Bain, J. D. (2005). How many variables can humans process? *Psychological Science*, *16*(1), 70–76. <https://doi.org/10.1111/j.0956-7976.2005.00782.x> <https://doi.org/10.1111/j.0956-7976.2005.00782.x>
- Hamid, P. N., & Cheng, S.-T. (1995). Predicting antipollution behavior: The role of molar behavioral intentions, past behavior, and locus of control. *Environment and Behavior*, *27*(5), 679–698. <https://doi.org/10.1177/0013916595275004>
- Hampton, K. N., Lee, C. J., & Her, E. J. (2011). How new media affords network diversity: Direct and mediated access to social capital through participation in local social settings. *New Media and Society*, *13*(7), 1031–1049. <https://doi.org/10.1177/1461444810390342>
- Hansen, L. K., Arvidsson, A., Nielsen, F. Å., Colleoni, E., & Etter, M. (2011). Good friends, bad news – Affect and virality in Twitter. In J. J. Park, L. T. Yang, & C. Lee (Eds.), *Future information technology* (pp. 34–43). Springer.
- Hart, W., Albarracín, D., Eagly, A. H., Brechan, I., Lindberg, M. J., & Merrill, L. (2009). Feeling validated versus being correct: A meta-analysis of selective exposure to information. *Psychological Bulletin*, *135*(4), 555–588. <https://doi.org/10.1037/a0015701>
- Heimbach, I., Schiller, B., Strufe, T., & Hinz, O. (2015). Content virality on online social networks: Empirical evidence from Twitter, Facebook, and Google+ on German news websites. In *HT '15: Proceedings of the 26th ACM Conference on Hypertext & Social Media* (pp. 39–47). Association for Computing Machinery.
- Hogg, M. A. (2016). *Social identity theory*. Springer.
- Howe, L. C., & Krosnick, J. A. (2017). Attitude strength. *Annual Review of Psychology*, *68*, 327–351. <https://doi.org/10.1146/annurev-psych-122414-033600>
- Hwang, H., & Kim, K. (2015). Social media as a tool for social movements: The effect of social media use and social capital on intention to participate in social movements. *International Journal of Consumer Studies*, *39*(5), 478–488.
- Ireland, M. E., Chen, Q., Schwartz, H. A., Ungar, L. H., & Albarracín, D. (2016). Action tweets linked to reduced county-level HIV prevalence in the United States: Online messages and structural determinants. *AIDS and Behavior*, *20*(6), 1256–1264. <https://doi.org/10.1007/s10461-015-1252-2>
- Janis, I. L., & King, B. T. (1954). The influence of role playing on opinion change. *The Journal of Abnormal and Social Psychology*, *49*(2), 211–218.
- Kaiser, J., & Rauchfleisch, A. (2020). Birds of a feather get recommended together: Algorithmic homophily in YouTube's channel recommendations in the United States and Germany. *Social Media and Society*, *6*(4). <https://doi.org/10.1177/2056305120969914>
- Kaufman, C. F., Lane, P. M., & Lindquist, J. D. (1991). Exploring more than 24 hours a day: A preliminary investigation of polychronic time use. *Journal of Consumer Research*, *18*(3), 392–401. <http://www.jstor.org/stable/2489348>
- Keogh, R., & Pearson, J. (2017). The perceptual and phenomenal capacity of mental imagery. *Cognition*, *162*, 124–132. <https://doi.org/10.1016/j.cognition.2017.02.004>
- Kim, H.-Y. (2018). Effects of social capital on collective action for community development. *Social Behavior and Personality: An International Journal*, *46*(6), 1011–1028.
- Kim, N., Kim, H. K., Tan, S. J., Wang, W. H. K., & Ong, K. H. (2023). The moral license of a click: How social observability and impression management tendencies moderate the effects of online clicktivism on donation behavior. *New Media and Society*. Advance online publication. <https://doi.org/10.1177/14614448231153971>
- Kim, Y., Hsu, S. H., & de Zúñiga, H. G. (2013). Influence of social media use on discussion network heterogeneity and civic engagement: The moderating role of personality traits. *Journal of Communication*, *63*(3), 498–516.
- Kim, Y., & Kim, B. (2022). Effects of young adults' smartphone use for social media on communication network heterogeneity, social capital and civic engagement. *Online Information Review*, *46*(3), 616–638.
- Kim, Y., Russo, S., & Amnå, E. (2017). The longitudinal relation between online and offline political participation among youth at two different developmental stages. *New Media & Society*, *19*(6), 899–917.
- Kleinberg, M. S., & Lau, R. R. (2021). Googling politics: How offloading affects voting and political knowledge.

- Political Psychology*, 42(1), 93–110. <https://doi.org/10.1111/pops.12689>
- Koiranen, I., Koivula, A., Keipi, T., & Saarinen, A. (2019). Shared contexts, shared background, shared values—Homophily in Finnish parliament members' social networks on Twitter. *Telematics and Informatics*, 36, 117–131. <https://doi.org/10.1016/j.tele.2018.11.009>
- Kristofferson, K., White, K., & Pelozo, J. (2014). The nature of Slacktivism: How the social observability of an initial act of token support affects subsequent prosocial action. *Journal of Consumer Research*, 40(6), 1149–1166. <https://doi.org/10.1086/674137>
- Krosnick, J. A. (1989). Attitude importance and attitude accessibility. *Personality and Social Psychology Bulletin*, 15(3), 297–308.
- Lee, Y. H., & Hsieh, G. (2013). Does slacktivism hurt activism? The effects of moral balancing and consistency in online activism. In *CHI '13: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 811–820). Association for Computing Machinery. <https://doi.org/10.1145/2470654.2470770>
- Lelkes, Y. (2020). A bigger pie: The effects of high-speed Internet on political behavior. *Journal of Computer-Mediated Communication*, 25(3), 199–216. <https://doi.org/10.1093/jcmc/zmaa002>
- Lindström, B., Bellander, M., Schultner, D. T., Chang, A., Tobler, P. N., & Amodio, D. M. (2021). A computational reward learning account of social media engagement. *Nature Communications*, 12, Article 1311. <https://doi.org/10.1038/s41467-020-19607-x>
- Lord, C. G., Ross, L., & Lepper, M. R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology*, 37(11), 2098–2109. <https://doi.org/10.1037/0022-3514.37.11.2098>
- Lorenz-Spreen, P., Oswald, L., Lewandowsky, S., & Hertwig, R. (2023). A systematic review of worldwide causal and correlational evidence on digital media and democracy. *Nature Human Behaviour* 7(1), 74–101. <https://doi.org/10.1038/s41562-022-01460-1>
- Luttrell, A., & Sawicki, V. (2020). Attitude strength: Distinguishing predictors versus defining features. *Social and Personality Psychology Compass*, 24(8), Article e12555. <https://doi.org/10.1111/spc3.12555>
- Manago, A. M., & Vaughn, L. (2015). Social media, friendship, and happiness in the millennial generation. In F. M. Demir (Ed.), *Friendship and happiness: Across the life-span and cultures* (pp. 187–206). Springer.
- Marois, R., & Ivanoff, J. (2005). Capacity limits of information processing in the brain. *Trends in Cognitive Sciences*, 9(6), 296–305. <https://doi.org/10.1016/j.tics.2005.04.010>
- Martin, K. K., & North, A. C. (2015). Diffusion of responsibility on social networking sites. *Computers in Human Behavior*, 44, 124–131. <https://doi.org/10.1016/j.chb.2014.11.049>
- Middaugh, E., Clark, L. S., & Ballard, P. J. (2017). Digital media, participatory politics, and positive youth development. *Pediatrics*, 140(Suppl. 2), S127–S131. <https://doi.org/10.1542/PEDS.2016-1758Q>
- Milan, S. (2015). When algorithms shape collective action: Social media and the dynamics of cloud protesting. *Social Media and Society*, 1(2). <https://doi.org/10.1177/2056305115622481>
- Mintz, A., Valentino, N. A., & Wayne, C. (2021). The limits of human information processing. *Beyond rationality: Behavioral political science in the 21st century* (pp. 45–64). Cambridge University Press. <https://doi.org/10.1017/9781009029827.003>
- Moeller, J., Shehata, A., & Kruikemeier, S. (2018). Internet use and political interest: Growth curves, reinforcing spirals, and causal effects during adolescence. *Journal of Communication*, 68(6), 1052–1078. <https://doi.org/10.1093/joc/jqy062>
- Ostrom, E., & Ahn, T. K. (2009). The meaning of social capital and its link to collective action. In G. T. Svendsen & G. L. H. Svendsen (Eds.), *Handbook of social capital: The Troika of sociology, political science and economics* (pp. 17–35). Edward Elger.
- Pessoa, L. (2009). How do emotion and motivation direct executive control? *Trends in Cognitive Sciences*, 13(4), 160–166.
- Peters, K., & Kashima, Y. (2007). From social talk to social action: Shaping the social triad with emotion sharing. *Journal of Personality and Social Psychology*, 93(5), 780–797.
- Putnam, R. (2001). Social capital – Measurement and consequences. In J. F. Helliwell (Ed.), *The contribution of human and social capital to sustained economic growth and well-being* (pp. 117–135). Human Resources Development Canada.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon & Schuster.
- Reich, S., & Vorderer, P. (2013). Individual differences in need to belong in users of social networking sites. In P. Moy (Ed.), *Communication and community* (pp. 129–148). Hampton Press.
- Roberts, T. (2019, August 13). *Echo chambers and why they are so dangerous*. Paleo Foundation. <https://paleofoundation.com/why-echo-chambers-are-so-dangerous>
- Sachdeva, S., Iliev, R., & Medin, D. L. (2009). Sinning saints and saintly sinners: The paradox of moral self-regulation. *Psychological Science*, 20(4), 523–528. <https://doi.org/10.1111/j.1467-9280.2009.02326.x>
- Schmitt, J. B., Rieger, D., Rutkowski, O., & Ernst, J. (2018). Counter-messages as prevention or promotion of extremism?! The potential role of YouTube. *Journal of Communication*, 68(4), 780–808. <https://doi.org/10.1093/joc/jqy029>
- Schumann, S., & Klein, O. (2015). Substitute or stepping stone? Assessing the impact of low-threshold online collective actions on offline participation. *European Journal of Social Psychology*, 45(3), 308–322. <https://doi.org/10.1002/ejsp.2084>
- Sears, D. O. (1968). The paradox of de facto selective exposure without preferences for supportive information. In R. P. Abelson, E. Aronson, W. J. McGuire, T. M. Newcomb, M. J. Rosenberg, & P. H. Tannenbaum (Eds.), *Theories of cognitive consistency: A sourcebook* (pp. 777–787). Rand-McNally.

- Shiue, Y. C., Chiu, C. M., & Chang, C. C. (2010). Exploring and mitigating social loafing in online communities. *Computers in Human Behavior*, 26(4), 768–777. <https://doi.org/10.1016/j.chb.2010.01.014>
- Skoric, M. M., Zhu, Q., Goh, D., & Pang, N. (2016). Social media and citizen engagement: A meta-analytic review. *New Media and Society*, 18(9), 1817–1839. <https://doi.org/10.1177/1461444815616221>
- Slothuus, R., & De Vreese, C. H. (2010). Political parties, motivated reasoning, and issue framing effects. *Journal of Politics*, 72(3), 630–645. <https://doi.org/10.1017/S002238161000006X>
- Smith, A. (2013). Civic engagement in the digital age. *Pew Research Center*, 25, 307–332.
- Souchet, L., & Girandola, F. (2013). Double foot-in-the-door, social representations, and environment: Application for energy savings. *Journal of Applied Social Psychology*, 43(2), 306–315. <https://doi.org/10.1111/j.1559-1816.2012.01000.x>
- Spencer-Rodgers, J., Boucher, H. C., Peng, K., & Wang, L. (2009). Cultural differences in self-verification: The role of naïve dialecticism. *Journal of Experimental Social Psychology*, 45(4), 860–866. <https://doi.org/10.1016/j.jesp.2009.03.004>
- Strauß, N., Huber, B., & Gil de Zúñiga, H. (2020). “Yes, I saw it—but didn’t read it . . .” A cross-country study, exploring relationships between incidental news exposure and news use across platforms. *Digital Journalism*, 8(9), 1181–1205. <https://doi.org/10.1080/21670811.2020.1832130>
- Stroud, N. J. (2010). Polarization and partisan selective exposure. *Journal of Communication*, 60(3), 556–576. <https://doi.org/10.1111/j.1460-2466.2010.01497.x>
- Sunderrajan, A., & Albarracín, D. (2021). Are actions better than inactions? Positivity, outcome, and intentionality biases in judgments of action and inaction. *Journal of Experimental Social Psychology*, 94, 104105.
- Swann, W. B. (1990). To be adored or to be known? The interplay of self-enhancement and self-verification. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 408–448). Guilford Press.
- Tajfel, H., & Turner, J. C. (2004). The social identity theory of intergroup behavior. In J. T. Jost & J. Sidanius (Eds.), *Political psychology* (pp. 276–293). Psychology Press.
- Tan, S. J., Wang, K. W. H., & Ong, K. H. (2019). *How clicktivism enables moral licensing: The effects of social observability and impression management on subsequent prosocial behaviour*. Nanyang Technological University Singapore. <https://hdl.handle.net/10356/76611>
- Tannenbaum, M. B., Hepler, J., Zimmerman, R. S., Saul, L., Jacobs, S., Wilson, K., & Albarracín, D. (2015). Appealing to fear: A meta-analysis of fear appeal effectiveness and theories. *Psychological Bulletin*, 141(6), 1178–1204. <https://doi.org/10.1037/a0039729>
- Terren, L., & Borge, R. (2021). Echo chambers on social media: A systematic review of the literature. *Review of Communication Research*, 9, 99–118.
- Tesser, A., Martin, L., & Mendolia, M. (1995). The impact of thought on attitude extremity and attitude-behavior consistency. In R. E. Petty & Jon A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 73–92). Psychology Press.
- Theodorakis, Y. (2016). Planned behavior, attitude strength, role identity, and the prediction of exercise behavior. *The Sport Psychologist*, 8(2), 149–165. <https://doi.org/10.1123/tsp.8.2.149>
- Turchik, J. A. & Gidycz, C. A. (2012). Prediction of sexual risk behaviors in college students using the theory of planned behavior: A prospective analysis. *Journal of Social and Clinical Psychology*, 31(1), 1–27.
- Velasquez, A., & LaRose, R. (2015). Social media for social change: Social media political efficacy and activism in student activist groups. *Journal of Broadcasting and Electronic Media*, 59(3), 456–474. <https://doi.org/10.1080/08838151.2015.1054998>
- Walker, M., & Matsa, K. (2021, September 20). *News consumption across social media in 2021*. Pew Research Center. <https://www.pewresearch.org/journalism/2021/09/20/news-consumption-across-social-media-in-2021>
- Wang, L., & Zhang, Y. (2016). An extended version of the theory of planned behaviour: The role of self-efficacy and past behaviour in predicting the physical activity of Chinese adolescents. *Journal of Sports Sciences*, 34(7), 587–597. <https://doi.org/10.1080/02640414.2015.1064149>
- Weingarten, E., Chen, Q., McAdams, M., Yi, J., Hepler, J., & Albarracín, D. (2016). From primed concepts to action: A meta-analysis of the behavioral effects of incidentally presented words. *Psychological Bulletin*, 142(5), 472–497. <https://doi.org/10.1037/bul0000030>
- Whittaker, E., & Kowalski, R. M. (2015). Cyberbullying via social media. *Journal of School Violence*, 14(1), 11–29. <https://doi.org/10.1080/15388220.2014.949377>
- Williams, H. T. P., McMurray, J. R., Kurz, T., & Hugo Lambert, F. (2015). Network analysis reveals open forums and echo chambers in social media discussions of climate change. *Global Environmental Change*, 32, 126–138. <https://doi.org/10.1016/j.gloenvcha.2015.03.006>
- Wilson, M., & Hill, P. (2023). Activist purpose orientation: Definition and predictors. *Social and Personality Psychology Compass*, 17(2), Article e12725. <https://doi.org/10.1111/spc3.12725>
- Yang, T., Majó-Vázquez, S., Nielsen, R. K., & González-Bailón, S. (2020). Exposure to news grows less fragmented with an increase in mobile access. *Proceedings of the National Academy of Sciences, USA*, 117(46), 28678–28683. <https://doi.org/10.1073/pnas.2006089117>
- Yu, R. P. (2016). The relationship between passive and active non-political social media use and political expression on Facebook and Twitter. *Computers in Human Behavior*, 58, 413–420.
- Zell, A. L., & Moeller, L. (2018). Are you happy for me . . . on Facebook? The potential importance of “likes” and comments. *Computers in Human Behavior*, 78, 26–33. <https://doi.org/10.1016/j.chb.2017.08.050>