Article

Unexpected expectations: Public reaction to the Facebook emotional contagion study

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Abstract

How to ethically conduct onllne platform-based research remains an unsettled Issue and the source of continued controversy. The Facebookemotional contagion study, In which r esearchers altered Facebook News Feeds to determine whether exposure to emotional content Influencesa user' s mood, has been one focal point of these discussions. The intense negative reaction by the mediaand public came as a surprise to those Involved-b ut what prompted this reaction! We approach the Facebook study as a mediated controversy that reveals disconnects between how scholars, t echnologists, and the public understand platform-based research. We examine the contr oversy fr om the bottom up, analyzingpublic r eactions expressed In comments on news artlcles. Our analysis reveals fundamental disagreements about what Facebook Is and what a user' s r elationship to It should be. We argue that these divergent responses emphasizethe contextual nature of t echnology and research ethics, and conclude with a relational and contextua l approach to ethical decision-making.

Keywords
Controversy analysis, Facebook, nonuse, platform studies, privacy, research ethics

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Int r oduction

The publication of "Experimental Evidence of Massive-Scale Emotional Contagion" (Kramer et al., 2014) in the *Proceedings of the National Academy of Sciences (PNAS)* on 2 June 2014 set the Internet ablaze. Reactions on Twitter expressed sbock and outrage that Facebook was "LITERALLY playing with users' emotion"s (Altmetric, n.d). News repons echoed and amplified public sentiment, with headlines such as: "How Facebook's *news* feed controls what you see and bow you feel" (Steadman, 2014), "Facebook totally screwed with a bunch of people in the name of science" (Frizell, 2014), and "So you are shocked Facebook did #psyops on people?" (Silberg, 2014). In the midst of the controversy, The *Guardian* conducted a reader poll where 61% of respondents reported that they were surprised to learn about the study, 84% bad lost trust in the social network, and 66% were considering closing their account (Fisbwick, 2014). One of the researchers involved in the study received hundreds of concerned emails from members of the public following the media attention (Hancock, 2019). As a result of the negative publicity and public reaction, both Facebook and the article's lead author issued apologies (D'Onfro, 2014; Hiltzik, 2014) and *PNAS* issued a statement of editorial concern (Verma, 2014). The various apologies revealed that the negative backlash to the study came as a surprise to the researchers, the journaL and Facebook. Though the technological architecture of Facebook bas long sbaped possibilities for expression and social interaction, the discussion surrounding the Facebook emotional contagion (FEC) study highlighted the implications of the technological architecture for the general public and raised ethical questions about conducting research on online platforms.

But wbat did the study, described as "amazing scifi reading" (Altrnetric, n.d.), actually entail? Conducted as a collaboration between Facebook and academic researchers, the FEC study sought to both replicate laboratory experiments and longitudinal studies on the transference of emotions, or "emotional contagion" (Fowler and Cbristakis, 2008; Hatfield et al., 1993; Rosenquist et al., 2011), and test the claim from prior research that repeated exposure to positive content on Facebook was trtaking its users *,mhappy* due to negative social comparisons (Turkle, 201I). To this end, the researchers designed and conducted an experiment on nearly 700,000 English-speaking Facebook users in which they modified users' News Feeds, the algorithmically sorted feature that organizes and displays content generated from a user's list of friends, according to the results of automated sentiment analysis (Pennebaker et al., 2007). One group saw a higher concentration of positive conte,nt one group saw a higher concentration of negative content, and one group saw less emotional content of any variety. By comparing the sentiment and frequency of user posts before and after the experimet, researchers found that users exposed to higher concentrations of emotional content were slightly more likely to feature similar emotional content in their own Facebook posts for up to 3 days after exposure, and users exposed to less emotional content showed a slight decrease in engagement with the site, posting less frequently and with fewer words (Kramer et al., 2014). In short, the study offered evidence of some emotional contagion on Facebook and challenged the idea that exposure to positive content was trtaking people sad, based on an assumption that the word choice of Facebook posts offers a reliable indicator of a person's emotional state.

In the wake of controversies such as the FEC study and the Cambridge Analytica scandal of 2018, there bas been a pronounced interest in the ethics surrounding social media

research (Brown et al., 2016; Stark, 2018; Vitak et al.,2016). While issues of privacy and data use have received the most attention, the FEC study points to another important and unresolved issue-bow to ethically conduct oolioe platfonn-based research. The controversy that followed the publication of the FEC study provides a unique opportunity to examine responses to social computing research from members of the general public, including those who might have negative attitudes toward research or toward Facebook (e.g. Facebook nonusers). To study public reaction we collected thousands of comments left on news articles about the FEC study. Our primary goal was to develop a deep understanding of perceptions of and attitudes toward the controversy, and by extension research ethics for social computing platforms generally. As a result, our analysis was driven by a set of exploratory research questions: what were the patterns of public responses? What issues and considerations were most important to commemers? Simplistically, why were people so upset about this study, and what can we learn from that?

Public reactions have the potential to be an important resource for bottom-up approaches to ethical decision-making and the research ethics community generally {Nebeker et al., 2017)--especially given the prominence of normative, top-down approaches to ethical issues. However, this work faces an ioberem challenge: those most negatively impacted by research and those with the most negative attitudes toward research are least likely to have their voices beard *within* research (Fiesler and Proferes, 2018). Studies that are interested in understanding bow the public perceives and feels about research ethics typically involve deception {Hudson and Bruckman,2004) or face an ioberem selection bias toward those willing to participate in a research study (Fiesler and Proferes, 2018; Schechter and Bravo-Lillo, 2014; Williams et al., 2017). How can we take into account other relevant voices, including those that are uninterested or unwilling to participate in research? One solution is to borrow from controversy analysis (Marres,2015; Marres and Moats, 20I5) and studies of mediated public reactions (Fiesler and Hallinan, 2018; Vines et al., 20I3), which is the strategy we employ in our examination of comments on news articles.

Th eo re t ical foun datio ns

Our analysis of public reaction to the FEC study brings together two related research traditions: (1) controversy analysis from science and technology studies and (2) expectancy violation theory (EVT) from communication. Together, these traditions provide a framework for understanding the significance of public reaction to technology controversies.

Controversy analysis establishes the value of using mediated controversies to study contested issues alongside the role of contemporary media and communication technologies (Marres, 2015; Marres and Moats, 2015), drawing attention to beliefs and values that might otherwise be overlooked or taken for granted. For example, an analysis of the Facebook Trending Topics controversy showed that news repons on the practices of the human curatioo team acted as a proxy for discussion about larger shifts in the news media environment (Carlson, 2018). While public expectations for Facebook typically go unstated, catalysts such as the publication of the FEC study can bring these underlying views into the foreground and reveal tensions and vulnerabilities at work in the social integration of technologies (Goodnight, 2005). Lo other words, mediated

controversies can reveal larger tensions within the cultural positioning of technology (Satchell and Dourish, 2009).

EVT bolds that individuals have expectations about the communicative behavior of others and the violation of those expectations causes people to assess their knowledge of and relationship to others (Burgoon and Le Poire, 1993). Variables that influence expectations include characteristics of the communicator, the relationship, and the context (Burgoon and Le Poire, 1993; Griffin et al., 2011). While the theory was developed in the context of interpersonal face-to-face interactions, more recent work bas extended the theory to computer-mediated contexts-for example, norms of interactions on Facebook (Bevan et al., 2014; McLaughlin and Vitak, 2012). Design choices and features of social media platforms also shape the possibilities and expectations for interaction. Previous research bas examined expectations for particular features, including the Facebook Like button (Scissors et al., 2016), algorithmic curation (Bucher, 2017; Eslami et al., 2015; Rader and Gray, 2015), and design changes (Eslami et al., 2016). Together, this work demonstrates that user expectations shape assessments about the experience of social media and the desirability of particular features and practices.

Where EVT research points to the gap between knowing that expectations have been violated and knowing what those expectations are (Sbklovski et al., 2014), controversy analysis prompts consideration of wbat large, underlying factors may beat work behind the scenes. The analysis that follows demonstrates bow an understanding of expectations about platforms can contribute to ethical decision-making for researcher.s

Methods

To examine public reaction, we collected and analyzed public comments on news articles about the FEC study. Analyzing the content of online news comments offers a time and resource efficient way to study public reactions (Henrich and Holmes, 2013). Previous research bas used public comments to study public views on ethical and political issues related to the use of medical technologies (Chandler et al., 2017), climate change (De Kraker et al., 2014), online privacy (Fiesler and Hallinan, 2018), and even bumao-computer interaction (RC)) research (Vines et al., 2013). While the framing of news articles can impact comments, the FEC study was fundamentally a mediated controversy: people learned about the experiment through the publication of the research and subsequent news coverage. Therefore, it is neither possible nor des irable to separate public reaction from media coverage, since engagement with the media becomes the central site for people to analyze and understand the controversy.

As participant-driven responses, comments help reveal issues of public importance (Chandler et al., 2017; Henrich and Holmes, 2013), which *is* particularly important for ethics research. Comments also capture reactions and sense-making practices as they unfold and provide access to the perspectives of people who may not have social media accounts or do not use social media frequently, potentially surfacing more critical or antagonistic perspectives than user-centric social media research (Satchell and Dourish, 2009). Finally, studying public comments helps address a known limitation of ethics research: participant response bias (Fiesler and Proferes, 2018). Where surveys, interviews, and lab studies on research ethics are limited to the perspectives of those who are

willing to participate in research, news comments are not subject to the same limitations. News comments provide a broader sample of ooline groups. Although news comments do introduce new biases- namely, people with Internet access willing to comment on news articles- they provide access to the reasoning behind different opinions. In addition, news comments are particularly impactful opinions, with previous research showing that public comments shape the views of other readers (De Krake et al., 2014). This influence, combined with the potential to access nonusers and people uninterested in participating in research studies, makes the analysis of news comments a valuable complement to other ways of studying public reaction.

However, there are ethical considerations with respect to the collection and analysis of public data. While this is a common practice in social computing resear,ch there are disagreements within the research community about the ethics of, for example, whether to include quotes verbatim and bow-if at all-to attribute authorship of quotes (Vitak et al., 2016). Although comments are publicly available information, a best practice for making ethical decisions about the use of public data is to consider the specific context and the expectations of the people involved (Fiesler and Proferes, 20I8; Nisseobaum, 2004). Arguably, comments on news sites are more "public" than some other forms of social data- that is, data from social networking sites-because comments are addressed to an audience of strangers rather than a known community of friends or followers. Commenting on a news article also indicates an interest in making one's viewpoint known, and in the FEC study, commenters were weighing in on research ethics and the practices of social media platforms, which aligns with the context and motivations of this article. After weighing potential risks to those whose content was part of our analysis, we have decided to include quotes verbatim, without identification, which is consistent with other thematic analyses of news comments (Chandler et al., 2017; Fiesler and Hallinan, 2018; Giles et al., 2015; Glenn et al., 2012; Vines et al., 2013), and also to choose illustrative quotes that are not easily discoverable through a simple web search and that do not reveal any personal or sensitive information.

Data collection

In order to construct a dataset of public comments, we identified a set of articles starting with law professor and privacy advocate James Grimmelmaon's (2014) collection of Internet coverage about the FEC study. Because Grimmelmaon's article set included personal blog posts as well as journalist reporting, we narrowed the set into articles from news outlets that contained at least one comment, which resulted in 12 articles from that collection. Given that the earliest article on the list was published on 30 June 2014, nearly a month after the initial publication of the FEC study, we supplemented the collection with eight additional articles published prior to that date, identified using a keyword search ("Facebook+ Research") on LexisNexis and Google News for pieces published between I June and 30 June 2014. Our criteria for inclusion were that the article was (I) primarily about the FEC study; (2) written in English; and (3) included at least one comment; this supplemeota systematic method of adding additional articles also ensured that we included a broader set of news sources than may have been included by Grimmelmaon. Our final dataset included comments from 20 articles from the

following news sources: *The Atlantic* (3), *Slate* (I), *Forb es* (3), *Th e New York Tim es* (3), *Th e Guardian* (2), *Wired* (I), *WallStreet Journal* (3), *The Washington Post* (1), *Financial Times* (I), *The Telegraph* (I),and *The Chronic/ e of Higher Education* (I). Although this was nota criterion for inclusion, all the articles were published by organizations based in the United States and the United Kingdom. Our search uncovered a few articles published in English in othercountries, but none included comments. Therefor,e in addition tothe limitations with news comments asa data sourcegenerally, this data may bebiased toward Western voices or toward newsoutlets with subject matter or ideologi cal leanings thatcould have influenced the decision tocover thisstoryandour resultsshould be interpretedwiththisinmind. We manually collected all available comments on the articles, includingtop-levelcomments and replies. Ourfinal dataset consisted of 2790 total comments from 20 uniquearticles. The number ofcomments on an article ranged from 2 to 850 *(M*=140;*SD*=215.13; median=42).

Data analysis

Driven by our exploratory research questions, we performed a thematic analysis (Clarke andBraun, 2006)ofthedata. As one ofthe most common approaches for studying online comments (Chandleret al., 2017; Giles et al., 2015; Holton et al., 2014; Silva, 2015; Vines et al., 2013) , thematic analysis excels at revealing patterned responses in the data especially when the analysis is concerned with meaning or explanation (Clarke and Braun, 2006). We began ouranalysiswiththequestion:"Whatbotheredpeopleaboutthe study?" We open coded individual comments and then developed themes inductively following the recursivesteps outlined byClarkeand Braun (2006). Two of the authors met periodically to share and reconcile differences in coding, create memos, and to derive the themes discussed in the followingsection.

Fin dings

Although comment sections are notoriously antagonistic spaces, distinct patterns emerged from the thematic analysisof our data. Here, we focus on four major themes thatrepresentpublicreactions,whichwehavelabeled"Livinginalab,""Manipulation anxieties," "Wake up, sheeple," and "No bigdeal." Across these themes, we £ind diver gent and contradictory understandings of Facebook as a platform, along with repeated surprisethattheseunderstandingsarenotuniversally shared.Asit turnsout, theresearchersbehindtheFECstudy,*PNAS,* andFacebook were not theonly onessurprisedby the reaction to the study. Some members of the public were also surprised by the expectations of their peers; in other words, there appears to be no "common" sense when it comes tosocial media research.

Uving in a lab

The publication of the FEC study came as a surprise to some commenters who did not know that Facebook conducted experiments or collaborated with academi c researchers. Their reactions were less about the specifics of testing emotional contagion and more

about the revelation of experimentation as a general practice. In other words, the announcement of any experiment would violate the implicit understanding of Facebook as a place for people to connect with friends and family:

> Dear Mr.Zuckerburg, Last I checked, we did 001 decide to jump in a petri dish 10 be utilized at **your disposal** . . . **We connect with our loved ones.**[1]

As the reference to a petri dish suggests, the concern is with the idea of researc r "secret experiments"-taking place on online platforms. Furthermore, the concern with experimentation often conflates very different models of resear,ch including academic resear,ch collaborative research between academics and corporations, and applied commercial research. The tendency to conflate all forms of platform-based research into a single category is facilitated by a lack of awareness about research practices-indeed, previous research bas found, for example, that nearly two-thirds of Twitter users did not know that academic researchers use public social media data (Fiester and Proferes, 2018).

The temporal dynamics of online experiments further complicate the understanding of research on Facebook. Lab-based experiments conventionally have an obvious stan and endpoint, making it clear when someone is (and is not) participating in research. With platform-based experiments, participants often have no knowledge of their own participation. In the case of the FEC study, Facebook users did not know about the experiment until it appeared in the media. Even then, people bad no way of determining whether their own News Feed bad been affected, despite their expressed interest- indeed, the question comes up repeatedly in our data, and one of the authors of the study received many emails with this question (GoeL 2014; Hancock, 20I9). The uncertainty over participation and the lag in awareness created a sense of secrecy around research and prompted commenters to question what other kinds of experiments might be happening:

> This was two years ago? Who knows what they' re doing now.

Commenters overwhelmingly characterized scientific research as negative and exploitative. Some compared the contagion study with other controversial experiments such as the Stanford prison experiment (Recuber, 2016) and Nazi medical experimentation. Others invoked the language of biomedical experiments, comparing the treatment of Facebook users with that of animal test subjects-"lab rats" or "guinea pigs"- framing scientific research as inherently dehumanizing and without benefit to the experimental subject:

> At least lab nus get paid in chow. How does Facebook compensate its users to be sitting ducks for algorithms?

Even among comments defending the legitimacy of scientific research, there was little attention to any benefits, actual or potential, of the FEC study, which indicates a disconnect between the researchers' concern with the potential negative emotional consequences of social media (Kramer et al., 2014) and the concerns expressed in public comments. The scientific value of the research and its contributions to improving user experience are not so much debated as dismissed outright; instead, comments typically

frame the value of the study as serving the interests of researchers disconnected from "real world" concerns or as a proof-of-concept for the emotional exploitation of Facebook users. Where institutional decisions concerning research ethics are typically made by weighing harm and benefit judgments from the public rarely expressed consideration for the benefit side of the equation.

These comments about "living in a lab" support the idea that some members of the public cared about the lack of transparency and consent, as well as the power dynamics between researchers and those being researched. However, concerns about experimentation were not isolated to the FEC study and instead point to discomfort with the idea of any experimentation on Facebook. Such concerns were compounded by a lack of understanding for how the research could be in service to the interests of Facebook users. As one commenter explained, the experiment demonstrated that Facebook "will pervert its stated objective of facilitating communication." Without trust in the value of the research for Facebook users, the negative and exploitative associations of scientific research proliferated.

Manipulation anxieties

For other commenters, the FEC study was upsetting because of what the research suggested about Facebook's powers of manipulation. While the term "manipulation" appears only once in the original publication and nowhere in the press release, it is repeated constantly in news headlines, articles, and public comments. The surprise and outrage over the "manipulation" of the News Feed suggest that many people did not realize that the *News* Feed selects and displays content in a particular order, or these people bad assumed that content was selected according to a fair and objective standard. For example, one comment argued that Facebook "is supposed to be a neutral arbiter for its services."

The lack of familiarity with how the News Feed works aligns with prior research (Eslami et al., 2015) and helps explain why the manipulation aspect produced such intensely negative reactions: the experiment revealed not only a single time-and-population-limited instance of manipulation, but also that manipulation is endemic to the operation of the News Feed. In other words, commenters were upset both about the experimental manipulation and about the *existence* of any News Feed algorithm.

Fairness is a commonly stated reason for anxiety around manipulation, tracking to findings of focus-group research on social media data mining concerns (Kennedy et al., 2015). While some commenters considered any form of manipulation to be a self-evident violation of ethics, others were worried about the specific context of manipulation on Facebook. These folks were worried that changes to the News Feed could cause them to miss out on important posts, such as an announcement of good news or a call for help:

> If you were one of the friends of the almost 700,000 users, but a piece of [your) news. . . didn't get posted. . . and Ibis messed with your relationship to the other user? More people than *just* **the research subject were manipulated.**

From this perspective, manipulating the order of the News Feed simultaneously manipulates relationships between people that extend beyond those directly involved in

the experiment. The concern over missing imponant content aligns with lab-based research on user reactions to revelations about the existence and operation of the News Feedalgorithm(Eslamiet al.,2015).However,manycommenterstooktheconcernwith manipulation to more extreme ends. Our data include considerablespeculationabout the future implicationsof this research. The exuapolations were guided by examplesfrom dystopic fiction, such as *1984* and *Brave New World,* and also by fears concerning politics, control, and conspiracies:

> Lets see if The Algorithm can rea-ospectively identify the users who got the downer feeds, and when. Also those who got the happy feeds. Then there is even more useful data to **be** had, by medical professionals: compare the data injections against the use of health services, **hospializatias** etc. **for the downers cohon and against manic spending sprees for the uppers recipient.sAfterthat's completed, the guinea pigs can be infonned of what was done to them,** unless , of course, yet another health-related use can be found for the data.

Some commenters justified their far-reaching, grim extrapolations by pointing to the general lack of transparency surrounding Facebook's practices. The public's surprise acts asevidence ofa lack of transparency, even as Facebook doesdisclose some information about their use of data in official policies, public-facing research, and statements to the press. The adequacy of such disclosures is outside the focus of this article, though just because information is technically available does not mean it is effectively so,as evidencedby the extensive research showing that peopledo not read platform policies(Martin, 2016a). As these patterns of response make clear, public perceptions of transparency do not necessarily align with company practices(Fiesler and Hallinan,2018; Martin, 2015).

Othercommenters justified their dark speculations by pointing to the subject of manipulation: emotions. For these commenters, emotional manipulation is a touchstone that enablesthemanipulationofwbatsomeonethinks, believes,anddoes--even who they are. The personalsignificanceof emotions ups the stakes significantly, such that the experiment is understood as manipulating notonly userexperience, but also the very identity of theuser.This kindof power isseen ashaving drasticpolitical consequences thatcan sway elections orcreate, in the words of one commenter, a "herd of docile consumers":

> Don't be foo led, manipulating a mood is the ability to manipulate a mind. Political owcomes, **oommerce, and civil unrest are just a shon listof things that can be controlled.**

There are also concerns about the relationship between emotional manipulation and mental health. Participants in theexperiment receiveddifferent treatments: the News Feeds of onegroup prioritized negative conte,nt which some commenters interpreted as Facebook intentionally making peoplesad.This group received significantly more attention from comments than the group exposed toa higherconcentration ofpositivecontent or the group exposed to less emotional content overall. Anethical response survey conducted sbonly after thecontroversy broke(Schechter and Bravo-Lillo, 2014) also found greater suppon fora versionof the study that onlyadded morepositivecontent toNews Feeds. The addition of negative content is seen as a particularly harmful form of

manipulation, a view compounded by concerns that the sample population could have included vulnerable populations:

> Faecesbook [sic] is evil. What if one (or more) of their users (or victims) had been depressed and on the edge of suicide? Murdered for Zuclmbergs greater profits?

The extreme stakes of manipulation-from total political control to mass suicide-- may seem out of place given the relatively minor treatment (tweaking the order in which content appears in the News Feed according to sentiment analysis of word choice) and the small effects size of the study's findings (Kramer et al., 2014). Indeed, the findings of the study could only be significant at the scale of a massive platform like Facebook with billions of users. However, the concerns expressed in public reaction posit a much more dramatic scale of effects and make it apparent that many people do not have an accurate frame of reference to interpret these kinds of harms--0r benefits.

Wake up, sheep/e

Not all commenters expressed surprise about the FEC study. The theme "Wake up, sheeple" brings together comments that interpret the FEC study as a confirmation of pre-existing negative views of Facebook. These comments take a position of being profoundly unsurprised, seeing the experiment as a confirmation of the way they already understand and relate to Facebook. Similar to the "Manipulation anxieties" theme, these comments paint a negative, even dystopic picture of Facebook-but these comments also lack any sense of surprise. Experimentation and manipulation appear to be ordinary and expected behavior when considered alongside accounts of Facebook's past bad behavior, negative perceptions of social media and Silicon Valley generally, or sharp critiques of the larger economic order. The comments tend to argue that other people need to "wise up" and either accept that this is the way the world works or opt out of using social media entirely, an attitude that bas surfaced in prior work examining public reactions to privacy controversies (Fiesler and Hallinan, 2018):

> The minute anyone signs up for membership to ANY group, you know that you are going to be manipulated. Ever hear the word SHEEPLE?

This antagonistic stance allows commenters to affirm their own positios, knowledge, and decisions. It also discredits the reactions of others, treating all aspects of the controversy as things that Facebook users should already expect. In doing this, the commenters shift accountability away from the company or the researchers and toward individual Facebook users:

> **Anyone who doesn't realise that anything you put "out there" on Facebook (or any other social** media site) is like shouting it through a bullhorn should have their internet competency licence **revoked. We can't blame all srupidiry on some or other conspiracy** . . .

It is notable that many of the people whose comments fell into this theme also identified as nonusers of Facebook. Some commenters framed their nonuse status as a value

judgment against those who use social media. Other commenters argued that people should follow theirexampleanddecide toleave social media. Thesecomments reframed the Facebook user base, arguing that users are actually the product that is sold toadvertisers, the"real users" ofFacebook. lo theseexplanations, commenters frequently shame others for not having the same expectations they do:

> Facebook is akin to an open corral baited with fake food; the herd gathers instinctively, but **receives nonourishment** . . . **Get wise, people.**

What exactly should people wise upabout? Ourdata point tothe behavior and practices of Facebook, of Silicon Valley, and of any service that is "free." Rather than focusing on the study itself, the thrust of the indictmentis that other people failed to recognizeanobvious situation. However, even with this framing, there are substantial differences in opinion about what is considered obvious and bow people should respond. Some call forthe wholesale rejection ofsocial media and testify to their own ability to get by without it. Others call for the adoption of a nihilistic attitude: this is the way the world works and all you can do is resign yourself to thefacts. Despite disagreement over the solution, these commenters agree that theattitudes and actions of anyone who is outraged are the crux of the proble,m not the experiment itself or the practices of the platform.

No big deal

Finally, even among the outrage, some commemers indicated that they bad no issues withtheFECstudy-notnecessarilybecausetheyjudgeditetbicaL butratherbecauseit was not just unsurprising but also unremarkable. It aligned with their expectations, whether for Facebook, advertisiog-supponed media, or corporations generally:

> The only thing *that* surprises me abom this study is that anyone is surprised. Purveyors of **information routinely attempt tomanipulate their audiences and always have** ...

Similar to the "Wake up, sbeepl"e theme, these comments take the experiment as confirmation of their expectations and understanding of the platform. However, in contrast, these comments assess thesituationas unproblematicand, if any action is required, it is the need for education about what Facebook is and bow it works.

The views of some comments in this theme most strongly align with those of the researchers and with Facebook itself. Many commeoters shared the view that there bad been miscommunication or misunderstanding; as a result, comments explain different aspects of thesituation, including the prevalenceof A/B testing, industry researc,hand the general operation ofthe News Feed. Unlike those who were alarmed because oftheir ignorance of News Feed algorithms, these commemers formed expectations based, in part on their understanding of those algorithms:

> A/B testing (i.e. basically what happened here) when software companies change content or **algorithms for a subsetof users happens •al l the time•.** It's **standard industry practice.**

Other commemers argue that emotional manipulation is not a concern because individuals have the ability to resist manipulation, whether through a skeptical disposition, education, or will power. As one commenter put it, users are "masters of their own minds" and cannot be so easily swayed by a website.

For others, Facebook's actions are typical of any corporation; a company is entitled to pursue its own policies and interests and if people do not like the practices of a company, they can simply choose not to use its services. This echoes the control model of privacy and suppons a market approach to regulation (Martin, 2016b):

> They can do whatever they want with their platform. Period. Build your own if you want to set the rules.

Other commenters point out that this *is* nothing new, referencing other forms of manipulation or persuasion, from advertising and marketing, to political spee,ch to everyday interactions. Where commenters expressing "manipulation anxieties" also considered the broader contexts for manipulation, the difference here is the normalization of manipulation *as* mundane rather than a dystopic version of a possible future:

> **So what's new? The raison d'@tre for all media, even before the printing press. was to influence our emotions, secretly or othetwise.**

Both this theme and "Wake up, sheeple" argue that the controversy surrounding the FEC study stems from a lack of public understanding of how social media works and propose communication solu tions- albeit with radically different understandings and solutions. From avoiding all social media to knowing oneself, from embracing nihilism to education about technology, the recommendations are divergent and contradictory. The problem of communication, then, is about more than strategies and tactics and *is* instead based on a more fundamental disagreement about what the platform is and what people should expect from it.

Disc ussion

We began this resear,ch in pan, with the hope that analyzing public responses would tell us what people found to be objectionable about the FEC study, and thus what the public perceived as " unethical" in platfom-based research. Our findings provide some answers to this question, including issues of transparency, manipulation, and the potential for future harm. However, just as the people involved in the research and publication of the FEC study were surprised by the public reaction to the study, our analysis reveals that members of the public were also surprised by the values and expectations of their peers. While the use of Facebook and other online platforms is widespread and frequent, a common pan of people's daily experienc,e the differences expressed in the comments of news articles about the FEC study highlight the lack of consensus around what these platforms are, bow they should operate, and the role of platform-based research. In other words, the norms surrounding online platforms are neither unified nor settled. As a res,ult there is no single answer to what bothered people about this research, which means there is no single answer to what needs to be "fixed."

While our findings do not suppon a one-size-fits-all solution to ensuring ethical research and avoiding controversy, our findings do suppon the imponance of thinking about platform-based research holistically— that is, considering the relationship between academic research, collaborative research between academic and corporate researchers, and industry research both basic and applied. Although the FEC study was the product of a collaboration between academic and Facebook researchers, commenters rarely engaged with the specificity of the setup regardless of their position on the research. For example, comments in the "Living in a lab" theme tended to group all research together into a nefarious and dehumanizing category exemplified by animal testing and Nazi medical experimentation, while comments in the "No big deal" theme tended to argue for the normalcy and imponance of research for improving commercial products. Cenainly, neither account accurately describes the comext or conduct of the FEC study. At the same time, the conflation of very different kinds of research cautions researchers against assuming that the public understands what platform-based research involves or why it might matter-<1uestions that should, in turn, guide the design and communication of research.

Just as there is no shared understanding of platform-based research, so too is there no shared understanding of the platforms themselves. Ethical considerations for platform-based research often begin from the terms set by the platforms themselves-for example, the desirability of algorithmically sorting content in the News Feed Despite formal agreement to a platform's terms of se1Vice, these terms are not necessarily known or accepted by all users, to say nothing of the broader public that includes users and nonusers alike. The assumption of a shared understanding of Facebook's News Feed algorithm and practices of research and experimentation made the negative reactions to the study genuinely unexpected to those involved. Cenainly, the FEC study is not an isolated instance of researchers "badly reading the room" when it comes to expectations about social media. The public's relationship-or rather, relationships-to platforms shape their assessment of research conducted on and about platforms. Facebook bas repeatedly struggled in comparison to other platforms and tech companies in terms of public trust (Newton, 2017). The pre-existing lack of trust in the platform helps explain some of the more extreme accounts of harm in the reaction to the FEC study, which in tum funher exacerbated issues of trust as *The Guardian* poll conducted in the wake of the controversy found (Fisbwick, 2014). Complementing other calls for contextually sensitive ethical decision-making (Fiesler and Proferes 2018, Jackman and Kane1Va, 2016), we suggest a *relational* approach to the ethics of platform research that highlights what our data suggests is a particularly imponant context that researchers should be considering: the public's relationship to online platforms.

This approach takes inspiration from work on relational ethics (Ellis, 2007), developed to guide interpersonal interactions for qualitative research. However, interactions on social media are not only interpersonal, but also involve human-machine communication, or interactions with technologies that reproduce aspects of human intelligence (Guzman and Lewis, 20I9). The News Feed and other forms of recommendation offer prominem examples of this technology on Facebook, selecting and organizing content in order to show people the "stories that matter most" (News Feed, n.d.). As a result, the platform functions as a kind of third party to social media research, and a particularly imponant party because the relationship between the platform and the research subjects

precedes and endures beyond the boundaries of any given study. Just as an ethnographer works to maintain good relationships with members of a community so that future researchers can obtain access to that community, so too should social media researchers consider ways of maintaining or improving relationships with their research populations. Such considerations may seem out of place for research practices that do not involve direct interpersonal interactions between researchers and research subjects-with the FEC study, for example, the research subjects bad no way of knowing that they were pan of an experiment. However, our findings illustrate that even experimental setups without interpersonal interactions can be perceived in veiy personal ways. These negative reactions can have a corrosive effect on trust for both platforms and research. How can we work to preserve a positive relationship instead?

For researchers, the first step in a relational approach to ethics involves understanding the public's expectations for platforms. Although EVT was initially developed in the context of interpersonal communication, it also offers a theoretical framework for ethical considerations of online platform-based research. Relying on formal practices such as institutional review or compliance with terms of service is unlikely to address user norms and expectations because social media users are often unaware of research talcing place on online platforms (Fiesler and Proferes, 2018), rarely read terms of service (Galbrai,th 2017), and interpret the meaning of formal policy documents according to pre-existing expectations (Martin, 2015). Given the limitations of these formal practices, researchers can develop better understandings of user expectations from empirical ethics research (Fiesler and Proferes, 2018; Kennedy et al., 2015; Schechter and Bravo-Lillo, 2014) and from the emerging literature on folk theories of platforms (Devito et al., 2018; Eslami et al., 2016). The analysis of news comments presented here contributes to this project and demonstrates the complemental)' value of this methodology as a way to bring in different voices and study the relationship between expectations and arguments.

The importance of diverse relationships to platforms suggests another strategy for ethical decision-making: researchers should broaden our understanding of ethical stakeholders to include nonusers. As our data illustrate, even people who do not use Facebook have expectations for the platfurm and are invested enough in these expectations to react publicly when they are violated. Nonusers are also stakeholders, both because they consider themselves to be *and* because as social media platforms grow in terms of features and users, the influence of platforms includes broad societal effects (Baumer et al., 2015; Satchell and Dourisb, 2009). Controversy analysis provides a way to surface beliefs and values that might otherwise be overlooked or taken for granted, even as these beliefs and values are central to the ways that people evaluate the actions of platforms- including research that takes place on platforms. Furthermore, the willingness of nonusers to make their interests and concerns public means that these perspectives fold back up on the pla-t form's user-base, shaping their expectations and concerns in tum. As a result, incorporating the expectations of nonusers into ethical decision-making can help anticipate controversies, push researchers to consider the public benefit of their research, and cultivate more beneficial ways of relating to platforms.

While we argue for the importance of considering a broader range of ethical stakeholders, we recognize that this is a challenging task. Just as previous research bas argued for the importance of understanding user expectations in ethical decision-malting (Fiesler

and Proferes, 2018; Manin,2015, 2016b; Schechter and Bravo-Lillo, 2014), ourfindingi; suggest that it is notfeasible(ordesirable) toidentify a setof basic expectations common to all users. The views expressed inthe "Wake up, sheeple" theme overwhelmingly begin from the premise that social media research is inherently unethical and that it either should beavoidedentirely or that its use requires resignationto an unethical system. It is difficult to imagine a meaningful baseline set of expectations that include this perspective alongside the expectations of those who endorsed the experiment and see a clear social value in Facebook. However, a better understanding of the different relationships people haveto platformsoffers an opponunity todevelop approaches that account forthe needs andexpectations of different relationships. Instead of simply telling people what their expectations should be, or inferring expectations from official policies (Gelinas et al., 2017), there is value in empirically studying expectations. In addition to formalized responses such as official policies that govern platform conduct, weshould consider initiatives designed to cultivate informal norms and expectations. Compared to other forms of regulation such as legislationor formal policies, norms offer greater flexibility to adapt to particular contexts and technological developments.

Expectation violation can have substantial ramifications on the public perception of research and-potentially-suppon for future research. Controversies can also drive change, such as the developmentand implementationof industry review of researchat Facebook (Jackman and Kanerva, 2016). The case of the FEC study offers some insight into what was poorly receivedandwhy. Wecan clearly say, for instance, thatan approach to platform-based researchbased on implicit consent for research via terms of service is unpopular among the commenting public. A study that places specific opt- in requirements on its participants, even if thestudy design is kept bidden, may be received more positively and resolve some of the more prominent concerns, including the cloud of secrecy around resear,ch not knowing if and when one bas been thesubjectof an experime,nt and the inclusionof vulnerable populations. Even an opt-out option could address some of these concerns, as it would allow people with specific objectionsto research to be removed from it without requiring them to stop using the platform entirely. Fundamentally, a relational approach to ethical decision-making for platform-based research begins with anunderstanding of public expectations for platforms and uses that understanding toinform the designand communication of research.

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Note

I.   Quotes are presented unaltered, as Ibey originally appeared in lhe data.

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