Visualizing



The Real World Implications of Data Analysis



I recently traveled to a rural migrant community in Florida on what was labeled a "volunteer trip" but turned out to be more of an indulgence into my own altruism. Nonetheless, I have been lucky to have had many humbling experiences such as this one that have made me feel privileged to be privileged, and to have the privileged point of view to know that I am privileged...and so on. Like any word that is repeated over and over, I am sad to say that "privilege" has lost some its meaning. I feel I am not alone in this, but I know that I, personally, at least want to have deeper discussions about privilege as a social issue. When I was presented with the opportunity to research this issue through social media, I jumped at the chance to look at what people were saying about privilege. As someone new to Twitter, and many forms of data analysis I came to use in my research, this semester-long endeavor was a highly rewarding experience that I have – dare I say it – been privileged to have taken part in.

Modern society has seen an unprecedented growth in the use of computational methods to reveal trends centered on everyday issues. With this growth, however, has come the ever-increasing need to analyze what the data we collect actually means. In using data to reveal information about our privilege, we must also take care in the ways in which we collect, trust, and use data to answer the questions society confronts us with¹.

Over the course of this semester, I have tried to answer a question everyone must confront at some point during their lifetime: what is privilege? I also wanted to know, what can data tell us about privilege? An inherently weighty word, I based my research on privilege on real tweets compiled from various users. I hoped that this would serve as a platform to better understand different perspectives surrounding this issue. Using Twitter as my starting point, I strove to better understand my data using a variety of computational methods, all the while keeping in mind that data, taken at face value, does not always tell the complete story. Throughout this process, I myself have changed my perspective on what it is to be privileged in this increasingly data-driven society. With this, I will make the argument that the use of social media requires a certain level of responsibility to contribute something meaningful to online conversations

 $^{^{}f 1}$ Much of the phrasing in this paragraph was taken from the INTD: 2420 syllabus.

surrounding social issues. Only then can what we put on the internet really mean something in a larger context.

Part 1:

Privilege as Data

My analysis methods started out very basic, and became increasingly specialized as I developed increased computer literacy and got a sense of what aspects of privilege I needed to focus on. I decided to

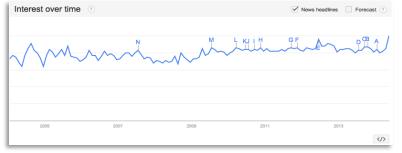


Figure 1. Interest in News Headlines Pertaining to Privilege Over Time. (Google Trends.)

provide myself with some context by first using

Google Trends to get a broad look at the

popularity of privilege by various measurements.

Figure 1 is a visualization of interest in privilege over time, based on news headlines.

Search results have increased over the past decade, though that could be a result of 1) increased media coverage as a whole, and 2) an increasingly casual use of the word "privilege", the latter of which was among various hypotheses I had coming into this. I took a closer look at some of the headlines over the years to get a better feel of what I was

white privilege 100 club privilege 100 privilege 100 privilege 150 privilege 85 privilege ibiza 85 privilege card 60

Figure 3. Search Queries Pertaining to Privilege. (Google Trends.)

looking at. Based on these
headlines, it would seem as though
privilege was a byproduct of more

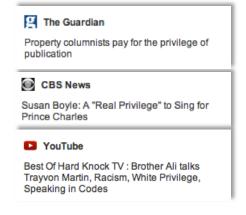


Figure 2. News Headlines Pertaining to Privilege. (Google Trends.)

newsworthy events, rather than a focal point in and of itself (Figure 2).

The last of these headlines, however – the Youtube video discussing white privilege in relation to the Trayvon Martin case – was a hopeful sign; this was the kind of content I was looking for. Google Trends also provides a list of related queries, which helped me see that

people were, indeed, trying to learn more about social issues relating to privilege (Figure 3). With this knowledge, I began my inquiry into who on the internet was actually talking about this subject.

I started the Twitter

part of my research by using
a program called Scraperwiki,
which allows a user to scrape
data off of Twitter based on a
search term; I set it up to
track "#privilege", and at the
end of one month had



Figure 4. Map of Tweets by Location. (CartoDB.)

compiled about 4,000 tweets. I would later realize that this was a very small sample size to work with, but I took what I had and went with it. I used CartoDB to see where my Tweets were coming from in regards to geographical location (Figure 4). It was interesting to see just how few people had location services enabled, even though their Twitter accounts were public (which meant they could be used in this study). This could be attributed to the increased paranoia about being traced and more easily identified by private companies and the government². Due to my small sample size, combined with the fact that very few Twitter users enable location services on their accounts, some guesswork factored in to my decision to

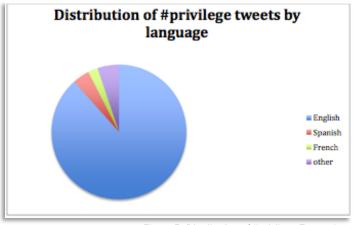


Figure 5. Distribution of #privilege Tweets by Language. (Excel.)

focus on primarily the United States in further analyzing my data.

This was supported by the creation of a simple Excel graph using Twitter's remarkable ability to categorize tweets based on language. Clearly, English was the dominant language, and was thus the language I chose to focus on (Figure 5). To put this in

² Pentland, Alex "Sandy". "The Data Driven Society". Scientific American. (2013): 6. Web.

statistical terms, 83% (roughly 4 out of 5) of the tweets were in English. This seemed fitting, given that those most advantaged in the world are English speakers with internet access.

Before continuing, this provides a good place to stop and comment on some of the limitations of using Twitter as a medium for conducting social research. There is a certain degree of irony in tracking #privilege on Twitter given the fact that having access to the technology that allows one to tweet is a privilege in itself. As Twitter user @JasonWBiehl says, "If life gives you lemonade, you've got privilege"³.



Figure 6. Unemployment Rates in Miami Over Time. (Social Explorer.)

Indeed, Twitter is quite the glass of lemonade – it requires not only internet access, but a minimum amount of computer literacy, especially if the user wants to utilize hashtags to ensure their tweets become part of the greater Twitter community. While there is no upper cutoff for who can tweet (celebrities and world leaders seem to love it), this means that there is a lower cutoff. Not hearing from a wider spectrum of people likely has an effect on how accurate the distribution of opinions is concerning my topic.

In keeping with a focus on

the United States, then, I used Social Explorer to look at how privilege might have affected Americans in recent decades. I mapped changes in unemployment rates in Seattle, Philadelphia, and Miami (pictured,

³ Biehl, Jason Whitney (JasonWBiehl). "If life gives you lemonade, you've got privilege. #privilege." 18 January 2014, 10:47 a.m. Tweet.

Figure 6) – the sources of three of my located tweets – from 1970 to 2010. There is a notable increase in unemployment in the 2000s regardless of city, so I could see that the stage was set for some relevant discourse about privilege just

as Twitter was coming of age⁴.

Similarly, I created an R graph comparing the incomes of American men (left) and women (right) sideby-side over time (Figure 7). I

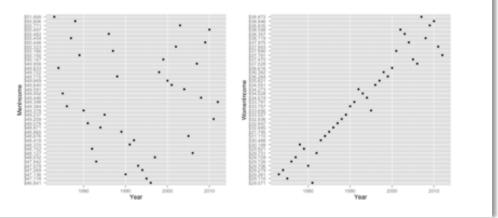


Figure 7. Men's and Women's Incomes Over Time. R.

found that while historically it has been women that have experienced the largest rate of growth, men were statistically in the more privileged position to begin with. Currently, women's income rates have plateaued at 77% that of men for the same job, or 77 cents on the dollar. These findings helped set the stage for discussing privilege, especially as it relates to the United States⁵.

The culmination of my research-based visualizations is my Gephi graph, which shows the networks formed within a random sample of three days of tweets (Figure 8). This supported a hypothesis I had developed in looking over my tweets: not many people are engaging in a conversation about this topic. In this sampling, one very large hub stands out. FBNStossel is the Twitter handle for a reporter for Fox News, who on February 17, tweeted "Government's power to grant special privileges is one more reason to shrink the \$3.5 trillion beast. STOSSEL starts NOW...#Privilege"⁶. He was retweeted 71 times, which is reflected by the network connections seen in the graph. Largely, however, the graph consists of singletons and small, isolated groups. This lack of conversation is a theme that I would go on to see repeated over and over.

⁴ Had I had more time, I would have liked to see how the undocumented immigrant population of Miami skewed the data, if possible. However, that endeavor would have been past the scope of this topic.

⁵ You may notice my R graphs seem to be less than perfect; for example, the scale is quite limited in the men's graph. I will be the first to admit that making graphs created solely through the use of coding was not my forte.

Stossel, John (FBNStossel). "Government's power to grant special privileges is one more reason to shrink the \$3.5 trillion beast. STOSSEL starts NOW...#Privilege". 17 February 2014. Tweet.

The tweets I reviewed up to this point, though

FBNStossel was a notable exception, made me questions if the general public truly appreciated the actual meaning of privilege in a social context. While the dictionary definition, "a right or benefit that is given to some people and not others", is straightforward enough, it seems to be that the connotation of the word is changing in a way that people should find troubling⁷. Based on the tweets I have seen, the average

Twitter user is more likely to associate privilege with subject matter leaning towards the downright trivial (one user mentions having her second Starbucks in one day – "privilege", indeed).

Twitter user @piero barone, who seems to be a European

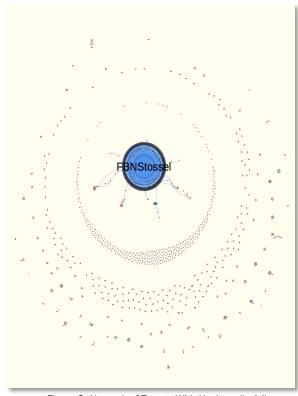


Figure 8. Network of Tweets With Hashtag #privilege.

musical artist, tweeted on January 15, "All you need right after Lunch! #Bar#Privilege#Naro", along with a



Figure 9. Most commonly tweeted words in relation to privilege. Wordle.

picture of a cup of tea⁸. This was retweeted 332 times, which meant that given my small sample size, it certainly skewed the data when it came time to create a World, for example (Figure 9). While one could argue that 1) tweets that seem trivial might seem that way because privilege is relative, or 2) that the very nature itself means that more serious tweets are more rare than the lighthearted ones, the

data distribution does not lie. It would seem that on Twitter, just like in real life, one must sort through a lot of repetitive or irrelevant data to reach the more salient information. Indeed, the most talented in the data

¹ "Privilege." The Free Merriam-Webster Dictionary. Encyclopedia Britannica, 2014. Web. 7 February 2014. < http://www.merriam-webster.com/dictionary/privilege>

Barone, Piero (piero_barone). "All you need right after Lunch! #Bar#Privilege#Naro". 15 January 2014. Tweet.

visualization world acknowledge that one must understand the context of data to "find the fascinating bits, which leads to a worthwhile visualization"9.

In hindsight, there are many things I could have done that would have produced more accurate results. For example, Scraperwiki collected several redundant tweets, which meant that when I attempted certain types of data visualizations, the resulting portrayal of my data was not entirely accurate. Luckily, this did not affect the data visualizations featured here (with the exception of the Wordle, of course), as I either took a sampling of tweets or made the visualizations after cleaning my data set. Further, a larger data set would have yielded better results, as my compilation of tweets numbered around only 4,000, fewer of which were original tweets, and even fewer of which had location services enabled. I eventually collected additional data sets using Scraperwiki, and though different Twitter users were featured, the key takeaway points remained the same. Many people were talking about privilege, in many different contexts. Many times, it was more of an afterthought than a subject in and of itself. To better understand this, my next step was to look at privilege in a broader context with the hope that doing so would shed some light on why my data turned out the way it did.

Part 2:

Privilege in the Real World

While compiling information for this paper and prior to moving on to the literature stage of research, certain events took place that stood as a testament to just how ever-present privilege is as a social issue.

Most notably, an article came out in last month's The Princeton Tory entitled "Checking My Privilege:

Character as the Basis of Privilege". In it, Tal Fortgang, a first year at Princeton University, claims that society has not right to make him feel as though he "ought to feel personally apologetic because white males seem to pull most of the strings in the world". Additionally, Fortgang openly resents the fact the assumption that he comes from a privileged background automatically discredits all of the hard work he

 $^{^9\,}$ Yau, Nathan. Data Points: Visualization That Means Something. Indianapolis: Wiley, 2013.

has put in throughout his life, boldly declaring: "I have checked my privilege. And I apologize for nothing" 10.

Regardless of whether or not one takes Fortgang's side, this article and its subsequent response from the public serve as useful examples for the research featured here.

A New Republic article by the name of "Check Your Use of 'Check Your Privilege'", for example, suggests that the popular phrase "check your privilege" has become a weapon rather than a reminder. In it, Julia Fisher says that the increasing use of the phrase "check your privilege" has resulted in an antiprivilege backlash. But wait – why would anyone not want to be privileged? Fortgang would say it is because being privileged creates the idea that he, for example, did not have to work hard to get to where he is. In fact, he shares extensive examples of his ancestors having fled from the Nazis in Poland and working day in and day out to make a living. Fisher does not share these sentiments, saying that Fortgang, in essence, wrote "I actually went and checked the origins of my privileged existence, to empathize with those whose underdog stories I can't possibly comprehend". This brings up an important point; while the story of Fortgang's ancestors is a remarkable one, the fact remains that he is a white, affluent Princeton student. She goes on to say, "The real problem with the phrase 'check your privilege'—aside from the fact that it reduces people to the sum of their characteristics—is that it has become a handicapping device. White male? Then what could you possibly know about racism or sexism?" ¹¹

In being equally considerate of the points of view of both authors, it would seem that while Fortgang is right to feel frustrated at being placed into a distinct category, Fisher is right to point out that one's history does not tell the whole story; put in a larger context, one's background, ethnicity, or race is not directly correlated with one's privilege. Further, there is no objective standard on which to base privilege. As radical as it may sound, perhaps a Princeton student actually does have the capacity to feel as disenfranchised as a black, homosexual, or poor individual.

Meanwhile, the concept of privilege was raised again as Donald Sterling, the owner of the Los

Angeles Clippers basketball team, was banned from the NBA for life after making several racist comments.

In "An Open Letter to White People: Why I am Donald Sterling and So Are You", Adam Ericksen says that

Fortgang, Tal. "Checking My Privilege: Character as the Basis of Privilege." The Princeton Tory. The Princeton Tory Mag., 2 April 2014. Web. 5 May 2014.

¹¹ Fisher, Julia. "Check Your Use of 'Check Your Privilege'". New Republic Online. New Republic Mag., 6 May 2014. Web. 10 May 2014.

the general public has "found a new sense of self-righteousness by uniting against Sterling for his racist comments". Like Fisher, Ericksen has found that an anti-privilege movement has resulted in the scapegoating of anyone we perceive to be more privileged than us. The author then goes on to point out that those of us reading the article are likely among the privileged elite in the world, regardless of who we use as a point of reference. The fact that we are so quick to set aside this privilege to criticize others is morally outrageous¹².

In perusing more articles online about privilege, I encountered a Tumblr blog that seemed to treat being underprivileged almost as a competition. This goes back to Fisher's statement that the phrase check your privilege" has, indeed, created an anti-privilege movement. This blog, "Check Your Privilege at the Door", is moderated by self-proclaimed "members of multiple marginalized groups in order to educate each other and everyone else as well as to create more acceptance among different people"13. A noble goal, to be sure. However, it struck me that this blog seemed to be over-correcting in that it failed to acknowledge other forms of privilege. It focuses on emphasizing what about people makes them distinctly underprivileged, when I feel that a much more effective approach would be to say "yes, there are things about me that are underprivileged, but here is what makes me privileged..." My point is this: between sorting through thousands of tweets, pages of Google search results, and hundreds of disgruntled blog posts, it would seem that simply complaining about the status quo is not the best way to go about enacting social change. These articles accurately reflect many preconceived notions I, myself, had at the onset of this project. In an early blog post, I wrote "Coming from a background that would be considered privileged by a large part of the world, I want to know what connotations that word carries. Also, I want to know what I'm talking about when I say "check your privilege" (which I say a lot)."14 Similarly problematic, I have found, seems to be the triviality with which people engage with privilege.

¹² Ericksen, Adam. "An Open Letter to White People: Why I am Donald Sterling and So Are You". Sojourners: Faith in Action for Social Justice. Sojourners Mag., 2 May 2014. Web. 10 May 2014.

^{13 &}quot;Check Your Privilege at the Door". Tumblr. 10 May 2014. (http://checkprivilege.tumblr.com)

¹⁴ It should be noted that many of the ideas I write about here were first included in various blog posts, all of which can be found at https://courses.bowdoin.edu/interdisciplinary-studies-2420-spring-2014/author/lwoodwar/.

Buzzfeed, for example, devotes a quiz to determine one's level of privilege (and upon completion of that one, also available to you are quizzes including "Who Would Play Your Mom in the Movie Version of Your Life?" or "Who Actually Wore it Better?")¹⁵.

Upon completion, one even has the option to share the results through various forms of social media (Figure 10)¹⁶. It would seem as though the only point of this exercise is to self-indulge your own sense of importance and esteem, and afterward compare it to that of others.

I was fortunate to have a group of very intelligent peers working on similar projects as I was conducting this research. Two, in particular,

How Privileged Are You? You live with 80 out of 100 points of privilege. You're among the most privileged people in the world. We don't live in an **YOU'RE** ideal world, but you happened to be born into an ideal lot. This is not a bad THE MOST thing, nor is it something to be ashamed of. It just means a lot of other people in **PRIVILEGED** the world don't live life with the advantages you have, and that's something you should always be aware of. Hey, the fact that you took the time and effort to check your privilege means that you're already trying. SHARE YOUR RESULTS

Figure 10. Buzzfeed Privilege Quiz.

were helpful for comparison's sake with their topics of

income inequality and poverty. The former, who I briefly collaborated with as part of the "economics" subset of our group, pointed out in a blog post that those tweeting about our topics "were less likely to be the ones being directly affected by those issues...most people who are struggling to get by are not spending hours on twitter complaining about their socioeconomic status. Those who tweeted are usually media pundits, congressmen, and academic professionals, whose socioeconomic status is not threaten by the minimum wage or the effects of the debt ceiling. I was not surprised that some of us had some trivial tweets, especially in hashtags like privilege or poverty"¹⁷. This reflected what I had encountered in working with my own hashtag, although #incomeinequality was much more influenced by political ideology than mine seems to have been.

¹⁵ Jha, Rega and Wesely, Tommy. "How Privileged Are You?". Buzzfeed. 10 April, 2014. 10 May, 2014. (http://www.buzzfeed.com/regajha/how-privileged-are-you)

 $^{^{16}\,}$ Yes, that is indeed a screenshot of my results.

Rodriguez, Adrian. "Patterns across economic theme group". Data Driven Societies. 21 February, 2014. 10 May, 2014. (https://courses.bowdoin.edu/interdisciplinary-studies-2420-spring-2014/author/arodrigu/)

Similar thoughts were echoed by a peer of mine who focused on poverty. She writes, "Poverty is an issue that exists across the world...the people tweeting about the issues of poverty are likely not the ones living below the poverty line. Thus the location of tweets is not always that indicative of where the issue of poverty is the strongest" 18. I was pleased to see that others were met with some of the same obstacles that I was, because it meant that I seemed to be on the right track. Comparing notes with my peers confirmed my hypothesis that no clear conclusion would emerge from my data set; rather, it was up to me to interpret what was available to me as best as I could.

Part 3:

Where Data Meets the Real World

Data has a wonderful way of reflecting real-life events. It would be ideal to have a way in which to automatically sort data into only salient information, but unfortunately there is not an application – affectionately referred to as an app – for that quite yet. One may wonder, what can data tell me that real life cannot? What fresh perspective could something as simple as a list compiled by a computer offer to the modern researcher? The answer, in short, is a lot. First, data is less biased than the average person. Computers in general, have no pre-conceived notions or hidden agendas. Second, data allows us to collect information about other people and see trends that would have been very difficult to gather information about otherwise. Whether it is through creating graphs, visualizations, or via statistical analysis, data provides us with a more objective point of view.

Social media is a powerful tool with unlimited uses. Armed with such an unprecedented ability to communicate, collaborate, and act, it is therefore our responsibility to make the best of the technology available to us. When it comes to social issues, the internet is a reflection of society in itself: there are a privileged few who have access to it, and even fewer who really take advantage of its opportunities. It is up to these few, then, to speak up for those who cannot make their voices heard.

¹⁸ Stoneman, Becky. "Patterns of Poverty: Manhattan, Brooklyn, and Palo Alto". Data Driven Societies. 2 April, 2014. 10 May, 2014. (https://courses.bowdoin.edu/interdisciplinary-studies-2420-spring-2014/author/rstonema/)

In the case of privilege, specifically, why does it seem to be used so trivially, so often? Based on the articles I encountered by Fortgang, Fisher, and Ericksen, it seems as though people use privilege is trivial ways to avoid thinking about its actual implications. This is a problem: being lighthearted or ironic about important issues takes away their significance. We all grew up hearing phrases like "finish your food, there are starving children in Africa", but they became so commonplace that all they served to do was create an

People use privilege is trivial ways to avoid thinking about its actual implications.

annoyance at dinnertime. I doubt many children actually stopped to consider the actual weight of that statement.

In abusing the word privilege, similarly, we abuse privilege itself. If we are in the position to apply the word privilege to trivial matter, that means that we are also in a position to do something about it. Treating it as a casual topic is a cop-out, and a way to avoid thinking about

something that we should instead all be conscious of. To quote one of my early blog posts: "This has certainly been an interesting project to have undertaken, and I have been met with results I did not expect. To be able to gather and reflect on data from different languages and people, however, is certainly a form of #privilege in itself".

One of the most challenging things about this project was asking myself, "so what?" Why does it matter that this abstract, relative concept is misused on mediums like Twitter? The answer to this question is that it matters because privilege affects each and every one of us. Keeping this in mind while analyzing my data, I was able to put together a few key takeaways:

We must first acknowledge that mediums like Twitter, for example, are a contradiction. Inherently designed to allow individuals to reach a broader audience, what seems to happen instead is that unless you are someone particularly famous among certain networks, your voice will most likely get lost in the crowd. To fix this, it is important that we engage each other in conversation, rather than just adding hashtags to things that will probably never be seen by a significant population, as evidenced in the lack of connectivity in the Gephi network featured in Part 1. Interacting with each other and creating networks will exponentiate the reach of ideas and therefore have a larger impact on the topic as a whole. This is how we

can escape the filter bubble – "the worry that our personalized interfaces to the Internet will end up telling us only what we want to hear, hiding everything unpleasant but important" ¹⁹. Making connections can be as simple as retweeting, which brings me to my next point.

Be original. Retweeting something you support with is a great way to get the word out there; however, it is with increasing numbers of different opinions that social discourse becomes truly valuable.

Further, be mindful of the content of what you put on Twitter.

Twitter, and all social media, is what the user makes of it. However, in the case of Twitter, where hashtags make content part of a greater community, it is important to remember why that is; I would encourage those who do not have anything important to say to self-filter. Indeed, early on in compiling data, one of my blog posts noted, "As someone who has never used Twitter, it surprises me how many people tweet publicly, and I

Be original...it is with increasing numbers of different opinions that social discourse becomes truly valuable.

question: do they really want the world seeing what they have to say? I would like to think that if some of the people I have encountered knew a stranger was analyzing their tweets, they would be a little more selective in what they post. This brings me to the question of representation: I think if someone makes their Twitter public and tags those tweets in such a way that they can more easily be accessed, what they post is fair game for anyone to use or criticize. As far as respecting privacy, I feel that if one only uses the relevant information associated with one's research...no disrespect is taking place. The bottom line is: people probably assume their tweets, since there are so many in the world, are lost in the crowd. However, the mere fact that they are in that crowd is enough for them to unknowingly become part of research, as is happening now."

It seems that the internet is highly divided in that there are those who are openly and intentionally public (Twitter users, people on Facebook, bloggers, etc.), and those who choose to conduct themselves in disguise, like the group Anonymous²⁰. Both have the power to enact social change – I would even make the claim that the former has even more potential, as it puts a face and a name to an idea. If you want to

 $^{^{19}}$ Stray, Jonathan. "Are we stuck in filter bubbles? Here are five potential paths out". Neiman Journalism Lab. (2012): 9. Web.

²⁰ Coleman, Gabriella. "Am I Anonymous?". Limn. (2014): 6. Web.

share with your friends how lucky you are to have caught a flight, enjoyed a great meal, or the like, consider if this something you think will contribute to a greater conversation about privilege before you hashtag it as such. Everyone has a right to use Twitter as they so choose, however if we are striving towards more meaningful interactions both online and off, we must be conscious of what our role is in that conversation.

I truly believe that the research I have conducted here, though based on a theoretical concept, has the full capacity to have real life implications²¹. With that said, I chose to end this paper with a section of conclusion entitled, "data and the real world". It is my hope that, after reading this paper, these two frameworks are not taken to be mutually exclusive. Indeed, it should be clear that we are entering an age where digital media not only reflects the real world, but is an integral part of it. It is a useful medium for not only entertainment or communication, but information; if anything, conducting said research has been a learning experience that has given new meaning to the old adage "a little birdie told me".

 $^{^{21}}$ I, at the very least, have been inspired to make a Twitter account. Whether or not I actively use it is another matter.