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How does Twitter affect users' worldviews?

I. Why do we care about Twitter specifically rather than social media more broadly?

I begin with the question, *does spending more time on Twitter lead people to have a less positive outlook on the world?* More precisely, *as people spend more time using Twitter (both passively consuming and posting their own tweets) are they more likely to have negative sentiments about their personal life and the state of the world?*

Social media has been blamed for a variety of ills since its inception. While many of these accusations reflect a lack of understanding or extreme edge cases of social media usage, it remains necessary to gain a deeper insight into the ways social media impacts our lives. Increasingly, people young and old are choosing to reduce their time on social media or abstaining entirely, suggesting that some believe social media is causing more harm than good in their lives.

While social media is often generalized into a broad group, each platform has a different set of tradeoffs for the user. For example, Instagram can be a great way to follow the events of friends and family and gives the user an opportunity to bask in the beauty of photography, but frequent usage has also been shown to lead to a deflated perspective on body image and a fear of missing out[1]. Despite this phenomena, many find it hard to leave Instagram, because it is highly addictive and feels like a view into people's lives with whom we otherwise lack frequent contact.

Conversely, Twitter is typically not used to keep up with the day to day experiences of friends and family. Instead, it is more typically used to follow celebrities, discover comedic content and learn about current events, especially from those who are underrepresented in traditional forms of media. While many gain a lot from using the site, Twitter is also famous for its inability to reign in the hoards of harassers that descend on feminists, people of color and others who hold opinions that anonymous internet-goers find objectionable. Despite the potential benefits of using the platform, an increasing number of prominent Twitter celebrities are taking a leave from the platform due to their perception that they are wasting their time and/or harming their mental health due to Twitter. This test seeks to determine whether Twitter is truly a driver of poor mental health and negative outlooks on life.

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[1] Brown & Tiggeman. [Attractive celebrity and peer images on Instagram: Effect on women's mood and body image.](#) 2016.

II. Ideal Test Setup

It should be relatively straightforward to find participants, because the qualifications will be anyone who uses or is willing to use Twitter for a period of time. Probably the easiest way to find the participants will be through sharing the survey on our social media platforms, especially Twitter. When sharing the survey, it is crucial not to tell users what we are hoping to understand by conducting the survey in order not to bias the survey takers who are particularly interested in the subject matter nor bias the responses because users were primed to be thinking about how Twitter affects their outlook. Another way to ensure we get an unbiased sample would be to provide a monetary reward for those that take the survey. If necessary, we could also promote the survey through Twitter in order to ensure it reaches a sufficiently large sample of people. We want an evenly distributed level of experience with Twitter between the control and treatment(s), but I expect this to happen naturally with a large sample size.

In the ideal form of this experiment, we would take a group of people and assign them to a week of consuming twitter for at least an hour a day and the other half would be blocked from logging into their Twitter accounts. We would then compare their reported moods from before and after the treatment. When doing this analysis, it would be helpful to analyze the types of accounts users follow in order to get a sense of how much comedic, news and celebrity accounts users follow. It's possible the true problem with many people's Twitter consumption is that they primarily follow negative accounts rather than the use of the platform itself. Similarly, when analyzing the results we want to separate the effect of those who tweet consistently vs. those that passively consume, because those users will experience fundamentally different aspects of the platform.

The types of questions I am interested in asking (some adapted from mental health evaluations) in addition to quantifying social media usage are:

1. I feel very anxious, worried or scared about a lot of things in my life. (1-5)
2. I have lost trust in humanity and myself, and expect the worst of others and of situations. (1-5)
3. I frequently felt sad, like I can't go on. (1-5)
4. The sadness I am feeling makes it difficult for me to function in my personal, social, or work life. (1-5)
5. I feel hopeless about the state of the world. I have little faith in humanity and believe that the world generally tends toward evil. (1-5)

These questions are both intended to assess their worldview as well as do a basic mental health assessment to determine if they may be experiencing elevated sadness or depression. In addition to these broad questions, I think it may also be helpful to ask about specific topics like the state of US democracy or climate change to see to what extent those answers align with the rest of the questions. For ethical reasons, I think it is important to include a link to

mental health and suicide prevention resources in case our questions trigger difficult emotions in the participants.

III. Potential Biases of Ideal Setup & Alternative Test Methodologies

One of the major downsides of this implementation is that there will likely be huge compliance problems. I suspect it will be exceedingly difficult to convince minimal Twitter users to spend more time on Twitter and conversely that it will be nearly impossible to keep frequent Twitter users off the platform for a week. We can either choose to be comfortable with the lack of compliance and control for it in my post analysis or we can choose a more accommodating design.

Another possible implementation is to have the control answer all the same demographic, Twitter usage and mental health questions while the treatment will be asked to log into their Twitter accounts and browse for 5-15 minutes and take the survey after they spend some time on Twitter. For those who are not current users of Twitter, they will be asked to create Twitter accounts and will be initially sent to [Twitter moments](), but can browse through the app as they please. My hypothesis is that even in this case of an extremely short exposure to Twitter, many people will be affected by the stresses that come along with using the app.

The biggest downside of this approach is that the effect will inevitably weaker due to the short exposure time to Twitter, and cannot address longer term effects. However, I think compliance will be so poor in the ideal test specification that this amended version is preferable.

Another alternative would be to abandon randomization entirely and conduct more of an observational study. We could build a Chrome extension to determine how much time participants have spent on Twitter in the past month and ask them about their mood and worldview. Then, we conduct a follow up survey 2-4 weeks later and look at how user's Twitter usage changed since the last period and how that aligns with their responses to the questions before and after. I suspect that those who choose to use Twitter less in the subsequent period will be more likely to have a positive outlook on life. Those whose Twitter usage stays constant (either at zero or some other amount) can be used as a control, because on average their answers to the questions should stay about the same.

This third test specification trades off the benefits of a randomized controlled trial in order to gain insights into the longer term effects of Twitter usage. I think this methodology should be avoided unless understanding long term effects is determined to be absolutely necessary to our findings.

Regardless of test setup, if possible, I want to get an understanding of the extent to which users are passively consuming Twitter versus consistently posting and seeking likes/retweets as the use cases and subsequent impacts Twitter might have on a user will be different depending on how people use the platform.

IV. Key Metrics & Study Goals

The most important outcome variable I want to understand is participant's perspective on whether they believe the world is a good place and whether humans have the ability to create good and resolve conflict. That said, I am also interested in participant's general mood and susceptibility to depression. If possible, I want to gain an understanding of whether participants believe Twitter is affecting their mood (either negatively or positively) and perhaps how they believe social media affects their lives in general. Finally, I want to get an understanding of whether participants feel their use of Twitter is compulsive or if they feel they have control over when and how frequently they use the platform.

In doing this analysis we must be cautious to avoid the sensationalism that many news outlets use to create fear around social media usage. I believe that it is possible to use Twitter and maintain a healthy and positive perspective on life. However, these apps are intentionally built to increase usage of the app and one could argue these companies have an incentive to develop compulsive habits in their users even when it causes significant harm. Consequently, I believe it is vitally important to be aware of the ways that Twitter affects the way we think in order to protect users and hold Twitter accountable for their impact.