Article

When Nobody "Likes" You: Perceived Ostracism Through Paralinguistic Digital Affordances Within Social Media

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Abstract

This research explores the processes of perceived ostracism ensuing from a lack of feedback via paralinguistic digital affordances (PDAs), the one-click tools (e.g., Likes and +1s) which are one of the most used features of social media, provided to an individual's posted social media content. The positive and negative psychological outcomes of social media communication have been well-documented. However, as social media have become entrenched as some of our most common communication channels, the absence of communication via social media has been underexplored and may have negative psychological and communicative outcomes. We utilized focus groups ($N = 37$) to examine perceptions of ostracism when individuals did not receive PDAs to their posted content across social media platforms. Participants reported feeling excluded only when they did not receive PDAs from select relationally close or socially superior network members, suggesting audience targeting and expectations when posting. Users frequently attributed low PDA counts to system and content factors. These results contribute to a developing understanding of the psychological effects of lack of communication via social media and provide insight for future research, demonstrating that social exclusion may not manifest from a complete lack of social interaction but rather may occur when individuals do not receive expected or desired feedback.

Keywords

social media, ostracism, exclusion, Likes, paralinguistic digital affordances

Introduction

Social media have been noted for prosocial outcomes stemming from communication therein, including facilitating communication among diverse relational ties (Ellison, Steinfield, & Lampe, 2007), providing avenues for belonging and social support (Iannone, McCarty, Branch, & Kelly, 2018; Knowles, Haycock, & Shaikh, 2015; Rozzell et al., 2014), and facilitating the transmission and development of social capital (Ellison et al., 2007; Ellison, Vitak, Gray, & Lampe, 2014). Indeed, social media platforms may provide unique social opportunities for individuals who would otherwise find it difficult to find satisfying social interactions in face-to-face interactions, whether because of dispositional social anxiety concerns or for possessing a stigmatizing status (Hance, Blackhart, & Dew, 2018; McKenna & Bargh, 1998; Okdie & Ewoldsen, 2018). Perhaps, because of these positive communicative experiences and outcomes, the feedback users receive to their self-presentation on social media can cause individuals to use the platforms more (Sarkar, Wohn, & Lampe, 2012).

A common means of feedback across most social media platforms are paralinguistic digital affordances (PDAs), the frequently used one-click tools (e.g., Likes,+1's, and Favorites) that Hayes, Carr, and Wohn (2016b) describe as communicative cues within social media without specific, defined meaning to users, though they do carry meaning (Scissors, Burke, & Wengrovitz, 2016). Representing the social currency of social media, PDAs, when received, can be perceived of as many things, from indicating social support to acknowledging receipt of a message (Wohn, Carr, & Hayes, 2016). Scissors et al. (2016) found that while total numbers of PDAs received do matter, users care more about who sends them, and the receipt from the "right" people matters. What is only beginning to emerge, however, is how the

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absence of those PDAs likewise serves as a feedback cue. Reich, Schneider, and Heling (2018) found that not receiving Likes on Facebook threatens belongingness and self-esteem needs, leading the authors to suggest that perceptions of ostracism may result. To explore whether lack of feedback via Likes specifically and PDAs broadly does indeed lead to perceived ostracism, this research qualitatively explores the psychological and social impacts of absence of these common yet communicatively amorphous messages unique to the social media environment.

Review of Literature

Social Media, Platform Participation, and Ostracism

Social media are, "Internet-based, disentrained, and persistent channels of masspersonal communication facilitating perceptions of interactions among users, deriving value primarily from user-generated content." (Carr & Hayes, 2015, p. 49). Social network sites (SNSs) such as Facebook, Instagram, Snapchat, and Twitter represent some of the most actively used social media tools and allow people to create profiles, connect with other users, and traverse, maintain, and build complex network connections among family, friends, and acquaintances (Ellison & boyd, 2013), facilitating communication for nearly 70% of Internet users (Smith & Anderson, 2018). Construction and continued use of these networks of social connections depend on interaction with other users to provide value (in the form of social support, entertainment, and resources) to the user (Carr & Hayes, 2015). However, as these technologies have matured, scholars have begun to consider the darker effects of SNS use.

Increasingly, research is exploring the potential for negative outcomes from use of these social platforms. Concerns about cyberbullying (Dredge, Gleeson, & de la Piedad Garcia, 2014; Kwan & Skoric, 2013; Whittaker & Kowalski, 2015; Wingate, Minney, & Guadagno, 2013), unrealistic and/or downward social comparisons (Fardouly, Diedrichs, Vartanian, & Halliwell, 2015; Kramer, Song, & Drent, 2016; Liu, Li, Carcioppolo, & North, 2016; Vogel, Rose, Okdie, Eckles, & Franz, 2015), stress from social information overload (Vanman, Baker, & Tobin, 2018), and narcissism (Buffardi & Campbell, 2008; Carpenter, 2012; Rosen, Whaling, Rab, Carrier, & Cheever, 2013) within social media have been investigated and discussed. However, this exploration of the dark side of social media use and outcomes has been mostly constrained to directed interactions, whereby an individual actively communicates with others via the emergent masspersonal channels of social media. Yet, Watzlawick, Bavelas, and Jackson (1967) noted the absence of communication is itself a communicative act. This contentious axiom of communication (cf. Segrin, 2016) highlights a critical paucity, one only recently starting to be addressed in the literature addressing communication in social media (Smith, Morgan, & Monks, 2017): how the absence of communication, or the perception of being ignored, impacts individuals' well-being.

Given the frequency, ease, and low cost (both in temporal and social resources) of lightweight communicative cues such as liking or Upvoting in most social media, research has begun to explore the meanings associated with receipt of these phatic cues. However, the corollary, the meaning individuals associate with not receiving them as feedback to their content shared online, even when such feedback may seem to be readily provided, is only just beginning to be explored. Looking at use of Facebook Likes specifically, Reich et al. (2018) found that no or few Likes resulted in reduced belongingness and self-esteem, and that negative effect was higher when receiving no Likes relative to receiving many; and Scissors et al. (2016) noted some users feel "bad" if they do not receive enough Likes as feedback, particularly those with high self-monitoring or lower self-esteem. Utilizing the temporary need-threat model (Williams, 2009), Scissors et al. connected the reduced belongingness to the detection of a social exclusion signal, which can lead to perceived ostracism, from the lack of provision of Likes. An absence of these simple cues may be particularly meaningful in media defined by their ability to facilitate and encourage interaction among users (Carr & Hayes, 2015). Thus, this research sought to qualitatively explore the processes and effects of lack of receipt of these lightweight cues, termed PDAs (Hayes, Carr, & Wohn, 2016a), across social media and the audiences they connect.

PDAs. Users find value in social media through interacting with others through the numerous channels, tools, and cues for communication afforded by them (Carr & Hayes, 2015; Smock et al., 2011). A common communicative cue in most social media is a PDA. Exemplified by Likes (Instagram, Facebook, Tumblr, and recently Twitter), +1s (Google+), and Upvotes (Reddit and Imgur), PDAs are lightweight "cues in social media that facilitate communication and interaction without specific language associated with their messages" (Hayes et al., 2016a, pp. 172-173). However, Hayes et al. noted that although these PDAs have specific verbiage and nomenclature denoted for each platform, users uniquely ascribe meaning to the transmission and receipt of these cues based on system and interpersonal factors (Carr, Wohn, & Hayes, 2016; Hayes, Carr, & Wohn, 2016b). Therefore, in many ways, PDAs facilitate phatic communication: messages that demonstrate sociability yet contain limited or no real information (Malinowski, 1972), yet still mean something to the interlocutors. On social media, phatic cues are exemplified by PDAs which, in spite of the fact that they are used billions of times per day, can serve as cues for relational maintenance, the provision of social support, and acknowledgment of a message (Carr et al., 2016; Wohn et al., 2016); and the total number received clearly matters to users, with users paying at least some attention to who is sending them

(Carr, Hayes, & Sumner, 2018; Carr et al., 2016; Reich et al., 2018; Scissors et al., 2016). Scissors et al. (2016) and Grinberg, Kalyanaraman, Adamic, and Naaman (2017) both found that while the quantity of Facebook Likes received was important, there were differences in expectations or desires for Likes from certain relational groups. In addition, unlike other tools, PDAs are near-ubiquitous and heavily used across the top social media sites, making them particularly appropriate to study effects across and between social media (Hayes et al., 2016b).

While phatic and designed originally to be ambiguous and without specific meaning (Langley, 2014), users often ascribe specific meaning to PDAs. Hayes et al. (2016a) identified myriad idiosyncratic meanings and significance users ascribe to the receipt of PDAs, so that users interpret more meaning from the receipt of PDAs than the simplicity of the cue would indicate. Further research by Sumner, Ruge-Jones, and Alcorn (2018) and Wohn et al. (2016) demonstrated that users perceive PDAs as socially supportive, especially if they are highly sensitive to what people think of them. Hayes et al. (2016a, 2016b) found that the receipt of PDAs can be important to the continued use of social media even with between-platform differences, and too few PDAs received can lead to decreased social media usage (Sarkar et al., 2012). Furthermore, Eckles, Kizilcec, & Bakshy (2016) evidenced that users will post more if they get more feedback in the form of PDAs and comments. Yet, questions remain about the absence of receiving such cues—how do users interpret meaning from a lack of PDAs to their social media content and how does that impact their social media activity overall? One potential effect of their absence is the perception of ostracism.

Ostracism. Humans have evolved to be social beings, with social connections forged and maintained to obtain social, reproductive, and basic survival advantages. Thus, humans are highly attuned to cues that might signal a threat to those connections (Wesselmann, Williams, & Nida, 2016; Wesselmann, Nairne, & Williams, 2012), which can be subtle, confusing, and at times unintended by the sender (Banki, 2012). Psychologists organize these cues broadly under the label social exclusion, and sub-categorize them into two fundamental human experiences: rejection and ostracism (Riva & Eck, 2016; Wesselmann, Williams, et al., 2016). Rejection involves being given explicit information that one is not wanted or valued in a relationship, whereas ostracism involves being both ignored and excluded by others (Williams, 2007, 2009). Both types of exclusion experiences typically cause negative physiological and psychological outcomes (Wesselmann, Williams, et al., 2016), and if experienced chronically, it can lead to feelings of alienation, depression, helplessness, and a general sense of meaninglessness (Riva, Montali, Wirth, Curioni, & Williams, 2017; Williams, 2009).

Ostracism, as it is characterized specifically as the lack of communication or social cues, provides an apropos lens to make sense of the processes an individual would experience when their content is not acknowledged—possibly leading to perceptions of being ignored—on social media. Psychologists have studied ostracism experimentally in both face-to-face (Williams & Sommer, 1997) and online social interactions (Williams, Cheung, & Choi, 2000). Most researchers use e-based experimental manipulations because of their high internal validity and practical utility (e.g., they do not require training and coordinating live confederates; Wirth, 2016). Some paradigms involve synchronous communication (e.g., online games, Williams et al., 2000; online chatrooms, Williams et al., 2002), but others involve asynchronous communication that is likely more representative of the types of situations individuals may experience, "e-silence," or digitally mediated ostracism, in daily life (Wesselmann, Grzybowksi, et al., 2016). Specifically, researchers have found that participants report feeling ostracized when they do not receive expected messages over texting (Smith & Williams, 2004), email (Bargh & McKenna, 2004) or Facebook (i.e., comments, Tobin, Vanman, Verreynne, & Saeri, 2015; Likes given to a profile, Wolf et al., 2014; hypothetical inclusion/exclusion situations, Smith et al., 2017).

While ostracism via social media (primarily Facebook) has been studied experimentally, the focus has been on the absence of feedback to individuals' profiles (both Likes and comments, Wolf et al., 2014), and only limited work has explored ostracism within the more common day-to-day user-generated content that define social media and in which interaction may be more frequent and likely. In their survey of Facebook users, Scissors et al. (2016) found that 16% of respondents felt bad when they believed their posts did not receive enough Likes, but did not examine specifically why that was, or resulting feelings. While Smith et al. (2017) included Likes aggregated with comments and direct messages in their vignettes examining perceived exclusion, the role PDAs, the most frequently used communicative tool and social currency of social media, play in perceptions of ostracism has been examined in situ only once to date and only on Facebook, with Reich et al. (2018) finding that precursors to perceived ostracism, sense of belongingness, and self-esteem were negatively impacted by receiving no or few Likes, especially from relationally close individuals. This intriguing finding generates more questions about how lack of receipt of PDAs more generally (and on other platforms) might impact perceptions of social exclusion and other psychological effects.

Perceived Ostracism via the Absence of PDAs and Its Effects

As phatic cues, PDAs can represent a cue to one's attention and listening, similar to eye contact and body language (Burgoon, Buller, Hale, & Turck, 1984; Williams & Sommer, 1997) and can be continually provided by users to other users. Thus, similar to the absence of kinetic and haptic cues in face-to-face interactions (Burgoon, Guerrero, & Floyd, 2010), the

absence of PDAs in social media may serve to isolate an individual, leading the individual to feel ostracized, even if no one in their social network intended it. Given (a) the receipt of PDAs is valued and impactful to users in their continued use of social media and (b) the processes of ostracism have been demonstrated via social media, the lack of receipt of PDAs may be similarly—and negatively—impactful, leading individuals to feel ostracized by their social network. The lack of PDAs (and perceived ostracism) could subsequently lead users to withdraw from the social medium (Sarkar et al., 2012), perceiving their self-presentation efforts are not being validated or their belongingness needs not fulfilled.

Yet, such expectations are not necessarily clearly derived, as the absence of PDAs can be interpreted by means other than as ostracism. For example, Carr et al. (2018) indicated Facebook users interpret the number of Likes one of their post receives based on their own Liking behaviors more than based on the raw number of Likes received. Ellison et al. (2014) posited an alternate interpretation of an absence of PDAs received: "A Facebook status update without comments or 'likes' may signal lack of interest by one's network or the update may not have been widely displayed or noticed ... [due to the amount of content or site's algorithm for displaying content]" (p. 858). Consequently, users may attribute the absence of PDAs as feedback to a post either to (a) the relevance of a post's contents or (b) system features that minimized the visibility of the initial post. An absence of PDAs may be attributed not to ostracism but to the system, the post's content, or the user's network; yet, it is unknown whether one's perceived inclusion will still be impacted, especially in a medium focused on interaction and social embeddedness. Moreover, it remains unclear the degree to which the negative relationship between PDAs received and individuals' use of a social medium directly stems from perceived ostracism. Therefore, we sought to explore the psychological and behavioral effects of perceived ostracism via social media through the absence of lightweight feedback cues in the form of PDAs by asking:

Research Question 1: Do social media users perceive ostracism when their posts do not receive PDAs or receive fewer PDAs than expected?

Research Question 2: How does perceived ostracism impact users' continued use of social media platforms?

Method

Given the under-researched nature of this phenomenon, we utilized a qualitative approach, as *a priori* fixed responses would have not allowed us to fully explore research questions at hand (McLeod, Bybee, & Durall, 1982). To examine such a characteristically interactive medium and the effects that the medium facilitates, focus groups were chosen for their ability to enable interaction between participants and the researcher (Krueger, 2009) and enable a "research with" perspective (Rakow, 2011). Focus groups are especially useful for studying uses and effects of newer technology (Lindlof & Taylor, 2010).

Participants

Focus group participants ($N = 37$) were recruited from undergraduate classes at a mid-sized Midwestern university in exchange for extra credit. Three focus groups, lasting about 45-60 min, were conducted, each consisting of 13, 11, and 13 participants. Diverse ethnicities were represented, with 21 White, 6 Black, 1 Asian, and 6 mixed race participants; with 6 participants further identifying as Hispanic (three individuals did not indicate a race). Participants ranged in age from 20 to 28 ($M = 21.5$). Given that this age group has the highest and most diverse adoption of social media platforms and heaviest use (Greenwood, Perrin, & Duggan, 2016), they are an appropriate initial source of information regarding use and effects.

Procedure

Focus groups were conducted in a campus setting and audio recorded. A short survey covering demographics and social media used was given before the discussion began. The discussion reflected the receipt of PDAs across platforms and the psychological effects experienced when a social media post did not receive PDAs. Questioning started with general questions about social media use and then moved to inquiry related to overall reactions to social media posts that did and did not receive PDA feedback, all while the facilitator allowed conversation to evolve organically to enable "research with" participants (Rakow, 2011). Subsequent question prompts were developed using modified forms of relevant items from the Need Satisfaction Following Ostracism scale (Jamieson, Harkins, & Williams, 2010), the Ostracism Experience Scale for Adolescents (Gilman, Carter-Sowell, DeWall, Adams, & Carboni, 2013), and the conceptual definitions of social exclusion and ostracism (Williams, 2009), reflecting reactions to social media posts that did not receive (or received very little) feedback via PDAs. The top three social platforms used among the participating demographic (i.e., Facebook, Twitter, and Instagram) were identified and probed to respond to Rains and Brunner's (2015) call to go beyond Facebook in social media research and Hayes et al.'s (2016a) finding of different support processes and interpretations of PDAs across platforms. Snapchat was intentionally excluded from the discussion because at the time of collection it did not possess a PDA function.

Results

Our research questions sought to examine how users perceive the lack of PDAs to their social media posts across various social media platforms, and if scarcity of PDAs would impact

continued use of a particular platform. Across the three focus groups, participants were all multiplatform social media users, averaging 3.8 platforms used daily. Nearly all participants actively used Facebook, Snapchat, Instagram, and Twitter; and Pinterest and Tumblr use were also evident.

To analyze the focus group data, participant discussion was coded for themes addressing each research question, and also for the contributing factors to ostracism: being ignored and excluded (Williams, 2007, 2009). As discussion of both research questions happened at various points in the focus groups, these themes were organized into defined narratives, each addressed subsequently. In most of these themes, saturation of response, or "no new or relevant data seem to emerge regarding a category" (Strauss & Corbin, 1990, p. 188), was achieved across the three groups, with no broad conclusions drawn that were not reflected in all three discussions. Instances where a topic came up in only one or two of the groups are noted below.

Ostracism

RQ1 sought to answer how, if at all, social media users perceive themselves to be ostracized by their social network when their posts receive very few, or no, PDAs. While participants actively discussed being "bummed," embarrassed, and perplexed when their posts (text-based or visual) received few or no PDAs, few mentioned that they felt ignored or excluded, overall. Mandy (21) noted that there is a mental calculation for what is an acceptable number of PDAs on Instagram, a "ratio" of at least one Like per minute posted; and Wes (23) followed explaining that while "everyone" knew about this ratio, most would be too embarrassed to admit how much it influenced their behavior, given the perceived superficiality of the metric. This ratio came up in one of the other groups, unprompted, and the final group, when directly asked about it, concurred with the earlier groups and then discussed how you "have to" delete posts, especially on Instagram, that do not meet the metric.

Many participants excused posts that received a low number of PDAs as having something wrong with them, or as being posted at the wrong time. "Sometimes you know you just didn't post strategically and you can delete it and try again later," Nick (22). Content, privacy setting problems, how a social platform presented content to users (i.e., the algorithm), time of post, and even the filter used for a photograph were common reasons given for a post not receiving PDAs. Participants overall attributed extrinsic and system factors—especially, the new Instagram algorithm—to a low number of PDAs, rather than interpersonal factors. "The new Insta only shows you the stuff from people who have a ton of friends first, so you really have to scroll to find stuff, and no one sees yours unless you are [celebrity and popular Instagram star] Chrissy Tiegen," Addi (23). Thus, few participants took the lack of PDAs, in the aggregate, as an indication of ostracism. However, PDAs from specific people clearly mattered.

While low summative numbers of PDAs were attributed to system or content problems, if a specific network connection, especially a very close friend, romantic partner, or connection considered socially meaningful (e.g., an older sorority sister or a "cooler" colleague) had not Liked a photo or post, it could lead to anxiety about being specifically ignored or excluded by that individual or small group of individuals. "In my sorority, the younger girls get more Likes because everyone is trying to [one]up each other, but some of the older girls get sick of it and just stop [providing PDAs]. That really freaks out the younger girls," mentioned Kacie (21). Two other young women agreed that this played out in their sorority as well, and in a separate group, Erin (22) noted that some girls would "tag" more senior sorority sisters seeking their PDA acknowledgment, and would "get super salty [upset or embarrassed]" if it was ignored. Another followed up pointing out that she had gotten texts from friends asking, "Why didn't you Like that photo?" or giving instructions to, "go Like what I just posted!," disclosures met with much knowing laughter from other participants. After this exchange, Tiffany (20) said sheepishly, "That was totally me. Wait, no. That still is me." One participant, Eric (25) pointed out that he still looked for his manager from an internship the prior summer Liking his tweets, and got "bummed" and felt disconnected when he did not. After these casual exchanges, participants in two groups were directly asked if the lack of PDAs from the specific people and groups mentioned made them feel excluded or ignored. Roughly half of the participants agreed, among them, Eric immediately said yes, going on to explain that, "It makes me feel like I was only important to him [a colleague] over the summer, and now I get ignored because what I say doesn't really matter anymore." When an acceptable total number of PDAs was received, the absence of these socially important individuals was still noted, with the high number apparently not fully compensating for the absence of feedback from a particular individual.

Together, these perspectives, shared across all three focus groups, suggest the absence of PDAs from either (a) intended or (b) socially relevant or contextually relevant network ties may guide perceptions of social exclusion, even more than a general absence or limited number of PDAs received. These two findings together are somewhat paradoxical: when low numbers of PDAs are received overall, there is an assumption that it is system factors or timing, but when a specific person neglects to send a PDA, it can be perceived of as ostracism. Participants seemed to assume those specific relationally close or socially superior individuals would always see their content, even when they indicated awareness of the intervening forces of algorithms or timing.

Platform Use After Limited Feedback

RQ2 probed how perceived ostracism or lack of PDA feedback impacts users' continued use of social media platforms. After prompting, participants actively discussed how many of them had become frustrated with Facebook because of the

"wrong people" Liking their content. They had begun to perceive that Facebook was not the right place to access their desired networks and, while all except one were still using the platform, many discussed how they had reduced their overall use of it. Other platforms could deliver the "right" people, and those platforms were being preferably used. Family were especially noted as not the "right" people, with Mandy (21) noting that, "You know that your mom is going to Like everything, but that isn't what you want." When posts on Instagram and Twitter did not receive the PDAs expected, again the participants discussed external reasons for that, and noted that the lack of PDAs drove them to post more, post better, and carefully decide what content rather than to discontinue or lessen use of a particular platform. Misti (20) said that "everyone knows you need to post in the morning or afternoon to get the most Likes, and overnight you just shouldn't bother" and went on to describe the attainment of PDAs as,

> sort of a game, you need to make sure to maximize your exposure by posting well, and if you have a friend putting up something similar, you have to get more (PDAs than them). If you don't get as many, it means you have to do better next time.

A few participants noted they sometimes strategically posted to get the attention of certain people, learning what got their attention (e.g., memes, cat pictures, and fashion) and posting more of it. Thus, the general absence of PDAs or subsequent ostracism (when perceived from specific network members) was not hurting continued social media use—it may actually be helping it by making achievement of PDAs a goal among some, something to aspire to, and work toward as users seek to avoid being ignored further.

Discussion

This research serves as an early exploration into the prevalence, processes, and effects of an underexplored phenomenon in communication—especially computer-mediated communication—research: the absence of communication, in the form of PDAs as feedback within social media. Guided by research questions probing whether and how ostracism manifests in social media via absence of PDAs (RQ1) and subsequent media use (RQ2), three focus groups comprised of active multiplatform social media users addressed the presence, processes, and outcomes of ostracism in daily online life in social media such as Facebook and Instagram. Findings have significant implications for our understanding of communication (and the lack thereof) within social media, nonverbal communication online, and the nature of digital ostracism and contribute to and enhance earlier findings.

A Lack of PDAs Can Be Perceived as Ostracism

Discussions among focus group participants revealed that an absence of PDAs can be perceived as ostracism, though it is not always. Though prior work has induced ostracism in social media contexts (Tobin et al., 2015; Wolf et al., 2014), research *in situ* has suggested mixed effects from a lack of feedback to individuals' online posts. Some studies have suggested an absence of PDAs is viewed as a lack of validation or social acceptance to the poster (Carr et al., 2018; Hayes et al., 2016a), though other studies indicate users may attribute a lack of PDAs to external factors (e.g., system settings, social dynamics; Ellison et al., 2014) and thus not result in perceptions of ostracism. Focus groups revealed perceptions of ostracism can and do result from a lack of PDAs received, helping contextualize the processes under which ostracism is perceived and beginning to resolve varied findings in earlier research.

Individuals indeed notice when their posts do not receive PDAs as response cues but process the lack of PDAs in different ways. Surprisingly, ostracism perceived by focus group participants was frequently qualified beyond merely not receiving PDAs, with participants acknowledging that not receiving PDAs from specific subsets of their social network was what could signal social exclusion. In other words, participants reported perceptions of ostracism even when their posts received many Likes, Favorites, and so on. Such a finding pushes against more traditional views of ostracism (and social isolation more broadly) by indicating we can feel excluded even amid social interaction. In this way, the present results echo more recent notions that social exclusion may not evidence a complete dearth of physical or social interaction but rather may occur when individuals do not receive feedback that is expected or desired (Wesselmann, Williams, et al., 2016). It is also consistent with Scissors et al. (2016), whose survey respondents were "generally more concerned with receiving Likes from certain people, rather than receiving a certain number of Likes" (p. 1505).

Particular PDAs Drive Ostracism in Social Media

An important and unique finding of this research is that ostracism can be perceived from a lack of PDAs received, but only when specific people or subsets of one's social networks—typically close friends and social superiors—did not provide PDAs to a post. Thus, perceptions of ostracism were not cleanly derived from a complete lack of PDAs but rather a lack of PDAs from the "right" individuals or groups. Consistent with Hayes et al. (2016b), Reich et al. (2018), and Scissors et al. (2016), PDAs from some network members were tracked, noted, and valued more than others and conversely so too were their absence. Scissors et al. (2016) described users specifically seeking Likes from close friends rather than parents and others, and Likes provided by those others not mattering, even in accumulation. In addition, while in Reich et al.'s (2018) study (and counter to the findings here and in Scissors et al.), total numbers of Likes overall were more important than who sent those Likes to perceptions of ostracism. Who sent the Likes did matter for

other outcomes; however, Likes from relationally close individuals were more important to assessments of self-esteem and belongingness than those from acquaintances. The present data likewise indicate that the absence of Likes from socially relevant individuals can lead to perceptions of unfulfilled esteem and belongingness needs. This may in part be based on Grinberg et al. (2017) finding that we construct expectations for feedback from certain individuals based on the content of the post, and we may question ourselves and our content when we do not receive that feedback. Research on ostracism in daily life suggests ostracism happens most commonly among people of equal status, and the ostracizers are usually (though not always) acquaintances. Though ostracism hurts regardless of the source, individuals recall experiencing the strongest negative effects when the source is someone they have a close relationship or the strongest ties with (Nezlek, Wesselmann, Wheeler, & Williams, 2012; Reich et al., 2018). This process is partially supported in this work, as relationally close others were identified as sources of ostracism; but the unique sting of being ignored by social superiors (e.g., group leaders, social idols, and targets of social aspiration) represents a deviation from typical ostracism research. This finding may be explained by the nature of social media, which facilitates interaction with and observation across multiple social contexts and groups (Marwick & boyd, 2011), and the development of expectations of interaction based on social comparison among one's networks (Carr et al., 2018; Scissors et al., 2016). Passive surveillance and subsequent social comparison of both one's equals and aspirational superiors is both simple and normative. Thus, an important finding of this research is that ostracism can naturally occur in social media (Tobin et al., 2015; Wolf et al., 2014), just as in other offline and online contexts but may manifest in unique ways, potentially due to the novel interactions and audiences enabled by social media.

In a cluster of media noted for collapsing social contexts and facilitating access to multiple social groups (Marwick & boyd, 2011), feedback from specific subsets (e.g., social groups and relational ties) of an individual's network may still be most important in validating a user's posted content. Social ostracism via a paucity of PDAs may be perceived among groups or dyads where there are social hierarchies or defined relationships: specific social groups targeted by an individual may be able to, intentionally or not, socially isolate the individual—even if the individual's broader social network is interacting—resulting in the feeling of being alone in a crowd. Thus, although individuals may sometimes attempt to self-present themselves to their holistic network (Hogan, 2010), the present data further evidence that individuals can just as readily use social media to enable deliberate communication toward particular facets of their online networks (Bazarova & Choi, 2014). Indeed that individuals are seeking validation of their self-presentation (via social media posts) in the form of PDAs suggests they are attempting to target or access specific audiences within their broader

networks (Hayes et al., 2016b; Vitak, Blasiola, Patil, & Litt, 2015) and mentally segmenting the feedback provided by those individuals whom a post targeted from the unintended audience of their broader social networks. Particularly as one's entire network may have access to one's social media content, not receiving acknowledgment from an intended or desired audience may intensify the negative effects of perceived ostracism more so than in segmented networks or offline interactions in which the attending receivers are known or readily assumed.

Attribution of Lack of PDAs to Nonpersonal Factors

Individuals make a variety of attributions to account for a lack of PDAs received in total. One reason many users did not perceive ostracism from an absence of PDAs was they attributed the deficiency to nonsocial system forces. Users seemed highly aware of the technological processes underlying and driving communication within social media, such as various algorithms and subsequent selective exposure within their communicative networks: though all posts were accessible, not all posts were accessed or pushed to all of their network ties (see Ellison et al., 2014). Thus, individuals receiving low numbers of PDAs (either at all or in the anticipated quantities) recounted often ascribing this absence of PDAs as a failure of the system (e.g., the new Instagram algorithm and rapidity of certain social media's updated feeds) or of timing. Alternately, users sometimes attributed a lack of PDAs received as an artifact of the nature of the post's contents, acknowledging that not all posts "work," in the sense they would not be valued by and engage their disparate social circles. In these cases, system and content justifications helped buffer perceptions of ostracism and instead drove a desire to beat the algorithm through both strategic posting and improved content. Indeed, Williams (2009) argues attributional processes can facilitate (or prolong) distress from ostracism depending on whether they focus on external or internal factors. Thus, our findings begin to empirically support Ellison, et al.'s (2014) proposition that a lack of Likes (or, more broadly, PDAs) may not always be interpreted as signals of a lack of value or interest of one's network regarding the poster but rather may be attributed to system or broader social features.

This finding points out a contradiction in the minds of some participants: While they acknowledge that they feel excluded and worry about the lack of PDAs from certain individuals, they ameliorate any feelings of exclusion resulting from low total numbers of PDAs by blaming those low numbers on the algorithm or other, impersonal, factors and that those relationally important individuals may not have actually seen a particular post due to the algorithm or because they were not on the platform since posting, was not considered. Rational assessments of posters' own content (i.e., maybe it just was not funny) seemed to be replaced with

feelings their connections were purposively choosing not to Like something and thus excluding them.

Impacts of Social Media Ostracism on Social Media Use

A final finding of this research addresses the implications of perceived ostracism on continued social media use. Experiencing ostracism, especially long-term, can lead to individuals withdrawing from social interactions (Ren, Wesselmann, & Williams, 2016; Wesselmann, Ren, & Williams, 2015). Yet, focus groups revealed some individuals engage in more social media activity following low PDA numbers, whether there was a perception of ostracism or not. This finding may be explained by the hyperpersonal model of communication, suggesting such phenomena may be unique to online platforms, including social media.

The hyperpersonal model of communication (Walther, 1996) proffers individuals selectively self-present themselves online to achieve relational goals (e.g., social interaction) and strategically adjust subsequent self-presentations based on others' feedback. This feedback loop—the iterative adjustment of self-presentation based on feedback to prior efforts—is reflected in social media users' reflections on their interpretations of receiving a lack of PDAs from particular targets. The ostracism perceived by participants seeking PDAs from specific individuals motivated them to alter subsequent communicative acts to be more likely to garner desirable reactions. Just as online daters iteratively edit profiles based on prior feedback (and lack thereof) from potential relational partners (Ellison, Heino, & Gibbs, 2006), broader social media users may thus be likely to attempt to strategically enhance their online self-presentation to specific communicative targets and foster positive perceptions and interactions. Thus, the receipt and lack thereof of PDAs may be considered feedback cues to individual's self-presentation (even if posts are not explicitly self-statements) that can drive dynamic interpersonal processes like hyper-personalization (Herring, 1999).

Although a hyperpersonal explanation to participants' reported increased strategic use of social media to present themselves upon perceiving ostracism offers parsimony, it also pushes against earlier assumptions about network composition in social media. It has often been argued that social media collapse social contexts, facilitating concurrent and masspersonal interaction across multiple social groups (Carr & Hayes, 2015; Marwick & boyd, 2011). Focus group participants' implicit acknowledgment of the presence and role of hyperpersonal feedback loop suggests self-presentation within social media may not always be generalized messages toward a broadly accessible network. Instead, users—either idiosyncratically, based on the social medium, or topic of self-presentation—may be crafting messages intended for particular receivers, even when messages are accessible to one's entire network (O'Sullivan & Carr, 2018). Thus, it may

be important moving forward to reexamine how users are self-presenting in social media to elicit these PDAs and also to game the algorithm and the types of messages (and intended audiences) that elicit PDAs. Such a pursuit would likely also help better-understand the dyadic and reciprocal communicative exchanges represented by PDAs (as responses to social media posts), rather than simply considering PDAs as static messages.

Limitations and Future Research

A limitation of this research is that some participants may have engaged in face-saving work during focus group discussion as we addressed possibly sensitive things in a semi-public context (Bernstein et al., 2013), and some cared more about PDAs than others and realize it (Mai, Freudenthaler, Schneider, & Vorderer, 2015). The focus groups were at the larger end of recommendations for group size, and the format could have prevented some from sharing potentially embarrassing feelings, such as being more bothered than others at not receiving PDAs. Other research has found individual differences moderate reactions to ostracism and other types of social exclusion, such as loneliness (Gardner, Pickett, Jefferis, & Knowles, 2005; Hawkley & Cacioppo, 2010), neuroticism (Boyes & French, 2009), rejection sensitivity (Ayduk, Gyurak, & Luerssen, 2008; Downey & Feldman, 1996; Pfundmair et al., 2015), and social anxiety (Wesselmann, Wirth, Mroczek, & Williams, 2012; Zadro, Boland, & Richardson, 2006). The same may be the case for PDAs, but it is likely that in the focus groups, we did not have enough variability in these individual differences to assess that, another limitation of this work. Interviews may be a valuable method to explore this topic to address those issues, and they should be considered in the future. However, the results here are consistent with the early and limited work that has been done on Likes.

This research was also limited by investigating the phenomenon using retrospective methods. Participants respond to the questions based on how they recalled previous events, rather than experiencing a lack of PDAs in vivo. Retrospective methods are useful for studying ostracism (Wesselmann, Williams, et al., 2016), but reconstructive nature of memory may alter how people remember not receiving PDAs versus how they actually experienced in the moment. Laboratory manipulations of ostracism over SNS use comments and "Likes" to a profile such that participants believe they are interacting with strangers, yet still the absence of interaction still makes them feel ostracized (Tobin et al., 2015; Wolf et al., 2014); our participants only reported feeling ostracized when they did not receive PDAs from people whom they were close to interpersonally. It is possible that participants felt ostracized in the moment they did not receive PDAs regardless of the source but then took into account their relationship closeness as a way of facilitating recovery. Thus, what they recalled during the focus group may have been

influenced by this reassessment. Future research should investigate these potential differences between methods, as well as how various attributional processes may facilitate recovery.

Future studies should continue to explore these processes quantitatively and across a more representative sample. Although college-aged samples often serve as innovators of social media use by evidencing trends in perceptions and use before broader populations (N. B. Ellison et al., 2007), their use is often therefore different than that of the general population. Within the present research, college student participants may have been more attuned and sensitive to PDA-based "slights," and, alternatively, given their digital native status, may have higher social media self-efficacy, insulating them from interpersonal explanations to low PDA counts.

Finally, there may also be a time course by which a lack of PDAs differentially affects individuals' behavioral strategies. Williams (2009) argues that individuals should respond to instances of ostracism by changing their behavior to satisfy their threatened psychological needs. These responses usually, though not always involve attempts at re-establishing social connection (Wesselmann et al., 2015). Indeed, sometimes, individuals withdraw from social interactions and seek solitude in response to ostracism (Ren et al., 2016). In our focus groups, most participants recalled responding to an absence of PDAs with renewed effort to obtain social feedback; however, some participants indicated that they became less enamored with some types of SNS when they did not get the PDAs they desired. This decreased interest may be the beginnings of withdrawal from those SNS, and longitudinal methods would be useful in assessing that possibility. Overall, our findings suggest that understanding how varied audiences' psychometric and demographic properties affect their interpretation of the presence or absence of PDAs may be just as valuable as contrasting effects among various social media platforms.

Conclusion

The prosocial benefits of interaction within social media are often lauded, as individuals can take advantage of various feedback mechanisms to receive social support (Rozzell et al., 2014), social capital (Ellison et al., 2007), and even health information (Eysenbach, 2008). Yet a negative potential exists within the same interactive, masspersonal properties of social media: when experiencing a lack of feedback to individuals' content, or an absence of communication, in these innately communicative media, users may sometimes feel ostracized. By not receiving PDAs from specific individuals, social media users may experience perceptions of ostracism, in a way that sheer numbers of Likes or other PDAs cannot compensate for. This network member-specific ostracism may not always lead users to withdraw from usage of the platform but rather motivates them to "up their game" online, driving a continually increasing interpersonal arms-race of social media content. However, in these focus group participants, perceived ostracism did not seem to result, in general, from low PDA numbers, only when PDAs were not received from those individuals from which they were expected or desired.

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