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Tweeting about sexism motivates further activism: A social identity perspective

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Abstract

Women, more so than men, are using social media activism to respond to sexism. However, when they do, they are also faced with gendered criticisms ('hashtag feminism') that may instead serve to silence them. Based in social identity theory, this research examined how women's social media activism, in response to sexism, may be a first step toward further activism. Two studies used a simulated Twitter paradigm to expose women to sexism and randomly assigned them to either tweet in response, or to a no-tweet control condition. Both studies found support for a serial mediation model such that tweeting after sexism strengthened social identity, which in turn increased collective action intentions, and in turn, behavioural collective actions. Study 2 further showed that validation from others increases the indirect effect of tweeting on behavioural collective action through collective action intentions, but group efficacy did not moderate any indirect effects. It was concluded that when social media activism in response to sexism promotes an enactment of women's social identity, thereby mobilizing them to further action.

Social media is an activist platform of choice for women more so than men (Murthy, Gross, Pensavalle, 2016, Pew Research Center, 2012, 2014; Twenge, 2017). As early as 'Arab Spring', women were more likely than men to use social media to inform others of protest events (Tufekci & Wilson, 2012), and since then, women's use of social media hashtags (#) linked to activist issues has exploded globally. In India, #BoardTheBus called attention to the lack of safety on public transportation (Eagle, 2015); in the United Kingdom, women reported their #EverydaySexism experiences in their daily routines (Bates, 2014); and perhaps the most familiar, #MeToo was reignited on social media so that women could gather support regarding issues of sexual assault (Mendes et al., 2018). Women's greater use of social media activism has been credited to it serving as a "counter-space" (Case & Hunter, 2012; Williams, 2015), namely the safe spaces that students facing racism created to function without the fear experienced in traditional spaces (Solórzano et al., 2000). Similarly, women appear to use social media to call attention to issues that traditional structures (e.g., media, legal institutions, workplace) have historically disregarded (Clark, 2016; BLINDED; Jackson, 2018; Linder et al., 2016; Williams, 2015).

The paradox, however, is that women are also particularly prone to criticism for using the digital space to bring attention to their issues. "Slacktivism", "armchair activism", and "hashtag activism" are critiques of the overall use of social media activism that argue it only

makes users feel good, rather than being an effective tool for social change (Gladwell, 2010; Morozov, 2009; Willingham, 2018). However, women's social media activism is uniquely marginalized. The term "hashtag activism" has become gendered, as "hashtag feminism" (Chen et al., 2018), with accompanying demeaning headlines such as ""I've had enough of #MeToo hashtag feminism and its intellectual laziness" (Strimpel, 2017); and, "And the award for the dumbest hashtag feminism goes to…" (Miller, 2015). Moreover, cyberbullying, which is more commonly perpetrated against women than men in Canada (Statistics Canada, 2016), the United States (Pew Research, 2014), and Europe (Madarova et al., 2019) has different consequences for girls than boys; girls and women are more likely to limit their online participation (Jackson, 2018; Madarova et al., 2019, Mendes et al., 2018), whereas boys tend to ignore their experiences of cyberbullying (Madarova et al., 2019). In effect, while silencing of women from traditional structures has led to the use of counter-spaces like social media, backlash within these counter-spaces can promote the very silencing they were meant to address. And yet, women appear undaunted in their use of social media to address sexism.

This research will therefore examine the mechanisms through which social media activism may mobilize women toward further activism. Emanating from a social identity perspective, we conducted two experiments. Study 1 tested whether social media activism (using a simulated Twitter paradigm) would strengthen women's gender identity, and in turn, predict stronger collective action intentions, and subsequent behavioural collective actions. Study 2 evaluated the replicability of this model, along with factors that might moderate the mediating role of gender identity, namely, perceived validation from others and their perceptions of the efficacy of such actions.

Defining social media activism

Critiques of social media activism contrast it with high-effort actions such as the historic sit-in at the Woolworth's counter to protest racial segregation in 1960 (Gladwell, 2010; Morozov, 2009). Granted, clicking a 'like' button or re-tweeting a hashtag pales in comparison to such courageous collective actions. However, what appears to be simple online activism may be that first step toward further activism (Schumann & Klein, 2015; Schumann, et al., 2012), serving as a digital form of "consensus mobilization". Consensus mobilization has been referred to as a *necessary* first step for instigating social movements (Klandermans, 1984; Klandermans & Oegema, 1987; Snow et al., 1986). It involves raising public awareness of the issues, often through "lengthy campaigns" to promote understanding that "a certain state of affairs is unacceptable" (Klandermans & Oegema, 1987, p. 519). Pre-internet consensus mobilization actions included letter-writing (Foster & Matheson, 1995; Klandermans, 1997), or signing petitions (Kelly & Breinlinger, 1995; Louis, 2009). Even before social media platforms like Facebook and Twitter, Postmes and Brunsting (2002) argued that the Internet was well-suited for what they referred to as "persuasive actions", such as emailing others to inform and recruit participation in a social movement. Social media brought about a similar conceptualization, namely "information activism," used to gather and spread information, provide solidarity and support to protestors and influence public opinion (Halupka, 2016). Thus, social media activism, as a digital form of consensus mobilization may serve as an essential first step for women to mobilize toward further action (Bennet & Segerberg, 2013; Foster, 2015; Halupka, 2016; Postmes & Brunsting, 2002).

A social identity theory perspective on social media activism

Social identity theory states that as members of social groups, people are motivated to establish positive social identities (Tajfel & Turner, 1979; Turner, et al., 1987). Under conditions of group threat (e.g., sexism), a social identity can be strengthened (Branscombe, Schmitt & Harvey, 1999), providing the personal and collective resources that serve as the basis to mobilize group members toward action (Jetten et al., 2012). While embracing a social identity can strengthen activism (e.g., Ellemers et al., 1997; van Zomeren, et al., 2008), the identity itself is also strengthened *by* activism because activism is "putting one's identity into action" (van Zomeren et al., 2012, p.187). Activism serves as a tangible piece of evidence that the group connection is constructive, enhancing empowerment, thereby solidifying group identification (Drury, et al., 2015; Drury & Reicher, 1999, 2005; van Zomeren et al., 2010, 2012, see also Vestergren et al., 2016 for a review).

One reason social identity theory lends itself well to understanding social media activism is that fundamentally, social media increase social connections. Use of the hashtag in social media activism (e.g., #MeToo, #BlackLivesMatter) provides a marker that allows content to be searched, and functions as an announcement to others to "search for me and affiliate with my value" (Zappavigna, 2011, p. 789). By attaching a hashtag to one's content, the individual is *acting* to make their content more visible to others because its searchability increases the likelihood that like-minded others will see it; it is an intentional act designed to create affiliation. Thus, consistent with dynamic models of social identity theory (Becker & Tausch, 2015; Drury et al., 2015), participating in social media activism may serve to strengthen social identity. In turn, given the established relationship between social identity and collective action (e.g., van Zomeren et al., 2012), subsequent collective action may be more likely.

Most research showing a positive link between on- and offline activism has focused on collective action intentions rather than behavioural collective actions (Brunsting & Postmes, 2002; Foster et al., 2019; Schumann et al., 2012; Vaccari et al., 2015). Indeed, according to the theory of planned action (Ajzen, 1991; Fishbein & Ajzen, 1975), intentions are an important proximate precursor of action. However, demonstrating a link to tangible behavioural actions is critical to countering the slacktivism criticism (e.g., Gladstone, 2010). Yet, the few studies (Lee & Hsieh, 2013; Milošević-Dordević & Žeželj, 2017; Vitak et al., 2011; Wilkins et al., 2019) that have examined behavioural options did not examine social identity.

The studies that have assessed the role of social identities in social media use and activism report mixed findings. Conroy et al. (2012) used a proxy of social identification, namely the number of political group memberships on Facebook, and showed that more group memberships on Facebook were related to greater participation in off-line behaviours (e.g., voting, volunteering). Likewise, the relation between self-reports of social media activism and offline protest behaviours was mediated by a politicized identity, but a subsequent experimental study found that group identification was unaffected by social media activism (Kende et al., 2016). Schumann and Klein (2015) similarly found that social identity was not affected by a social media activism manipulation. However, this could be because social identity was measured as social identity consolidation (i.e., to what extent participants believe others viewed them as a group member) rather than how much they themselves identified with the group.

The current studies were therefore designed to fill a gap in the research by examining these variables (social media activism, social identity, collective action intentions, behavioural

collective actions) together. Study 1 tested a serial mediation model (see Figure 1). Consistent with research showing that activism strengthens social identity (e.g., Vestergren et al., 2016), it was expected that social media activism, used as consensus mobilization, would strengthen gender identity, compared to those in a control condition. In turn, based on evidence showing social identity predicts collective action (e.g., Abrams et al., 2020; Cronin et al., 2012; Ellemers et al., 1997; Foster, 1999; Kelly & Breinlinger, 1995; Stürmer & Simon, 2004; Thomas et al., 2020; van Zomeren et al., 2008), a stronger gender identity was expected to increase collective action intentions. Finally, consistent with the theory of planned action, (Ajzen, 1991; Fishbein & Ajzen, 1975), collective action intentions were expected to increase behavioural collective actions (e.g., De Weerd & Klandermans, 1999; Kelly & Breinlinger, 1995).

A second purpose of this research was to explore potential moderators of these relationships. Social identity theory states that individuals seek validation from their social groups (Drury, 2012; Haslam et al., 2012; Turner et al., 1987). Indeed, given the notion of "the looking-glass self" whereby our perceptions of how others view us can affect how we view ourselves (Cooley, 1902; Mead, 1934), validation from others, or a lack thereof, likely plays an important role in mobilizing or silencing social media users. Research shows that small acts of non-support, such as 'unfollowing/unfriending' are perceived negatively by those being unfriended (Bevan et al., 2012; Sibona, 2014), and even anonymous online interactions impact the self-concept (Altheide, 2000; Zhao, 2005). As such, in today's "cancel culture" whereby social media users publicly withdraw their support for statements/actions they deem unacceptable (Ng, 2020), the feedback women anticipate on social media may have important implications for their subsequent behavioural intentions to confront injustice.

Although most research shows that social identification leads to greater perceived ingroup support (Crabtree et al., 2010; Haslam et al., 2005, 2012), there is also reason to believe that validation from others could serve to further strengthen social identity and its relationships to action-relevant variables. For example, when other women thought a woman's claims of discrimination were legitimate (i.e., ingroup validation), group identity was higher than when the ingroup conveyed that such claims were illegitimate (Jetten et al., 2010). Moreover, support from the ingroup increased collective self-esteem (Ellemers et al., 2004), and collective action intentions (van Zomeren & Spears, 2011), and unity within the group enhanced feelings of empowerment (Drury et al., 2005; Vestergren et al., 2019). Taken together, these studies suggest that ingroup validation may strengthen the relationships between social identity and activism. Thus, Study 2 assessed a moderated mediation model (see Figure 2), such that the indirect effects of social media activism on behavioural collective actions through gender identity and collective action intentions was expected to be strongest when women anticipated validation from others.

Group efficacy (the belief that the group will be effective in achieving its goals; Bandura, 1995) was also examined as a potential moderator. Perceiving group efficacy has been found to strengthen social identity (Grant et al., 2017; Thomas & McGarty, 2009; van Zomeren et al., 2010), and to strengthen the likelihood of engaging in collective action (Tausch & Becker, 2013; van Zomeren et al., 2004; van Zomeren et al., 2008). Moreover, group efficacy and social identity can interact to predict collective action (Hornsey et al., 2006; van Zomeren, Spears & Leach, 2008), such that perceived efficacy is particularly likely to motivate action among those with lower attachment to their groups. In the context of social media activism, "action efficacy"

(i.e., how effective the action is expected to be in achieving the group's goal) may be especially important to the relationships between action-relevant variables. Indeed, in recent years, we have witnessed the impacts of social media campaigns (e.g., Arab Spring, #MeToo, #BlackLivesMatter), and beliefs in the efficacy of such campaigns may intensify the relationship between social media activism and engaging in further offline activism. Consistent with this, Wilkins et al. (2019) showed that users of social media who thought their social media actions would have a high impact were also more likely to answer 'yes' to participating in behavioural collective actions one week after the experiment. Thus, we expected that the mediated relations between social media activism, gender identity, collective action intentions, and behavioural collective actions would be strongest among those perceiving higher group efficacy.

Study 1

Method

Participants

Participants were recruited in exchange for course credit from an Introductory Psychology participant pool for an online study on 'power and fairness'. To provide students with sufficient time to earn their course credits, the study remained active throughout the academic year (N = 634). Data were cleaned by deleting participants who had completed the study in less than 13 minutes (the mode completion minutes for each sample). Straightliners (i.e., participants who rush through the study by clicking the same answer repeatedly) were identified by examining the standard deviations for each set of items in a measure; they were deleted if the standard deviation of each set was 0. These deletions resulted in a final sample of

514 women (M_{age} = 20.73, SD = 4.51 years). Of the 276 women randomly assigned to the tweet condition, all but one tweeted. Four women withdrew from the experiment before tweeting. All participants in the control condition completed the experiment.

Self-reported ethnicity was: 64.3% White European origins, 11% South Asian origins, 6.5% Chinese origins, 3.9% Arab/West Indian origins, 3.5% African origins, 2.1% Latin American origins, 1% Indigenous origins, 1% South East Asian origins, .8% Filipino origins, .3% Korean origins, .1% Japanese origins and 5.5% "other". 56.5% of participants reported their academic major was in the Faculty of Science, and the remaining majors resided in Faculties of Arts and Social Sciences.

Procedure

To reduce demand characteristics, this online study was described as assessing power and fairness across a variety of contexts. Participants were told that they would be randomly assigned to read about different issues on the treatment of women, animals or university students, but were in actuality only exposed to information on sexism. After completing demographics, participants read information about women's treatment in a variety of contexts. As in past work (Foster, 2015, 2019), women were primed to perceive sexism by viewing information about real sexist events (see Supplemental Information for the full set of primes and details of simulation). The information women read was designed to convey the pervasive nature of sexism across life domains. This included statistics about sexual assault, sexism in science/technology, religion and sport, along with some specific examples. In each example, they read a description of the event and were provided with a link to the actual news story

documenting the event. After reading through the sexism primes, participants completed

checks of perceived sexism.

As Twitter is one of the most used micro-blogging sites (Pew Research Center, 2014; Top

10 Microblogging, 2019), and the origin of globally impactful social media activism like #MeToo

and #BlackLivesMatter (Anderson, 2016; Pew Research Center, 2018), we simulated the Twitter

platform with the goal of approaching the realism of how social media activism occurs, without

reducing experimental control and risking potential real-world backlash. To simulate the

experience of seeing information online and then tweeting about it, participants viewed the

sexist primes a second time as they would appear on a Twitter feed. All participants were

asked to imagine themselves scrolling through Twitter feed and the thoughts and feelings they

would have while doing so. After being exposed to the sexism events in Twitter-feed format,

participants in the *tweet condition* saw a text box, and read: "Now, we'd like you to please

create a tweet in response to the information you've just read about". As previous research

suggests that greater thought is put into public compared to private tweets (Foster, 2015),

women were reminded that although their tweet would not be seen on Twitter, it would be

judged anonymously by others in the experiment. Participants then typed their tweet into the

simulated twitter text box and hit send.

Women in the *no-tweet control condition* did not receive these instructions. Only one

control condition was included because past work that used three control conditions (no-tweet;

tweeting about the weather; creating a private tweet about sexism that would not be seen),

showed that only public tweeting increased psychological well-being (Foster, 2015). This

demonstrated that the outcomes were not due to the mere act of tweeting (i.e., the weather

condition did not benefit), or to the content of what was tweeted (the private tweet condition about sexism did not benefit).

Both groups then completed measures of gender identity, collective action intentions, and behavioural collective actions, in that order. Participants were then debriefed. Participants were compensated with course credit, and this research was approved by BLINDED's Research Ethics Board (#5806).

Measures.

All measures (except the behavioural collective actions) were assessed along a 5-point scale ranging from 1 "not at all" to 5 "extremely".

Perceived Sexism. To confirm that participants regarded the information they read as sexist, they completed eight items indicating how, "fairly were women treated" (reverse-scored); " justifiable was the treatment of these women" (reverse-scored); "threatening/risky were these situations for women"; "sexist was the treatment of these women"; "severe was the treatment of these women"; "likely is it this kind of thing will happen again in the future"; "pervasive in society is this kind of thing"; likely is it that this kind of situation could affect you personally". The mean across all items was used as the perceived sexism score (α = .77).

Gender Identity. Participants responded to items from Cameron's (2004) measure of social identity that assessed common ties ("I have a lot in common with other women"; "I feel strong ties to other women"; "I don't feel a sense of being connected to other women" (reverse-scored)) and identity centrality ("being a woman has very little to do with how I feel about myself" (reverse-scored); "being a woman is an important part of my self-image"; "the fact that I'm a woman rarely enters my mind" (reverse-scored)). Postmes et al.'s (2012) single

item "I identify with women" was also included. The mean across all seven items was used as the gender identity score (α = .76).

Collective Action Intentions. Participants read, "If in the future, you experience or hear about unfair treatment for women, how likely will you be to perform the following behaviours?" and then were asked to rate 22 offline collective action items from Foster and Matheson's (1995) measure (e.g., "I will participate in protests regarding women's issues"). The mean across the items used as the overall collective action score (α = .95).

Behavioural Collective Actions (BCA). Participants then read, "If you are willing to take action against these types of situations you read about, please check Yes or No and we will send you information on how to become involved in each if you indicate 'Yes'". Clicking 'yes' was used as the operational definition of the behaviour, as it indicated an immediate choice to engage. Four collective actions were presented, each representing incremental variations in levels of activism: collecting more information on sexism, spreading the word about sexism, donating to #TimesUpNow (an organization that provides legal counsel for sexual assault victims), volunteering for an organization fighting sexism. "No" was coded as "0" and "Yes" was coded as "1". The sum of all four actions were computed as the overall BCA score (α = .81).

Results and Discussion

Descriptive statistics and correlations for model variables appear in Table 1.

Perceived Sexism Check

For sexism to have been adequately portrayed, women should report scores above the midpoint of the scale (3), and equally across Twitter conditions. A one-sample t-test showed that overall, participants perceived significantly higher sexism (*M* = 4.34, *SD* = 0.57) than the

midpoint, $t(512) = 53.04$, $p < .001$, 95% CI$_{Difference}$ [1.29, 1.38]. An independent groups t-test

showed no significant difference in perceived sexism between the *tweet* ($M = 4.38$, $SD = 0.56$)

and *no-tweet control* conditions ($M = 4.29$, $SD = 0.58$), $t(511) = -1.64$, $p = .102$. Thus, sexism was

adequately portrayed.

Tweet Content Check

Tweets were examined to ensure they were being utilized as social media activism (i.e.,

exhibiting consensus mobilization). Using a coding schema developed for previous research

(Foster, 2015), two independent researchers coded the tweets for different aspects of

consensus mobilization (Halupka, 2016; Klandermans & Oegema, 1987; Postmes & Brunsting,

2002): naming the problem (e.g., "The blatant sexism and disrespect of women in the media

and society is upsetting, unfair and frankly terrifying….".); criticizing (e.g." These stories are

disgusting…"); persuading (e.g., "… If you agree with any of the previously posted articles, YOU

ARE PART OF THE PROBLEM!!"); and suggesting change (e.g., "…We need to bring change, fight

back and stand up to the everyday harassment being faced by women all over the world;

because the future is now). Each category was coded as 'present' (1), or 'not present' (0).

94.1% of tweets 'named the problem' ($\kappa = .86$, $p < .001$); 86.3% of tweets criticized the state of

affairs ($\kappa = .97$, $p < .001$); 50.2% of tweets were classified as persuading ($\kappa = .88$, $p < .001$);

21.8% of tweets suggested change ($\kappa = .85$, $p < .001$). Only 2.6% of tweets used no type of

consensus mobilization; 9.2% used only one type; 35.1% used two types; 39.5% used three

types; 13.7% used all four types of consensus. Notably, the breakdown of tweets falling into

each category of consensus mobilization was reminiscent of those who *actually* tweeted in a

naturalistic paradigm (Foster, 2015), suggesting that the simulated Twitter paradigm was able to elicit social media activism in the form of consensus mobilization even within a lab setting.

Main Analysis

The serial mediation model was tested using Hayes' Process v 3.5 (Model 6; Hayes, 2018a) using a bias-correct 95% bootstrap confidence interval based on 5000 samples (see Table 2). As hypothesized, the serial mediation indirect effect was significant, B = 0.05, SE = 0.02, 95% CI [0.01, 0.10], indicating that tweeting strengthened gender identity, which in turn was associated with higher collective action intentions, which in turn, was related to greater BCA. However, the indirect effects of tweeting on BCA through gender identity alone, B = 0.01, SE = 0.01, %95 CI [-0.02, 0.04], and of tweeting on BCA through collective action intention alone, B = 0.04, SE = 0.07, %95 CI [-0.11, 0.17] were not significant.

Given larger data samples are susceptible to progressively smaller p-values, the robustness of this effect was tested on a smaller subsample using a sample size that will not reduce the p-value beyond what is consistent with the topic/discipline (Lin et al., 2013). Based on past work in social media activism (e.g., Foster et al., 2019; Kende et al., 2016; Wilkins et al., 2019), n = 300 was chosen so that the p-value would not be driven below p=.01. Consistent with the full sample data, the indirect effect of tweeting on BCA through gender identity alone, B = 0.01, SE = 0.03, %95 CI [-0.04, 0.08], and of tweeting on BCA through collective action intention alone, B = 0.05, SE = 0.09, %95 CI [-0.14, 0.24] were not significant, but the serial mediation indirect effect was again significant, B = 0.07, SE = 0.03, 95% CI [0.02, 0.14]. Thus, the serial mediation model was replicated in the smaller sample.

This finding is consistent with Kende et al. (2016), who found an indirect effect of self-reported social media activism on self-reported collective action intentions through politicized identity. However, this research also extends the findings of past work. First, the inclusion of BCA provides further evidence that social media activism can be a first step toward further collective actions beyond intentions. Second, this study provides causal evidence that even a single act of social media activism can solidify a social identity, as do traditional collective actions such as protest behaviour (e.g., Drury et al., 2015; Drury & Reicher, 1999; van Zomeren et al., 2012).

Study 2

Method

Participants

Participants were again recruited from the Introductory Psychology participant pool in exchange for course credit (N = 1182). Data were cleaned using the same method in study 1; participants who had completed the study in less than 15 minutes (the mode completion minutes for study 2) and straightliners were deleted. These deletions resulted in a final sample of 779 women (M_{age} = 20.41, SD = 4.42 years). Of the 415 women randomly assigned to the tweet condition, all participants relayed a tweet, but four of those wrote "n/a". All participants in both conditions completed the experiment.

Self-reported ethnicity was: 62.1% White European origins, 11.7% South Asian origins, 7.2% Chinese origins, 5% African origins, 3.5% Arab/West Indian origins, 1.7% Latin American origins, 1.6% South East Asian origins, 1.2% Filipino origins, .4% Indigenous origins, .4% Japanese origins and 5.2% "other". 58% of participants reported that their academic major was

in the Faculty of Science, and the remaining majors resided in the Faculties of Arts and Social Sciences.

Procedure

The same procedure as Study 1 was used, however the moderator variables were added, and measures were completed in the following order: gender identity, perceived validation, group efficacy, collective action intentions, and BCA.

Measures

Validation. Perceived validation by others was assessed with positive trait ascriptions (Kaiser & Miller, 2001, 2004). Those in the *tweet condition* read, "If I had sent the tweet, I think others would react to me by thinking I am…" whereas those in the *no-tweet control condition read*, "If I had responded publicly to those incidents, I think others would likely react to me by thinking I am…". Both groups then rated each of four positive traits (likeable, friendly, honest, nice) and their mean rating was used as the index of perceived validation (α = .81).

Group Efficacy. Those in the *tweet condition* read "If I had sent the tweet, I think this could lead to…" whereas those in the *no-tweet control* read, "If I had responded publicly, I think this could lead to…" Both groups then responded to six items: "success in women's voices being heard"; "success in women standing up for their rights"; "success in women influencing other's opinions"; "success in gathering support for stopping this kind of treatment"; "success in changing things"; "success in reducing sexist treatment". The mean rating across items was used as the overall group efficacy score (α = .95).

Results and Discussion

Study 2 descriptive statistics and correlations for model variables appear in Table 1.

Perceived Sexism Check

For sexism to have been adequately portrayed, women should again report scores above the midpoint of scale (3), and equally across the Twitter conditions. Consistent with study 1, a one-sample t-test showed that overall, participants perceived significantly higher sexism (M = 4.34, SD = .53) than the midpoint, $t(777)$ = 70.87, p < .001, 95% CI$_{Difference}$ [1.30, 1.38]. An independent groups t-test showed no significant difference in perceived sexism across the *tweet* (M = 4.34, SD = 0.55) and *no-tweet control* conditions (M = 4.34, SD = 0.51), $t(768)$ = -0.13, p = .895. Thus, as in Study 1, sexism was adequately conveyed.

Tweet Content Check

Tweets were again examined to ensure they were being utilized as social media activism (i.e., exhibiting consensus mobilization) using the same coding schema in study 1. The breakdown of tweets into categories were similar to study 1, such that naming and criticizing the problem were the most common types of consensus mobilization used. Specifically, 89.1% of tweets 'named the problem' (κ = .87, p < .001); 85.4% of tweets criticized the state of affairs (κ = .86, p < .001); 65.5% of tweets were classified as persuading (κ = .83, p < .001); 21.7% of tweets suggested change (κ = .84, p < .001). Only 0.5% of tweets used no type of consensus mobilization; 14.6% used only one type; 24.8% used two types; 43.1% used three types; 17% used all four types of consensus. Thus, women engaged in consensus mobilization regarding sexism, even in a simulated paradigm.

Main Analysis

Consistent with Study 1, the serial mediation (Model 6; Hayes, 2018a) indirect effect was significant in both the full sample, B = 0.07, SE = 0.02, 95% CI [0.03, 0.11], and a randomly

selected subsample (n = 300), B = 0.09, SE = 0.03, 95% CI [0.03, 0.16], indicating that tweeting

increased gender identity, which in turn was associated with higher collective action intentions,

which in turn, was related to greater BCA (see Table 3). These results are consistent with

dynamic social identity models (e.g., Drury & Reicher, 1999; van Zomeren et al., 2012), such

that women 'enact' their gender identity by participating in social media activism, which in turn

is associated with taking further actions. However, again consistent with Study 1, the indirect

effect of tweeting on BCA through gender identity alone was not significant in the full sample, B

= 0.02, SE = 0.01, %95 CI [-0.01, 0.05] or the smaller subsample, B = 0.03, SE = 0.03, %95 CI [-

0.03, 0.11]. Nor was the indirect effect of tweeting on BCA through collective action intention

alone significant in the full sample, B = 0.03, SE = 0.06, %95 CI [-0.08, 0.15], or subsample, B =

0.01, SE = 0.08, %95 CI [-0.17, 0.17] (see Table 3).

To explore whether the mediation was moderated by validation from others, Hayes'

(2018a) Model 85 was tested. The index of moderated mediation was significant for the

indirect effect of tweeting on BCA through collective action intentions in both the full sample

(Index = 0.16, SE = 0.06, 95% CI [0.03, 0.29]), and the subsample (Index = 0.26, SE = 0.11, 95% CI

[0.05, 0.046]), indicating that this indirect effect increased with more validation from others. To

probe this moderated mediation, the conditional indirect effects at low, medium, and high

levels of validation (16th, 50th, 84th percentiles) were tested. At higher levels of anticipated

validation, the conditional indirect effect was significant in both samples ($B_{full\ sample}$ = 0.22, SE =

0.09, 95% CI [0.05, 0.39], $B_{subsample}$ = 0.28, SE = 0.13, 95% CI [0.02, 0.53]). In effect, among those

anticipating that tweets would elicit validation from others, tweeting increased collective action

intentions (full sample conditional path a = 0.22; subsample conditional path a = 0.28)[1] which in

turn predicted more BCA (see Table 4). However, this indirect effect disappeared at both lower

($B_{full\ sample}$ = -0.05, SE = 0.07, 95% CI [-0.21, 0.10], $B_{subsample}$ = -0.17, SE = 0.12, 95% CI [-0.42, 0.07])

and moderate levels of validation ($B_{full\ sample}$ = 0.06, SE = 0.06, 95% CI [-0.05, 0.18], $B_{subsample}$ =

0.03, SE = 0.89, 95% CI [-0.15, 0.19]). Thus, unless women anticipate a high level of support,

tweeting may not mobilize them toward to further activism[2]. This is consistent with the theory

of planned action (e.g., Ajzen, 1991), in that intentions for behaviour are strengthened by

subjective norms. Believing others would view women positively after tweeting may have

served as a subjective norm, thereby strengthening the impact of tweeting on collective action

intentions, and in turn BCA.

This finding, however, should be interpreted with caution given validation was assessed

after the tweet manipulation and tweeting slightly decreased women's anticipated validation

(M = 2.89, SD = 0.85), compared to those in the non-tweet condition (M = 3.21, SD = 0.98),

$t(765)$ = 4.81, $p < .001$, η^2 = .03. Although the relationship was small enough not to implicate

multicollinearity issues, future research will nevertheless need to manipulate validation to

assess its causal impact on the mediation model. At the same time, the direction of

relationships may highlight how important validation is to sustaining collective action beyond

social media activism. In particular, although tweeters recognized the risk of posting on social

media, anticipating a high degree of validation appears to have overridden that risk, to

motivate activism.

The indices of moderated mediation were not significant for the serial mediation

($Index_{full\ sample}$ = .03, SE = .02, 95% CI [-0.02, 0.07]), $Index_{subsample}$ = -.001, SE = .03, 95% CI [-0.06,

0.07]) or for the indirect effect of tweeting on BCA through gender identity alone ($Index_{full\ sample}$

= .01, *SE* = .01, 95% CI [-0.01, 0.03], Index$_{subsample}$ = -.0004, *SE* = .02, 95% CI [-0.04, 0.04]). This may be due to the temporal ordering of variables; in the present study, validation was measured after gender identity, and as such may not have been salient enough to moderate the effect of tweeting on identity. Alternatively, validation was measured in terms of how *others* would react to them after sending the tweet, without specifying whether others were from the ingroup (other women) or the outgroup. Given that validation from the ingroup may be more important to maintaining collective self-esteem than from the outgroup (Ellemers et al, 2004), the lack of a specific reference group may have reduced the potential moderating effects of validation on the relationship between tweeting and gender identity. Moreover, research on cross-group contact suggests that if outgroup support is friendly but does not acknowledge the outgroup's privilege, it might be perceived as ambiguous, paternalistic, or appropriative (Becker et al., 2013; Droogendyk et al., 2016a, 2016b; Wright & Lubensky, 2009). Thus, future work will need to examine whether the reference group used to measure validation from others will change the findings. Nonetheless, the overall finding is consistent with research showing that social media "likes" increase users' self-esteem (Burrow & Rainone, 2017; Dumas et al., 2020; Scissors et al., 2016), which suggests that an *interpersonal* form of validation could also have implications for collective actions.

Inconsistent with past work (Wilkins et al., 2019), group efficacy did not moderate any of the indirect effects[3]. The indices of moderated mediation were not significant for the indirect effect of tweeting on BCA through gender identity alone (Index = .00, *SE* = 0.01, 95% CI [-.01, .03]), through collective action intentions alone (Index = 0.01, *SE* = 0.07, 95% CI [-.12, .14]), or through the serial mediation (Index = 0.02, *SE* = 0.02, 95% CI[-.02, .06]). Thus, the serial

mediation model was not moderated by group efficacy and was not tested in the smaller sample. On the one hand, the measure of group efficacy itself seems to have appropriately tapped into the construct given the intercorrelations were consistent with work showing group efficacy predicts both gender identity and collective action (e.g., van Zomeren et al., 2008, 2010). Instead, a methodological difference that may account for this inconsistency is the social media platform. Wilkins et al., did not specify which social media platform participants used to share information (Facebook, Twitter or Tumblr). This may be important given Halpern et al.'s (2017) finding that that group efficacy predicted offline political behaviours when information was shared on Facebook, but not when shared via Twitter. As such, the role of group efficacy in social media activism may be more complex than with other types of activism. The general zeitgeist surrounding, for example, protest behaviour, is that it is effective. As such, it seems intuitive that among those who feel the protest will help their group to achieve their goals, participating in a protest would strengthen identity (e.g., van Zomeren et al., 2010) and promote additional activism (e.g., Hornsey et al., 2006). But, perhaps believing in the efficacy of social media activism, in the face of its reputation as 'slacktivism', is not sufficiently mobilizing for further action. It is therefore important for future research to understand the nuanced definitions of group efficacy (Hornsey et al., 2006; van Zomeren, et al., 2013) that may be able to predict independently beyond the reputation of the particular medium.

General Discussion

This research sought to examine the mechanisms through which social media activism may promote further activism and how these relationships may be strengthened. As expected, across two samples and randomly selected subsamples, gender identity and collective action

intentions mediated the effect of tweeting on BCA such that, tweeting to protest sexism led to a stronger gender identity (than a no-tweet control condition), which in turn predicted greater collective action intentions, and then, greater BCA. Study 2 further showed that this process was strengthened when strong validation from others was anticipated. These studies contradict the notion of 'slacktivism', instead showing that social media activism can indeed be an effective tool for social change.

Granted, not all social media activism is used, as it was in these studies, for consensus mobilization. Actions that require less output (e.g., clicking the 'like' button) may not strengthen social identity, compared to a tweet responding to social injustice. Indeed, past research has shown that such tweets reflect cognitive complexity and an attempt to make meaning of injustice (Foster, 2015). Thus, although future research would benefit from comparing how alternative forms of social media activism differentially impact activism, these studies suggest that when used as consensus mobilization, social media activism can be mobilizing.

This research also offers a methodological contribution to the literature on social media activism. The simulation was designed to approximate real-world social media use, whereby individuals read something on their feed, and responded to it with no explicit instructions as to the content of the response (i.e., they were simply told to respond to what they read). Across both studies, women's tweets reflected similar levels of consensus mobilization as had been observed when women used their personal Twitter accounts in a naturalistic experiment (Foster, 2015). This suggests that the simulated Twitter paradigm can maintain both experimental control and external validity. An externally valid paradigm may be particularly

important to understanding social identity's role in social media activism, given that social

identity is strengthened when the ingroup sees itself in opposition to the outgroup (Drury &

Reicher, 2000; Drury et al., 2003; Vestergren et al., 2019). However, past work that has not

established a link between social media activism and social identity was operationalized

differently than it is in the real world, for instance, as sharing information with the ingroup

alone (Kende et al., 2016; Schumann & Klein, 2015). Thus, for social media activism to

strengthen identity, it may need to exist on a platform where one's participation in consensus

mobilization can also be seen by the outgroup.

Limitations of this study include the measures of perceived sexism, social identity and

BCA. First, only cognitive-based perceived sexism was assessed, rather than affective reactions

to injustice (Thomas et al., 2009), leaving our understanding of how anger may also contribute

to understanding the relationship between tweeting and collective actions (Becker & Tausch,

2015; Tausch & Becker, 2013), still unknown. Moreover, perceived sexism was measured

before action was taken to ensure the tweet conditions were not confounded by pre-existing

differences in perceived sexism. However, it is certainly feasible that tweeting could have

enhanced perceived sexism. One the one hand, this possibility may not reduce the importance

of the tweeting-social identity link, as perceived injustice and identity can have independent

effects on action (Thomas et al., 2009, 2011; van Zomeren et al., 2008). Indeed, the effects

remained intact when controlling for perceived sexism, suggesting that the impact of tweeting

on activism through social identity were independent of perceived sexism. Nevertheless, future

research will benefit from a more comprehensive assessment of the role of perceived sexism.

Second, given the well-established finding that social identity is a predictor of collective action (e.g., van Zomeren et al., 2008), it is possible that high identifiers are more likely to tweet. Although random assignment likely reduced the impact of pre-existing levels of gender identity on tweeting, future research would benefit from including a measure of gender identity before the tweet manipulations as well. Moreover, relationship between social identity and collective action is often strengthened by the politicization of the identity (e.g., van Zomeren et al., 2008; Stürmer & Simon, 2004; Turner-Zwinkels et al., 2015; 2017), whereby the individual does not merely categorize oneself as a particular group member, but also a recognizes how the group is structurally disadvantaged in relation to other groups (Duncan, 2010). For women, this may be represented as a feminist consciousness (i.e., seeing the personal as political; e.g., Gurin & Markus, 1989), or a feminist identity (e.g., van Breen et al., 2017). Thus, our future research will also examine politicized identities.

Finally, in the current study, BCA was measured by clicking 'yes' if participants wanted to receive additional information about how to take action. As an immediate choice to engage with the issues it was distinct from the intentions measure, that measured participants' estimation of how they would behave in the future if they experienced sexism. Thus, although BCA reflected a degree of commitment beyond the intentions, it did not involve taking tangible action. It would be useful in future research to assess the sustainability of that engagement by including follow-up behavioural assessments that reflect even greater commitment.

Despite limitations however, this research suggests that using Twitter for consensus mobilization strengthens women's gender identity, which in turn was linked to activism beyond intentions. Moreover, this process was enhanced by women's perception that others would

positively value them for taking action online. If women believe they are supported in a

counter-space to which they have turned in order to have their voices heard, they may

continue to speak even louder.

Footnotes

[1]   This value is equal to $(a_{12} + a_{32}W)b_2$, where W is a value of the moderator (Hayes, 2018b). For the full sample, W = .96; for the subsample, W = .94.

[2]   Models 6 and 85 were re-tested in both studies when participants who did not tweet, or tweeted, "n/a" were removed; results did not change. Moreover, both models were re-tested in both studies using perceived sexism as a covariate. Again, the results did not change, with the exception of one test: Model 6 in the full sample of Study 1; using the 95% CI the indirect became non-significant, but remained significant at the 90% CI.

[3]   There were no differences in group efficacy between the tweet (*M* = 3.33, *SD* = .1.01) and the non-tweet conditions (*M* = 3.34, *SD* = .87), *t*(764) =.08, *p* = .936), η^2 = .00.

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Figure 1. *Conceptual and Statistical Models for Hypothesis 1: Serial Mediation*
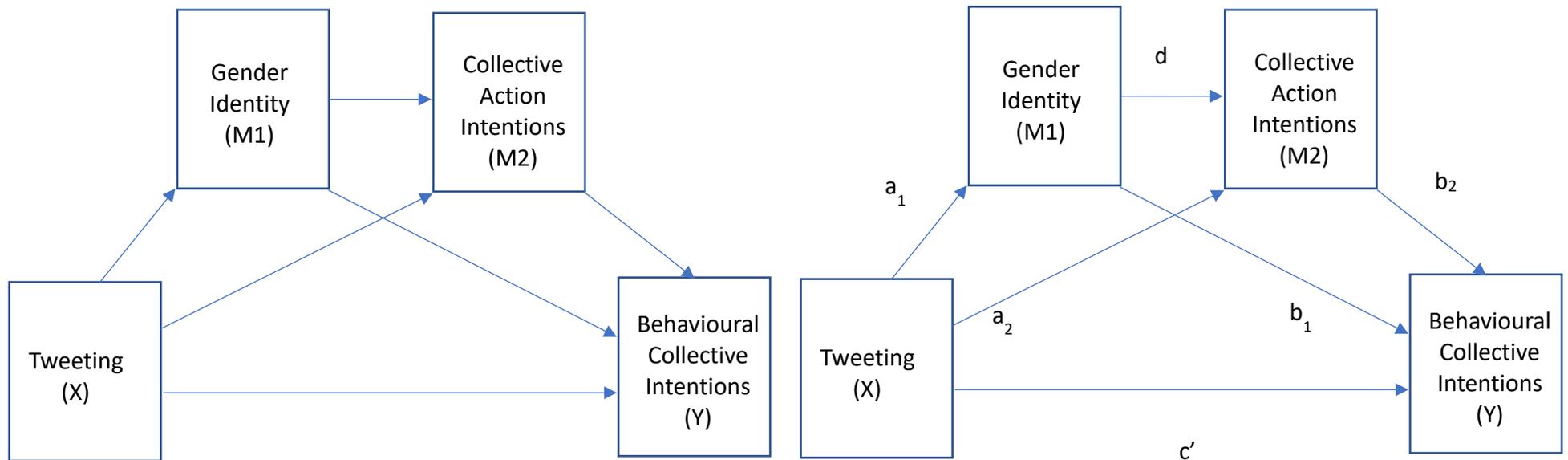
Conceptual Model for Serial Mediation

Statistical Model for Serial Mediation

Figure 2. *Conceptual and Statistical Models for Hypothesis 2: Moderated Serial Mediation*
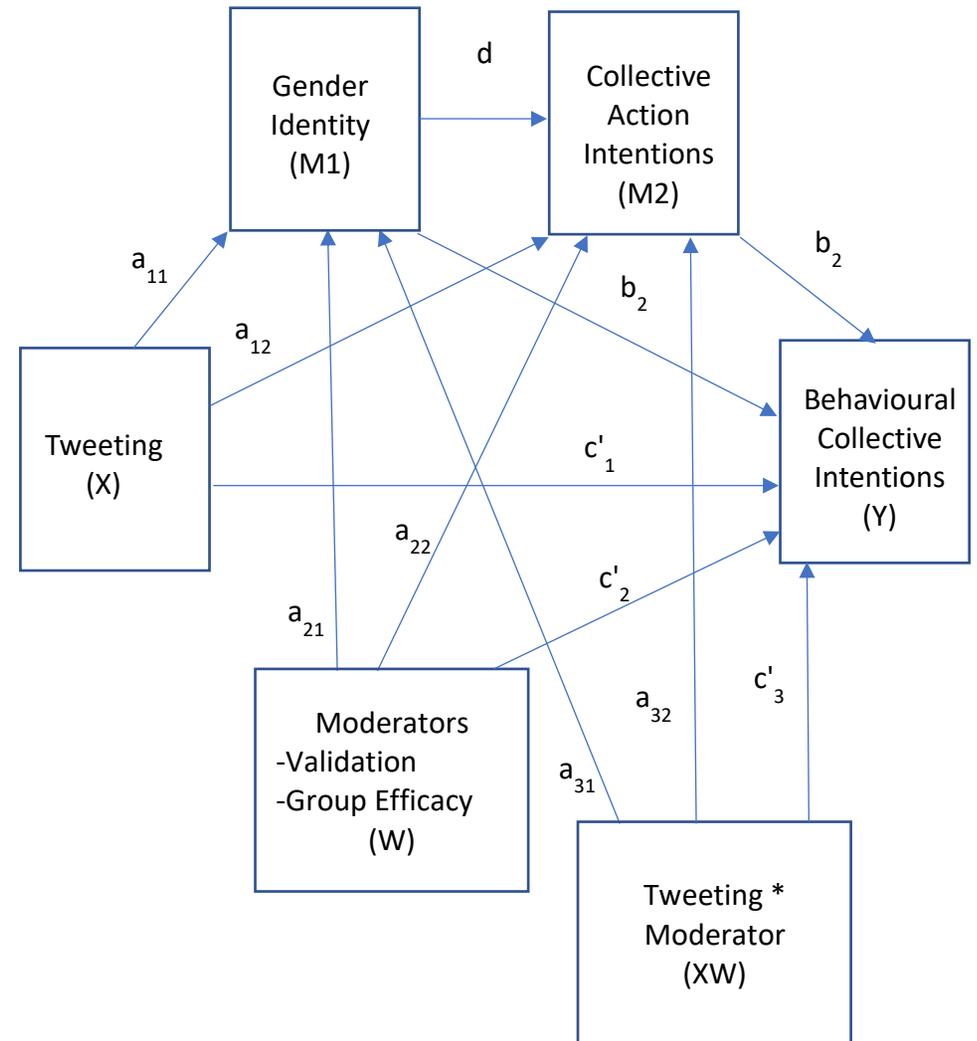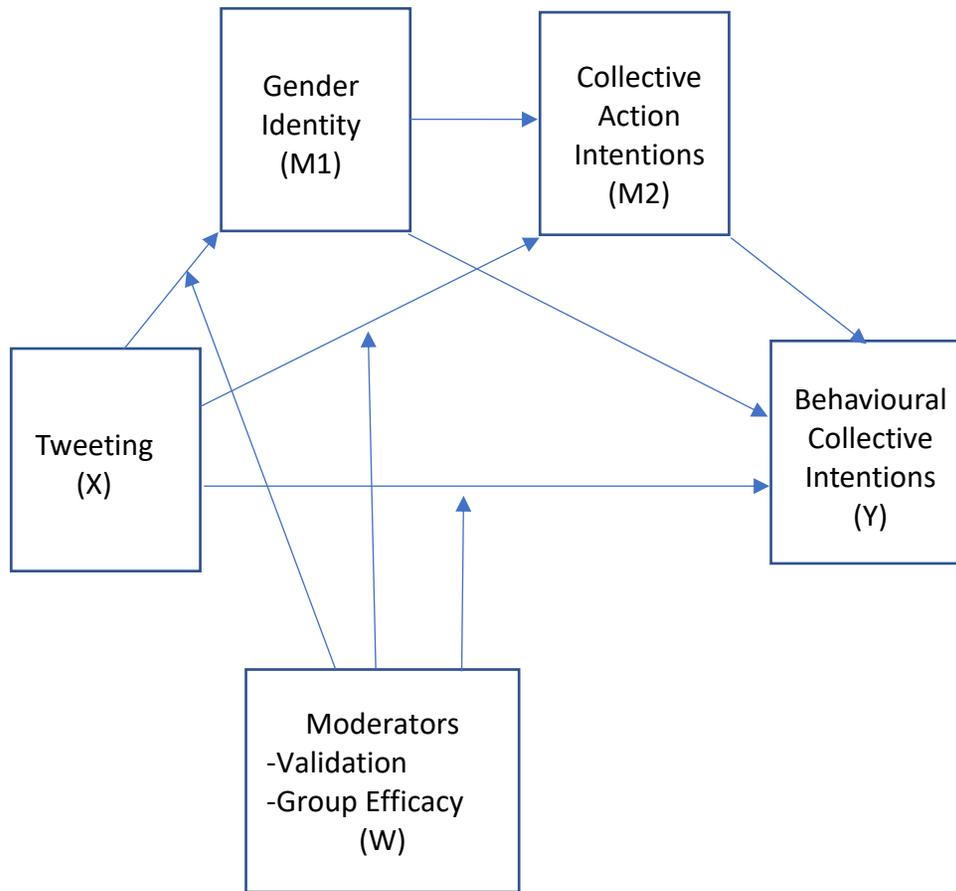
Conceptual Model for Moderated Serial Mediation

Statistical Model for Moderated Serial Mediation

Table 1

Means, standard deviations and correlations of model variables by study.

	M	SD	1	2	3	4	5
Study 1							
1. Gender identity	4.00	.63	-	.33**	.21**		
2. Collective Action Intentions	3.29	.79		-	.54**		
3. Behavioural Collective Action	2.27	1.58			-		
4. Validation	--	--					
5. Group Efficacy	--	--					
Tweet n = 277							
No Tweet n = 238							
Study 2							
1. Gender identity	3.94	.61	-	.35**	.23**	.02	.19**
2. Collective Action Intentions	3.11	.83		-	.54**	.10**	.39**
3. Behavioural Collective Action	2.11	1.57			-	.00	.14**
4. Validation	3.03	.95				-	.25**
5. Group Efficacy	3.34	.95					-
Tweet n = 415							
No Tweet n = 355							

Note: Scores ranged from 1 (not at all) to 5 (extremely). **$p < .01$

Table 2. *Summary of Study 1 Serial Mediation Model for Full Sample and Subsample*

Predictor			B	SE	CI
Outcome: Social Identity (Mediator 1)					
	Path				
Tweet (X)	$a_1 \rightarrow$		.12*	.03	[0.01, 0.23]
Subsample	$a_1 \rightarrow$		*.19**	*.07*	*[0.06, 0.33]*
Outcome: Collective Action Intentions (Mediator 2)					
Tweet (X)	$a_2 \rightarrow$		.03	.06	[-0.10, 0.17]
Subsample	$a_2 \rightarrow$		*.05*	*.09*	*[-0.12, 0.22]*
Social Identity (M2)	$d \rightarrow$		.41**	.05	[0.31, 0.52]
Subsample	$d \rightarrow$		*.35**	*.07*	*[0.21, 0.50]*
Outcome: Behavioural Collective Action					
Tweet (X)	$c \rightarrow$		.36**	.09	[0.06, 0.41]
Tweet (X)	$c' \rightarrow$		.26*	.08	[-0.03, 0.27]
Subsample	$c \rightarrow$		*.48**	*.19*	*[0.12, 0.83]*
	$c' \rightarrow$		*.35*	*.16*	*[0.04, 0.66]*
Social Identity (M1)	$b_1 \rightarrow$		.07	.09	[-0.12, 0.27]
Subsample	$b_1 \rightarrow$		*.07*	*.13*	*[-0.19, 0.33]*
Collective Action Intentions (M2)	$b_2 \rightarrow$		1.05**	.08	[0.89, 1.20]
Subsample	$b_2 \rightarrow$		1.03**	*.10*	*[0.83, 1.23]*

Note: The tweet conditions were coded 0 for the no-tweet control, and 1 for the tweet condition. **p< .01, * p < .05

Table 3. *Summary of Study 2 Serial Mediation Model for Full Sample and Subsample*

Predictor			B	SE	CI
Outcome: Social Identity (Mediator 1)					
	Path				
Tweet (X)	$a_1 \rightarrow$		.16*	.04	[0.06, 0.24]
Subsample	$a_1 \rightarrow$		*.22**	*.07*	*[0.08, 0.37]*
Outcome: Collective Action Intentions (Mediator 2)					
Tweet (X)	$a_2 \rightarrow$		.03	.06	[-0.08, 0.15]
Subsample	$a_2 \rightarrow$		*.01*	*.09*	*[-0.16, 0.18]*
Social Identity (M2)	$d \rightarrow$		.46**	.05	[0.37, 0.55]
Subsample	$d \rightarrow$		*.42**	*.07*	*[0.29, 0.56]*
Outcome: Behavioural Collective Action					
Tweet (X)	$c \rightarrow$		.15	.11	[-0.07, 0.38]
Tweet (X)	$c' \rightarrow$		.03	.10	[-0.16, 0.22]
Subsample	$c \rightarrow$		*.26*	*.17*	*[0.12, 0.83]*
	$c' \rightarrow$		*-.03*	*.16*	*[-0.11, 0.41]*
Social Identity (M1)	$b_1 \rightarrow$		.12	.08	[-0.04, 0.29]
Subsample	$b_1 \rightarrow$		*.15*	*.13*	*[-0.11, 0.41]*
Collective Action					
Intentions (M2)	$b_2 \rightarrow$		.99**	.06	[0.87, 1.11]
Subsample	$b_2 \rightarrow$		*.92**	*.11*	*[0.71, 1.13]*

Note: The tweet conditions were coded 0 for the no-tweet control, and 1 for the tweet condition. **p< .01, * p < .05

Table 4. *Summary of Moderated Mediation by Validation for Full Sample and Subsample.*

Predictor			B	SE	CI
Outcome: Social Identity (Mediator 1)					
	Path				
Tweet (X)	$a_{11} \rightarrow$		.16**	.03	[0.07, 0.25]
Subsample	$a_{11} \rightarrow$		*.24**	.08	[0.09, 0.40]*
Validation (W)	$a_{21} \rightarrow$		.01	.03	[-0.06, 0.07]
Subsample	$a_{21} \rightarrow$		*.07	.06	[-0.04, 0.19]*
X * W	$a_{31} \rightarrow$		.06	.05	[-0.04, 0.15]
Subsample	$a_{31} \rightarrow$		*-.00	.09	[-0.17, 0.17]*
Outcome: Collective Action Intentions (Mediator 2)					
Tweet (X)	$a_{12} \rightarrow$		.07	.06	[-0.04, 0.18]
Subsample	$a_{12} \rightarrow$		*.03	.09	[-0.14, 0.21]*
Social Identity (M1)	$d \rightarrow$		.46**	.05	[0.37, 0.54]
Subsample	$d \rightarrow$		*.43**	.07	[0.30, 0.57]*
Validation (W)	$a_{22} \rightarrow$		.02	.04	[-0.06, 0.10]
Subsample	$a_{22} \rightarrow$		*-.10	.07	[-0.23, 0.04]*
X * W	$a_{32} \rightarrow$		.15**	.06	[0.04, 0.27]
Subsample	$a_{32} \rightarrow$		*.27**	.08	[0.08, 0.47]*
Outcome: Behavioural Collective Action					
Tweet (X)	$c'_1 \rightarrow$		-.01	.10	[-0.20, 0.19]
Subsample	$c'_1 \rightarrow$		*-.13	.16	[-0.45, 0.19]*
Social Identity (M1)	$b_1 \rightarrow$		.12	.08	[-0.04, 0.29]
Subsample	$b_1 \rightarrow$		*.17	.13	[-0.09, 0.44]*
Collective Action Intentions (M2)	$b_2 \rightarrow$		1.01**	.06	[0.88, 1.13]
Subsample	$b_2 \rightarrow$		*.94**	.11	[0.73, 1.15]*
Validation (W)	$c'_2 \rightarrow$		-.04	.07	[-0.19, 0.10]
Subsample	$c'_2 \rightarrow$		*-.16	.13	[-0.40, 0.09]*
X * W	$c'_3 \rightarrow$		-.11	.11	[-0.33, 0.09]
Subsample	$c'_3 \rightarrow$		*-.14	.18	[-0.50, 0.22]*

Note: The tweet conditions were coded 0 for the no-tweet control, and 1 for the tweet condition. **$p < .01$, * $p < .05$