What's in a Like? Attitudes and behaviors around receiving Likes on Facebook

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ABSTRACT

What social value do Likes on Facebook hold? This research examines people's attitudes and behaviors related to receiving one-click feedback in social media. Likes and other kinds of lightweight affirmation serve as social cues of acceptance and maintain interpersonal relationships, but may mean different things to different people. Through surveys and de-identified, aggregated behavioral Facebook data, we find that in general, people care more about who Likes their posts than how many Likes they receive, desiring feedback most from close friends, romantic partners, and family members other than their parents. While most people do not feel strongly that receiving "enough" Likes is important, roughly two-thirds of posters regularly receive more than "enough." We also note a "Like paradox," a phenomenon in which people's friends receive more Likes because their friends have more friends to provide those Likes. Individuals with lower levels of selfesteem and higher levels of self-monitoring are more likely to think that Likes are important and to feel bad if they do not receive "enough" Likes. The results inform product design and our understanding of how lightweight interactions shape our experiences online.

Author Keywords

Social network sites; Facebook; Likes; Like paradox; self-esteem; self-monitoring

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous

INTRODUCTION

Giving and receiving feedback is a fundamental part of people's experiences on social media. Incoming and outgoing feedback signal investment in social relationships by maintaining interpersonal bonds, keeping older relationships active, and grooming new ones [9]. Yet social

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© 2016 ACM. ISBN 978-1-4503-3592-8/16/02...\$15.00 DOI: http://dx.doi.org/10.1145/2818048.2820066 network sites afford many forms of feedback between audience and poster, including comments, replies, and private messages; or more lightweight actions such as Likes, Favorites, or +1s. In this paper we focus on the social value of these lightweight actions, which, though highly prevalent [24], may be interpreted in a variety of ways.

Lightweight, one-click feedback actions occur on Twitter, Flickr, Google Plus, and many other platforms. We focus on Facebook Likes because of the site's size and scope. Roughly half (44%) of Facebook users Like content posted by their friends at least once a day [24], generating around 4.5 billion Likes daily as of 2013 [10]. In addition, for some people, "getting feedback on content you have posted" is a major reason for using Facebook [24]. Because a Like takes only one click to produce, it may be an easy way for acquaintances and more distant friends to maintain relationships without requiring a lot of effort or context. On the other hand, Likes may be perceived as less meaningful than comments or posts directly on friends' walls since they are so easy to generate. For instance, previous research shows that receiving "composed" content (comments and wall posts) from friends is associated with improvements in relationship strength, perceived social support, happiness, bridging social capital, mood, and loneliness, but receiving Likes alone is not [2, 3].

Despite being a less effortful form of communication than comments or messages, we view Likes as social cues that send a signal both to the person who created the post as well as to the poster's network of friends. In online settings, individuals use the cues available to "reduce interpersonal uncertainty, form impressions, and develop affinity" ([33], p.535). As such, Likes may signal social appropriateness or social acceptance. They may signify psychological support and empathy. Or, in a context where the audience is unclear, they could simply signal that a friend has seen a post. Peyton writes "the like button is a chimera, meaning multiple things to many people" ([25], p. 116). Likes may be interpreted and valued differently by the Liker, the recipient, and the recipient's friends. Given the ubiquity of Likes on Facebook, their theoretical importance as a social grooming tool [9], and this ambiguity around their significance, it is important to understand the value people ascribe to Likes so that we can better understand

motivations for sharing and the role of lightweight feedback in the social media ecosystem.

There are many open questions about people's perceptions of Likes on Facebook. For instance, how important is it for people to get Likes on their posts? Do people hope for a certain number of Likes? If so, what is that number? Or does it matter more who Likes a post rather than how many Likes a post receives? Is a Like from a close friend valued as much as a Like from an acquaintance? Using a survey and de-identified, aggregated Facebook log data, this paper explores the extent to which Likes are meaningful to people, what aspect of the Likes are meaningful, and whether different kinds of people view Likes differently. Answering these questions contributes both to product design and to our understanding of how lightweight interactions shape our experiences online.

LITERATURE REVIEW

Feedback on Social Media

Likes, comments, messages, and other types of communication play several roles in social network sites. The warranting principle suggests that when making judgments about a person, we weigh information generated by that person less strongly than information generated by other people, since other-generated information is less prone to manipulation [33]. Therefore, visible actions performed by others shape the impressions we make about a person. For example, friends' posts and comments on a person's wall influence others' assessments of that person's attractiveness [34, 35] more than that person's own content.

Although a Like may contain less text-based information than a comment or wall post, it is still a form of othergenerated content and thus has information value. In particular, the number of Likes a person receives may indicate popularity or personality characteristics. For instance, the more Likes a person's status updates receive, the more strangers perceive that person as extraverted [15]. People who post also feel this association with popularity. For instance, a 2014 Pew survey found that 12% of Facebook users strongly dislike "pressure to post content that will be popular and get lots of comments/likes" [24], and a Pew focus group found that teens sometimes remove photos they've posted if the photos receive too few Likes [21].

Since people can see whom a Like is from, Likes also contain information important to relationships. Ellison and Vitak describe Likes as "micro-transactions" that can "help create an environment in which reciprocal attention and low-level social grooming is productively enacted" ([8], p.220). On the other hand, empirical research demonstrates that receiving Likes is not associated with increases in relationship closeness, while other forms of interaction (such as comments) are [4]. Therefore, simply receiving a Like may be less important than whom it comes from and other relationship factors.

People also use Likes and other feedback to estimate how many people see the content they share [1]. However, they often overestimate the rate of feedback and thus underestimate their audience size [1]. One possible reason for overestimating how much feedback they should receive is what we call a "Like paradox," a corollary to the "friendship paradox" (that people's friends have more friends than they do [12, 16]). It is possible that people's friends may receive more Likes than they do, and thus skew their perspective on how much feedback to expect on their own posts.

Previous work examining motives for Facebook use suggests additional research is needed on the role of Likes (e.g., [23], [29]). For instance, Smock and colleagues examined what motives (e.g., social interaction, relaxing entertainment, expressive information sharing) predict the use of various Facebook features such as comments, wall posts, and status updates, but did not examine what motives predict using Likes [29]. In addition, Burke and colleagues found that newcomers' use of certain Facebook features is associated with their friends' use of those features, though the study also did not specifically examine Likes [5]. Furthermore, little empirical research has focused on the experience of receiving feedback on Facebook, how important people perceive it to be, and how different types of people may value feedback differently.

We investigate the experience of receiving Likes on Facebook posts via the following research questions:

To what extent do people care about getting Likes?

How many Likes on posts are "enough" and how does this compare to the number of Likes people actually receive?

How do people think the number of Likes they receive compares to the number of Likes their friends receive? How accurate are people's perceptions?

To what extent do people care about number of Likes they receive vs. from whom they receive the Likes?

What types of people (e.g., close friends, acquaintances) do people care most about getting Likes from?

Self-Esteem, Self-Monitoring & Technology-Mediated Communication

Given that Likes and other feedback affect impression formation and are a publicly displayed element of one's online presence, people with certain personality traits may view and value Likes differently than others. One trait that may impact people's orientation towards Likes is self-esteem since it is largely based on perceptions of social acceptance (e.g., [18]).

Previous research suggests that in some contexts, people with lower levels of self-esteem may prefer to communicate via technology (vs. face-to-face) since mediated communication can be less face-threatening. For instance, in hypothetical situations involving interpersonal risk (e.g.,

asking for a pay raise, asking for a date), people with low self-esteem showed a stronger preference for email and a weaker preference for face-to-face communication compared to people with higher levels of self-esteem [17]. A more recent study demonstrated that people with lower self-esteem felt more strongly compared to people with higher self-esteem that Facebook was a safe place to express themselves [13]. People with lower self-esteem were also more likely to see advantages to disclosing their thoughts and feelings via Facebook rather than in person. Additionally, regardless of trait-level self-esteem (a more constant personality characteristic), people who visit Facebook in times of low self-worth (such as after receiving a poor performance review) feel increases in shorter-term state self-esteem [32].

Yet, while people with lower self-esteem may be drawn to sharing on Facebook, they may share thoughts that use more negative language, which in turn makes them appear less likable, at least to strangers assessing their posts, and garners them less feedback in the form of Likes and Comments [13]. Furthermore, another study found that people with lower levels of self-esteem were more likely to prefer the use of text-based communication like text messaging or social network sites to discuss a conflict with a romantic partner even though the use of mediated communication was associated with negative outcomes [28]. Other research, however, has found that more intense use of Facebook was associated with gains in bridging social capital for people with lower self-esteem but not for higher self-esteem [7] suggesting that technology-mediated communication can provide benefits to individuals with lower levels of self-esteem. While findings on the benefits of Facebook use for people with low self-esteem is mixed, it is important to examine how people with lower selfesteem orient toward different Facebook features, including Likes, so that we can better understand which features and interactions are harmful and which are helpful.

Another characteristic that may influence attitudes about Likes is self-monitoring, or the extent to which people monitor or control how they present themselves in social situations. People who are high self-monitors are concerned with acting in ways that are socially appropriate [30]. On the other hand, low self-monitors tend to exhibit more consistent behavior and do not adapt their behavior across social contexts. In addition, high self-monitors want to appear social and extraverted, and aim to present themselves in a way that demonstrates social status (see [14] for a review).

Self-monitoring has been associated with various online experiences and behaviors. People who are higher self-monitors are more likely to experience episodes of online turbulence, an instance where their personal information exists beyond the boundaries that person expects or desires [1]. This may be due to context collapse; since there are often multiple audiences in online spaces, high self-

monitors may have a hard time trying to fit their behavior to multiple audiences at once [1]. Another study found that high self-monitors also tend to post a profile picture at a younger age, post more frequently, and receive more Likes on their status updates than do low self-monitors [15]. Since high self-monitors are more concerned with feedback signals in social contexts, it may be that they attend to and care more about Likes on Facebook than low self-monitors do. Given previous research on self-esteem and self-monitoring, we aim to explore this additional research question:

How are self-esteem and self-monitoring associated with attitudes and behaviors around Likes?

METHOD

Participants

Survey participants (N = 2,109; 56% female; ages 13 to 90, mean = 40.3) were recruited through a banner on Facebook displayed to English speakers in the U.S. who had a Facebook account for at least 12 weeks, posted any type of content at least twice, and received at least two Likes in the past 12 weeks. Since the questionnaire focused largely on the experiences of receiving Likes on one's posts, we first asked participants how often they post to Facebook. Five percent (N = 114) of participants reported that they never post to Facebook and thus were excluded from analyses. leaving a sample of N = 1,996. Participants had an average of 491 friends (min = 1, max = 4.912) and had been using Facebook for 5.9 years (min = 97 days, max = 11 years). During the 28 days prior to the survey, participants logged in to Facebook on an average of 27.4 days (min = 2, max = 28). Compared to a random sample of US, Englishspeaking Facebook users, our sample was about 3 years older, had 13% more friends, was active on Facebook 2 more days out of the previous 28, and had a Facebook account for 9 months longer on average (all p's < 0.05). Our sample had 3.5% more women. There was no significant difference in Likes received per post between our respondents and the random sample (M = 18.2 vs. M =17.8, p = 0.06).

Behavioral data

Survey responses were matched to behavioral data from Facebook's server logs for the prior 12 weeks. All data was de-identified and analyzed in aggregate by Facebook employees. Behavioral data included the number of posts, number of Likes and comments given and received, and the average number of Likes and comments received per post across participants' 970,135 friends. No post or comment content was analyzed as part of the research.

Procedure

Participants filled out an online survey with two sections: (1) attitudes and behaviors about Likes on Facebook and (2) personal characteristics; sections were presented in counterbalanced order. The median respondent finished in eight minutes, and there was no compensation.

Measures

Items were measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) unless otherwise indicated.

Personal Characteristics

Self-esteem: Participants completed the 10-item Rosenberg self-esteem scale [26], which included items like "On the whole, I am satisfied with myself," and "I take a positive attitude toward myself" (M = 4.14, SD = .85, $\alpha = .91$).

Self-monitoring: Participants completed a modified version of the self-monitoring scale [19]. The four items participants completed were: "When I am uncertain how to act in a social situation, I look to the behavior of others for cues"; "At parties I usually try to behave in a manner that makes me fit in"; "I try to pay attention to the reactions of others to my behavior in order to avoid being out of place"; "If I am the least bit uncertain as to how to act in a social situation, I look to the behavior of others for cues." (M = 3.06, SD = 1.02, $\alpha = .85$).

Extraversion: Several studies have previously investigated the role of extraversion and Facebook use, including its role in group membership [27] and its relationship with self-monitoring [15]. Therefore, we also included a measure of extraversion in this study. Participants completed the four extraversion questions from the Big Five personality scale [6] $(M = 3.22, SD = 1.01, \alpha = .82)$.

Relationship Maintenance Behaviors: Participants filled out the Facebook Relationship Maintenance Behaviors scale [9]. Example items: "When I see a friend or acquaintance sharing bad news on Facebook, I try to respond" (M = 3.94, SD = .78, $\alpha = .81$).

Attitudes and Behaviors about Likes

We asked people a series of questions related to their experiences with Likes on Facebook:

- "How often do you post on Facebook (e.g., status update, photo, video, link)?" (1 = never, 5 = multiple times a day)
- "Why do you think people 'Like' your posts?" (openended)
- "If my post does not receive enough Likes, it makes me feel bad" (5pt agreement scale)
- "There are certain people whose Likes I care about more than others." (5pt agreement scale)
- "On average, how many Likes do your posts get compared to your friends' posts?" (1 = my posts get far fewer Likes, 3 = our posts get about the same number of Likes, 5 = my posts get far more Likes)
- "Which is usually more important to you, the number of Likes you get or which people Like your posts?" (1 = The number of Likes I get is much more important, 3 = They're both equally important, 5 = The people who Like my posts is much more important)

• "In general, how much do you care about receiving Likes from the following types of people?" (random order: Parents; Family members other than my parents; Close friends; Coworkers; Acquaintances; My spouse, romantic partner, or love interest; A former romantic partner; My manager, teacher, or supervisor; Potential employers or professional contacts; People I don't know).

Finally, we asked three questions about receiving "enough" Likes per post:

- "If one of your posts were to get 'enough' Likes, how many Likes would that be? Please write in a number below."
- "How did you arrive at that number?" (open-ended)
- "How important is it for you to get 'enough' Likes on your posts?" (1 = not at all important to 5 = extremely important)

RESULTS

In the 12 weeks prior to taking the survey, the median participant made 5.25 posts per week (mean = 11.8), "Posts" include photos, text, links, check-ins, and re-shares; multi-photo posts were batched and counted as a single post. The median person received 12.8 Likes per post (min = 0.07, mean = 18.2, max = 692.1). Figure 1 shows the 12-week averages for all participants.

How much do people care about getting "enough" Likes?

About half (52.7%) of participants said that getting "enough" Likes was important to some extent. Yet only 16% of participants agreed with the statement "If my post does not receive enough Likes, it makes me feel bad." Though most respondents did not feel badly about not getting enough Likes, in open-ended responses they noted they think their friends Like their posts for a number of self-affirming reasons. Responses included:

- Agreement (e.g., "Sometimes because they like or agree with what I've said")
- Attention (e.g., "Because they are interested in what I have to say and what my feelings are about a particular subject")
- Supportiveness (e.g., "If they want to be considerate or kind ... or simply to be supportive")
- Empathy (e.g., "They understand and/or relate to what I've posted").

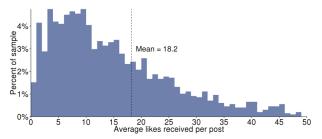


Figure 1. Average Likes received per post.

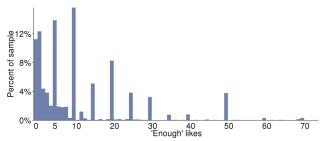


Figure 2. Responses to "enough" Likes per post.

How many Likes are enough?

Participants proposed a wide range of values for "enough" Likes per post, with the median person volunteering that 8 Likes was "enough" (see Figure 2; numbers larger than 500 were omitted, excluding 3.4% of the sample from that question). Many of the participants who said they did not care about getting enough Likes wrote "0" in response to this question. Roughly ¼ of respondents reported that 1 or 2 Likes was enough, commenting in open-ended responses that they wanted to be sure someone had seen their posts (e.g., "If it gets at least one or two likes, then I know someone saw it, and that is good enough for me." and "If my post can impact at least one person then I'm happy.")

Beyond 1-2 Likes, people had a variety of reasons for the numbers they chose:

"Well, I thought about how many I receive before I stop really paying attention to how much the number increases after that." (enough = 3)

"That's how many people I would think would be interested in my posts." (enough = 5)

"6 is probably what I average, and I feel bad when I get less than that. With at least 6, I can get a better grasp as to what different kinds of people "Like"." (enough = 6)

"15 likes means that definitely 15 people have SEEN that post / But it also slightly ensures me that More than 15 people have SEEN the post / People seeing my posts are whats most important" (enough = 15)

"I arrived at this number by thinking about when i'm not on my computer,... it will go to my phone and blow it up lol... so when my Facebook ringtone goes off 30 times i will have enough..." (enough = 30)

"Anything below that seems underwhelming since I don't post often and since I put a lot of thought into my posts (note: actual posts. not shared links)" (enough = 50)

Do people receive "enough" Likes per post?

Roughly two-thirds (62.5%) of participants received what they consider to be "enough" Likes per post in the previous 12 weeks (see Figure 3). Of the remaining third, they fell

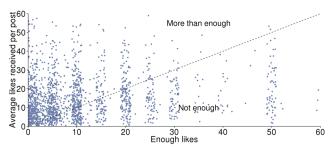


Figure 3. Average Likes received per post by responses to "enough" Likes per post. (Jitter added for visibility).

short by an average of 27.9 Likes (median = 8.9). (Note that this statistic omits 3.4% of respondents who had values greater than 500 for "enough.") But only some people care about Likes. When removing participants who said they did not care "at all" about receiving enough Likes, 49.9% of participants received what they consider to be "enough" Likes per post, with the average person receiving 6.5 more likes than his or her threshold, and the median person receiving exactly enough (a difference of 0.04 Likes per post). For those who felt they didn't receive "enough" Likes, what might have led to their inflated expectations? One factor may be the Like paradox.

The Like Paradox

Similar to the friendship paradox, where most people have fewer friends than their friends have [12], in this work we demonstrate a "Like paradox:" people receive fewer Likes on their posts than their friends get. During the 12 weeks prior to the survey, participants' friends received roughly twice as many Likes per post (median = 23.8) as they did (median = 12.8). Figure 4 shows the difference between the two. Why did their friends receive more Likes? Those friends had roughly twice as many friends as our participants (see Figure 5).

Only some participants perceived this discrepancy in Likes between themselves and their friends: 28% reported on the survey receiving fewer Likes than their friends and 56% thought they got about the same number of Likes. This suggests that there may be other factors that influence people's impressions of the number of Likes they should receive, not just how many their friends receive.

Preferences for who Likes your Posts

What matters more – how many Likes one receives or who the Likes are from?

Participants were generally more concerned with receiving Likes from certain people, rather than receiving a certain number of Likes: 42.5% of participants said that who Likes their posts is more important than the number of Likes on their posts while only 10.5% said that the number was more important; 47.0% said they were equally important. Furthermore, 58.1% agreed to some extent that "There are certain people whose Likes I care about more than others" (25.1% disagreed, 16.8% were neutral).

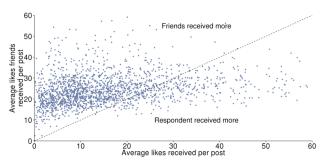


Figure 4. Average Likes per post received by survey respondents (x-axis) and by their friends (y-axis). Their friends typically receive roughly twice as many Likes per post.

Who do people want Likes from?

Participants most wanted to receive Likes from close friends (73% "want" or "really want"), romantic partners (60%), and family other than parents (50%) (see Figure 6). On the other hand, people least want to receive Likes from people they don't know (34%), potential employers or professional contacts (25%), and managers/teachers/supervisors (24%).

Individual differences in caring about Likes

There are a number of psychological traits that influence the extent to which people care about getting Likes on Facebook. Table 1 shows three regressions estimating responses to three survey questions about (1) the importance of getting enough Likes, (2) whether people feel bad if they don't receive enough Likes, and (3) whether they think they receive more Likes than their friends.

All three models control for age, gender, friend count, and the number of days in the past month the participant logged in to Facebook. Each model includes self-esteem, self-monitoring, extraversion, and Facebook relationship maintenance behaviors. Correlation between the scales was low (max r = .37 between extraversion and self-esteem). The third regression includes an additional binary variable indicating whether a person actually received more Likes per post than his or her friends. All continuous independent variables except for age were standardized (age was only

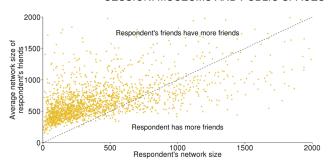


Figure 5. The friendship paradox: Most respondents have smaller networks than their friends have.

centered), and friend count was logged base 2 to control for skew and then standardized.

The intercept in the first model, 1.90 (on a 5 point scale), represents the response of an average woman, age 41, with 491 friends who logged into Facebook 27 days in the past month with average self-esteem, self-monitoring, extraversion, and Facebook relationship maintenance behaviors. Her response means that she thinks receiving enough likes is "slightly" important. Similarly, her intercept in the second model, 2.12, means that she "Somewhat disagrees" with the idea that not receiving enough Likes causes her to feel bad. Both of these values further confirm the finding that people generally do not feel strongly that receiving a certain number of Likes is important. The intercept in the third model, -0.23 (on a scale from -2 to +2), means that she thinks her posts get about the same number of Likes as her friends' posts.

Some of the control variables were significantly related to the outcomes. Older respondents believed they received slightly more Likes than their friends ($\beta=0.007,$ all subsequent p's < 0.001 unless otherwise specified), and gender was not significantly related to any of the outcomes. Friend count was positively associated with all three outcomes; a one-unit increase in friend count (roughly 295 friends) is associated with small increases in believing Likes are important ($\beta=0.18$), feeling bad about not receiving enough Likes ($\beta=0.10$), and believing you

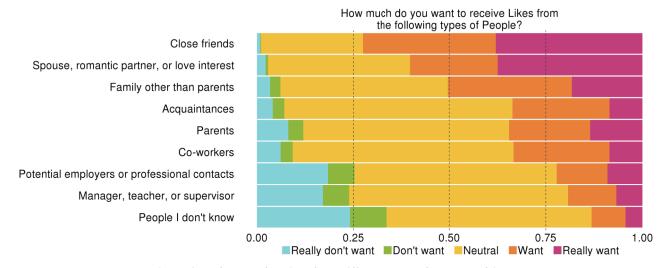


Figure 6. Preferences for Likes from different types of Facebook friends.

	Importance of getting enough Likes		Feel bad if don't get enough Likes		Perception of # Likes received compared to friends	
Variable	β	SE	β	SE	β	SE
Intercept	1.90**	.03	2.12**	.03	23**	.03
Self-esteem	− .14**	.03	23**	.03	.09**	.02
Self-monitoring	.20**	.02	.28**	.03	.02	.02
Extraversion	01	.03	05	.03	.16**	.02
FB Relationship Maintenance	.09**	.03	02	.03	.05*	.02
Age	00	.00	00	.00	.01**	.00
Gender	.09	.05	00	.05	02	.04
Friend Count (Log2)	.18**	.03	.10**	.03	.20**	.02
# of days logged in over the past month	04	.02	.01	.03	.07**	.02
Friends receive more Likes per post					.27**	.05
Adj. R-squared	.09		.12		.19	

N = 1996; * = p < .01, ** = p < .001

Table 1. Models predicting (1) importance of getting enough Likes, (2) feeling bad about not getting enough Likes, and (3) perception of the # of Likes received compared to friends' Likes received.

receive more Likes than your friends ($\beta = 0.20$). After controlling for friend count, number of login days was only significantly associated with believing you receive more Likes than your friends ($\beta = 0.07$). Overall, this indicates that people with many friends have higher expectations about how many Likes they'll receive.

Self-esteem

The lower someone's self-esteem, the more people think getting enough Likes is important (β = -0.14) and feel bad if a post doesn't get enough Likes (β = -0.23). Conversely, people with high self-esteem believe they receive more Likes than their friends. A one-unit increase in self-esteem was associated with a β = -0.14 drop in believing receiving enough Likes is important, and a β = -0.23 drop in feeling bad for not receiving enough Likes, and a β = 0.09 point increase in perceived Likes received compared to friends.

Self-monitoring

Similar to individuals with low self-esteem, the more someone monitors his or her behavior for social appropriateness the more sensitive he or she is to Likes. The higher the level of self-monitoring, the more they think getting enough Likes is important ($\beta = 0.20$) and feel bad if they don't get enough Likes ($\beta = 0.28$). However, self-monitoring was not associated with receiving a different number of Likes compared to friends.

Extraversion

Extraversion was not associated with a sensitivity to Likes, though similar to individuals with high self-esteem,

extraverts believe they receive more Likes than their friends do ($\beta = 0.16$).

Facebook relationship maintenance behaviors

People who engage in many relational maintenance behaviors on Facebook place more importance on getting enough Likes ($\beta = 0.09$), though the magnitude was smaller than the effects of self-esteem and self-monitoring. People who engage in more relational maintenance behaviors on Facebook believe they receive more Likes than their friends do ($\beta = 0.05$, p < .01).

DISCUSSION

Likes are one of the most ubiquitous online actions in the world. Relative to their ubiquity, there has been little research into how people think about receiving Likes or the importance of Likes in online communication. While previous research suggests that Likes may not be uniformly meaningful, this work demonstrates that they do hold meaning on Facebook, though that meaning is largely influenced by who the Likes are from (vs. how many Likes are received) and who is receiving those Likes. We also found that people infer meaning behind their friends' Likes, noting that Likes may represent signals of like-mindedness or support. This echoes Burke and Kraut's suggestion that "the mere act of communication independent of its content provides a symbolic message about the time and effort one person is willing to invest in another" ([3], p. 4188).

Our research found that people care more about who Likes their Facebook posts than how many Likes their posts receive, and that they desire Likes more from certain types of relational ties than others. This sheds new light on the value of a Like and has important implications for design. First, it suggests that routing posts to the "right" people might be better than simply getting as many people to see a post as possible. Likes from close friends, romantic partners, and family members other than parents, which were the three most highly desired sources of Likes found in this study, seem to be more important than more feedback from other audiences. It could also be the case that there is a threshold with regard to the number of Likes beyond which there is diminishing value. Future work could more directly investigate the relative value of who Likes a post vs. how many as the number of Likes on a post increases. In addition, there may be some cases where Likes from close ties may actually be unwanted, such as when a person is embarrassed by something that only close friends know about (like a lost job), and so interactions with those friends may heighten embarrassment [3].

That people care more about who Likes their Facebook posts than how many Likes their posts receive also informs what feedback-related information is most meaningful to show people on social media platforms. Currently, Facebook and Twitter send notifications when someone has Liked or Favorited one's post or Tweet, showing the poster the name of the person who gave the feedback. But in a feed or profile page, who Liked or Favorited a post is more obscure. Facebook often only shows a total count of Likes and a viewer must click through to see who actually Liked the post. Similarly, Twitter shows how many Favorites a Tweet has but one must drill down to see who has Favorited the Tweet. Social media platforms that support one-click communication from friends or followers could consider other more prominent ways of surfacing the "who" rather than the "how many" in more public displays of feedback. This might lead some people to care less about the specific number of Likes they receive, but might also put pressure on a smaller number of Facebook friends to actively Like posts. However, it is unclear from the current study whether people want Likes from certain types of friends for their own knowledge or as more of a public-facing cue to their networks. Future research should examine why people want Likes from specific types of people.

Yet about half of participants reported that they did care to some extent about getting enough Likes, suggesting that the number of Likes may be more important if a certain minimum is not met. Of the people who cared about getting enough Likes, about half of them received more than enough, while the other half received too few by their standards. When asked how many Likes was "enough", people tended to have a rationale for this number, which was higher than their typical number of Likes by about 9 Likes. This is possibly due to the Like paradox whereby one's friends get more Likes than one does, or the feed ranking algorithm showing people content that receives a lot of Likes [11].

The finding that some people are not getting what they consider to be enough Likes on their posts has implications for Facebook in particular, and for SNSs more generally. For instance, the pressure to get enough Likes that some people feel could be reduced by providing other social cues. This could be through development of alternative one-click actions that aren't public-facing, or signals such as "read receipts" to provide more insight to audience composition. The pressure to get enough Likes could be also be reduced by encouraging people to share with specific subsets of friends, like in a closed group or on a specific friend's wall. Alternatively, other SNSs have addressed their versions of the Friend paradox and/or Like paradox in other ways. For example. Snapchat does not show the amount of feedback on others' content and feedback is provided in other ways (namely, content production of one's own).

Furthermore, it may be that not getting enough Likes on a post is a cue to the poster that their specific post was not agreed with or deemed acceptable in some way. While we found evidence that Likes are social cues that carry meaning, there are still many more aspects of Likes to understand, such as how people feel when they receive the Like that gives them "enough" Likes, or what they think the Likes they receive signal to the rest of their network.

We also show that self-esteem, self-monitoring, and engaging in relationship maintenance behaviors were all related to perceptions and attitudes about Likes. That people lower in self-esteem and higher in self-monitoring care more about receiving Likes is in line with their orientations toward social cues. People with low self-esteem may view Likes as validation of their self-worth. Similarly, high self-monitors may view Likes as a cue that they've behaved appropriately in an online social setting. These findings suggest that one's personality traits influence one's attitudes about receiving feedback on Facebook, and that what might be hollow cues to some are actually important social cues to others.

Limitations and Future Work

There are several limitations to this work. First, this sample is comprised of only US English speakers. Given cross-cultural differences in reciprocity, self-monitoring, and other related constructs, the results found here may not be generalizable to other cultures. In addition, there may be a social desirability bias in reports of how much people care about getting enough Likes; people may not want to admit that Likes are important to them. Third, we note that issues of causality may be difficult to untangle. For instance, we examine how well stable traits like self-esteem and self-monitoring predict attitudes about Likes. However, it is possible that people's past experiences with receiving Likes could influence how they feel about themselves, or how closely they try to monitor their behavior online.

Another limitation is that our sample was likely comprised of "power users." Previous work found that participants Liked friends' content 14 times per month on average and received Likes 20 times per month [16]. The authors attributed this imbalance to Facebook "power users"—those who perform activities such as Liking and commenting more often than the typical user — and noted that most Facebook users "get more than they give." Our participants had much higher numbers than their reported average (roughly 313 Likes given per month (median) and 269 Likes received (median)); these participants are likely the "power users" to which Hampton and colleagues refer. Compared to a random sample of U.S., English-speaking users, our sample gave 86.5 more Likes per week and received 76.4 Likes more per week (p < .001).

Participants were only asked about receiving Likes in general and not about Likes on specific types of posts. For instance, people's attitudes toward receiving Likes on articles they share may be different from their attitudes on updates about major life events. In addition, though participants reported most wanting Likes from close ties, under some life situations such as a lost job, interactions from close friends may be unwanted [3]. Future research should explore people's attitudes about Likes across different types of posts and different emotional states in order to understand contexts in which people's attitudes about Like vary.

A number of additional studies could be conducted as follow-up inquiries to the results presented in this paper. For instance, researchers could explore the relationship between the number of Likes received and other behaviors on Facebook, which was out of the scope of the current work. Or, researchers could examine the role of expectations about Likes and actual Likes received on subsequent Liking or posting behavior. Researchers could also examine whether people are satisfied when they receive "enough" Likes as well as how getting more or fewer than enough affects mood or well-being. Overall, we view this work as an initial inquiry into the experience of receiving lightweight feedback that can inform future research on the role of feedback in social media.

CONCLUSION

This work demonstrates that lightweight feedback, despite requiring little effort to produce, is important to social media users. We found that many people care more about whom they get feedback from, rather than the exact amount of feedback received. In addition, individual traits like self-esteem and self-monitoring influence people's attitudes toward lightweight feedback.

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REFERENCES

 Michael S. Bernstein, Eytan Bakshy, Moira Burke, and Brian Karrer. 2013. Quantifying the invisible audience in social networks. CHI 2013, 1462–1471.

- 2. Moira Burke. 2011. Reading, writing, relationships: The impact of social network sites on relationships and well-being (Doctoral dissertation, Carnegie Mellon University). http://reports-archive.adm.cs.cmu.edu/anon/anon/usr/ftp/hcii/CMU-HCII-11-107.pdf
- 3. Moira Burke and Robert Kraut. 2013. Using Facebook after losing a job: Differential benefits of strong and weak ties. *CSCW* 2013, 1419–1430.
- 4. Moira Burke and & Robert Kraut. 2014. Growing closer on Facebook: Changes in tie strength through social network site use. *CHI 2014*, 4187–4196.
- 5. Moira Burke, Cameron Marlow, and Thomas Lento. 2009. Feed me: motivating newcomer contribution in social network sites. *CHI 2009*, 945–954.
- Brent M. Donnellan, Frederick L. Oswald, Brendan M. Baird, and Richard E. Lucas. 2006. The mini-IPIP scales: Tiny-yet-effective measures of the big five factors of personality. *Psychological Assessment*, 18(2), 192–293.
- 7. Ellison, N., Steinfield, C., & Lampe, C. (2007). The Benefits of Facebook Friends:" Social Capital and College Students' Use of Online Social Network Sites. *Journal of Computer-Mediated Communication, 12*(4), 1143–1168.
- 8. Nicole B. Ellison and Jessica Vitak. 2015. Social network site affordances and their relationship to social capital processes. In S.S. Sundar (Ed.), *The Handbook of the Psychology of Communication Technology* (pp. 205–227). Hoboken, NJ: Wiley-Blackwell.
- Nicole B. Ellison, Jessica Vitak, Rebecca Gray, and Cliff Lampe. 2014. Cultivating social resources on social network sites: Facebook relationship maintenance behaviors and their role in social capital processes. *Journal of Computer-Mediated* Communication, 19, 855–870.
- Facebook's growth in the past year. 2013. https://www.facebook.com/facebook/photos/a.1015190 8376636729.1073741825.20531316728/101519083768 31729/
- Facebook Help Center. 2015. "How News Feed Works." https://www.facebook.com/help/327131014036297/
- 12. Scott L. Feld. 1991. Why your friends have more friends than you do. *American Journal of Sociology*, 96(6), 1464–1477.
- 13. Amanda L. Forest and Joanne V. Wood. 2012. When social networking is not working: Individuals with low self-esteem recognize but do not reap the benefits of self-disclosure on Facebook. *Psychological Science*, 23(3), 295–302.
- Paul T. Fuglestad and Mark Snyder. 2009. Selfmonitoring. In M. Snyder, M. R. Leary & R. H. Hoyle

- (Eds.), Handbook of individual differences in social behavior (pp. 574–591). New York, NY: Guilford Press
- Jeffrey A. Hall and Natalie Pennington. 2013. Selfmonitoring, honesty, and cue use on Facebook: The relationship with user extraversion and conscientiousness. *Computers in Human Behavior*, 29, 1556–1564.
- 16. Keith N. Hampton, Lauren Sessions Goulet, Cameron Marlow, and Lee Rainie. 2012. Why most Facebook users get more than they give: The effect of Facebook 'power users' on everybody else. Pew Research Center's Internet & American Life Project. http://pewinternet.org/Reports/2012/Facebookusers.aspx
- 17. Joinson, A. N. 2004. Self-esteem, interpersonal risk, and preference for e-mail to face-to-face communication. *CyberPsychology & Behavior*, 7(4), 479–485.
- Mark R. Leary, Ellen S. Tambor, Sonja K. Terdal, Deborah L. Downs. 1995. Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology*, 68(3), 518–530.
- Richard D. Lenox and Raymond N. Wolfe. 1984.
 Revision of the self-monitoring scale. *Journal of Personality and Social Psychology*, 46(6), 1349–1364.
- 20. Eden Litt and Eszter Hargittai. 2014. A bumpy ride on the information superhighway: Exploring turbulence online. *Computers in Human Behavior*, *36*, 530–529.
- 21. Mary Madden, Amanda Lenhart, Sandra Cortesi, Urs Gasser, Maeve Duggan, Aaron Smith, and Meredith Beaton. 2013. Teens, social media, and privacy. *Pew Research Center's Internet & American Life Project*. http://www.pewinternet.org/2013/05/21/teens-social-media-and-privacy/
- 22. Jennifer N. Morey, Amy L. Gentzler, Brian Creasy, Ann M. Oberhauser, and David Westerman. 2013. Young adults' use of communication technology within their romantic relationships and associations with attachment style. *Computers in Human Behavior*, 29, 1771–1778.
- 23. Zizi Papacharissi and Andrew Mendelson. 2011. Toward a new(er) sociability: Uses, gratifications and social capital on Facebook. In S. Papathanassopoulos (Ed.), *Media Perspectives for the 21st Century* (pp. 212–231): Routledge.
- 24. Pew Internet Report. (2014) http://www.pewresearch.org/fact-tank/2014/02/03/6-new-facts-about-facebook/

- 25. Tamara Peyton. 2014. Emotion to action?:
 Deconstructing the ontological politics of the "Like" button. In T. Benski & E Fisher (Eds.), *Internet and Emotions* (pp. 113–129). New York, NY: Routledge.
- 26. Morris Rosenberg. 1965. *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Craig Ross, Emily S. Orr, Mia Sisic, Jaime M. Arseneault, Mary G. Simmering, and R. Robert Orr. 2009. Personality and motivations associated with Facebook use. *Computers in Human Behavior*, 25, 578–586.
- 28. Lauren Scissors, Michael Roloff, and Darren Gergle. 2014. Room for interpretation: The role of self-esteem and CMC in romantic couple conflict. *CHI 2014*, 3953–3962.
- 29. Andrew D. Smock, Nicole B. Ellison, Cliff Lampe, and Donghee Yvette Wohn. 2011. Facebook as a toolkit: A uses and gratification approach to unbundling feature use. *Computers in Human Behavior*, *27*, 2322–2329.
- 30. Mark Snyder. (1974). Self-monitoring of expressive behavior. *Journal of Personality and Social Psychology*, 30(4), 526–537.
- 31. Stephanie J. Tobin, Eric J. Vanman, Marnize Verreynne, and Alexander K. Saeri. 2014. Threats to belonging on Facebook: lurking and ostracism. *Social Influence*, 10(1), 31–42.
- 32. Catalina L. Toma and Jeffrey T. Hancock. 2013. Self-affirmation underlies Facebook use. *Personality and Social Psychology Bulletin*, *39*(3), 321–331.
- 33. Joseph B. Walther and Malcolm R. Parks. 2002. Cues filtered out, cues filtered in: Computer-mediated communication and relationships. In M. L. Knapp & J. A. Daly (Eds.), *Handbook of Interpersonal Communication*, 3rd edition (pp. 529–563). Thousand Oaks, CA: Sage.
- 34. Joseph B. Walther, Brandon Van Der Heide, Sang-Yeon Kim, David Westerman, and Stephanie Tom Tong. 2008. The role of friends' appearance and behavior on evaluations of individuals' on Facebook: Are we known by the company we keep? *Human Communication Research*, 34, 28–49.
- 35. Joseph B. Walther, Brandon Van Der Heide, Lauren M. Hamel, and Hillary C. Shulman. 2009. Selfgenerated versus other-generated statements and impressions in computer-mediated communication: A test of warranting theory using Facebook. *Communication Research*, 36(2), 229–253.