

## Prospectus

**Class Scribe: Intelligently Taking Notes**  
(Technical Topic)


**Fake News: Why It Happens and And How Society Can Try And Prevent It**  
(STS Topic)

By


John Watkins  
11/8/2019  
Department of Computer Science

Technical Project Team Members: Benjamin Brown, Rahat Maini, Henry Weber

On my honor as a University student, I have neither given nor received  
unauthorized aid on this assignment as defined by the Honor Guidelines for  
Thesis-Related Assignments.

Signed:  \_\_\_\_\_

Approved: \_\_\_\_\_ Date \_\_\_\_\_  
Sean Ferguson, Department of Engineering and Society

Approved:  \_\_\_\_\_ Date 11/24/19  
Ahmed Ibrahim, Department of Computer Science

## Introduction

~~The Class Scribe project, whose product is aptly named Lamp, isn't directly related to my research questions, but it does involve bettering the dissemination of information by making learning easier for students in school. Just describe the basics of the project~~

I worked with a team to develop a research project over the course of the semester, and from the collaborative development done in the project, we all developed individual research questions. Our research questions all relate to how emotionally-manipulative news is and has been used to alter society as a whole. Emotionally-manipulative news means news that uses the truth but stretches it or just targets specific audiences with certain news. For example, a couple years ago if you are older, white, blue-collar man in the Midwest, your only exposure to the Islamic faith may be news about ISIS beheading journalists. ISIS beheading journalists multiple times isn't not true, but definitely means your perception of Muslims will degrade over time as your mind constantly, justifiably or not, relates Islam to ISIS. ~~No longer can someone look at any "news" sources and expect to not be manipulated in some way.~~ This isn't really new, propaganda has existed since society began, lies, stretching, and only showing the bad parts of a situation have always been useful tools for actors trying to sway the political opinions of the public. My research questions mainly deal with to what magnitude emotionally-manipulative news actually impacts the political opinions and the voting patterns of people exposed to it, and how we can use technology to find emotionally-manipulative news, which means it can be labeled or blocked, and instead people can see news that doesn't make them angry or scared, the most often manipulated since they return a much greater response. (Isbell, 2012).

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## Technical Problem

Development of the overhead paper note scanner, which I will refer to as "Lamp" in this document, begins with recognizing the weaknesses of the competing note-taking utilities and incorporating solutions to them. Pen/paper note-taking is prone to missing minute details and nuanced info in favor of summarization due to the relative slowness of handwriting; tablets lack the zero input lag of physical note-taking while introducing distractions (Paul, 2013); laptops by virtue of allowing incredibly fast input push students to transcribe a lecture rather than retain information (Staff & Doubek, 2016) and also distract neighboring peers (Sana, Weston, & Cepeda, 2012) in the attempt to multitask (Mueller & Oppenheimer, 2014); and smart pens limit users to using certain paper and pen types. There is no clear winner in terms of the best method for note-taking, with shortcomings present in each method alongside any benefits.

Lamp looks to solve these shortcomings in various ways. Through a camera positioned in the head of the Lamp, student notes are constantly photographed throughout lecture. A far-field microphone acts as a lecture recorder, with the audio later transcribed into searchable text for later review. These are the basic pillars of this technology: capture, record, and digitize.

The on-board Raspberry Pi (a form of computer) collates these inputs and uploads them to a server accessible via a web application by the student later when studying their notes. This web app automatically organizes student notes by classroom and chronology, shows the transcribed audio associated with each lecture, and even displays a history of each page, allowing students to scroll through and see what was being said exactly by the professor at the time of writing a certain sentence or drawing a stroke on the paper.

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It is of utmost importance that the experience of using Lamp is invisible to the user beyond logging into it to identify who they are (a process done by a near field radio frequency scanner on-board that reads the student ID card). We strongly believe the actual act of learning within a classroom should be free of distraction and extraneous tasks non-essential to the process of learning itself. The classroom is a place of absorption and initial exposure, a critical foundation that later is expanded on via the explicit use of digital supplements that go beyond pen and paper. The forcefulness of handwriting combined with the assurance that the lecture audio is being kept offers a clear advantage over keyboard note-taking, where a compromise is made to copy everything, harming long term memory retention (Paul, 2013). There is no behavioral change to adapt to the technology, and no friction in any process (such as a start or stop button to record, a next page button to scan, batteries to charge, or a Facebook tab one click away).

As a minimum viable product, we will produce one working lamp and a companion web app. The following are our requirements in the form of user stories:

- As a student, I will be able to sign up for a Class Scribe account through the web app
- As a student, I will be able to enroll my ID to my Class Scribe account through Lamp
- As a student, I will be able to sign into my Class Scribe account on Lamp (after ID enrollment) and on the web app
- As a student, once I sign into Lamp I will have it scan my notes and record the lecture audio around me
- As a student, I will be able to see my scanned notes on the web app, hear lecture audio, and read the transcription of that audio
- As an administrator, I will be able to assign a class, classroom, meeting time, and lamp serial number through the web app

### STS Thesis

Emotionally-manipulative news has been employed for many years, but it has gotten worse since the advent of social media. People can inhabit their own online bubbles and are fed news that makes them less connected with the rest of society and also have a warped view of the world around them. Therefore the societal values we must further uphold are a better education and a more inclusive society. Emotionally-manipulative news divides our society and makes it less likely to progress as a whole. People are exposed to large amounts of information, and even without emotionally-manipulative news, it can be hard to really make sense of the world. With these values in mind, my research questions are the following. Does emotionally-manipulative news actually impact the political opinions and ultimately the voting patterns of people that are exposed to it? And, how can social media platforms be built to better incentivize the dissemination of news that provides a more holistic view of society and the world in general?

#### Literature review: state of the problem and how we got here

Emotionally-manipulative news has always been around. Propaganda has been around forever and has been used by political interests to influence the opinions of the public. The best way to determine if emotionally-manipulative news actually impacts the political opinions and their voting patterns as well. The best example of this is fake news, which falls under the umbrella of emotionally-manipulative news as it is defined, in the 2016 US presidential election. Over 62% of American adults get their news from social media, which means it is important for social media to act to be a reliable source of news.(Allcot & Gentzkow, 2017) In the leadup the election, 25% of voting age Americans visited a website that spread fake news. But this same study also found, upon closer inspection, that the people that consumed the most, 10% of Americans, had very

**Commented [FSM(3):** SCOT doesn't help with this. SCOT helps us get to a point where we are stuck in this mess, and can give some suggestion about how to move to change the relationships of tech and people, but it doesn't do a good job at cognitive/behavior recognition.

conservative news consumption, they consumed on average 33 articles that were “pro-Trump”. The other 90% of Americans consumed magnitudes less of fake news articles, on average between .43 and 4.2 articles.(4) So a considerable portion of the population is exposed to fake news through social media sites, but how much does fake news actually affect their political opinions and voting patterns? It was found that a group of voters who voted for Obama in 2012, 10% of the voters voted for Trump. Among this group of voters, people who believed two or all three of the fake news stories relating to that involved slandering Hillary Clinton or supported Trump they were shown, the percent of support for Hillary Clinton fell down to 17%.(6) A study done in Italy, showed a negligible effect on voting behavior of populists, which just means extremists on the left or right.(5) So it seems like fake news stories can affect the opinions, but it is much less clear if it actually affects who people vote for in elections. Ultimately, People use sites like Facebook to connect with their friends and relatives, and now it has become a large source of news, which means there need to be ways to improve social media platforms, so people are less likely to spread emotionally-manipulative news. I am going to use the social construction of technology framework to analyze how emotionally manipulative news evolved to the situation we have today.

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#### Framework

I am going to use the social construction of technology framework to analyze how emotionally-manipulative news evolved to the situation we have today.

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Social media really started with sites like Friendster, where people were connected by degrees. Every major social media has followed this structure. Facebook, for example, has friends and friend of friends. And Twitter is also similar because it connects people by using followers.(Shah, 2018) People wanted to make stay connected with their friends using the internet. The bigger development is that social media platforms This obviously makes the most sense because people being connected by degrees replicates real life. What has become an increasingly complex problem is that these networks of people can be used to spread emotionally manipulative news. These are the economic system where ads drive media platforms, designs of sites that encourage divisiveness (clickbait and other non-sense), shift to open platforms for content creators to distribute information freely.

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<https://journals.sagepub.com/doi/full/10.1177/1461444816661553>

[aka we built up a platform economy: [https://www.nbp.pl/badania/seminaria/25x2016\\_2.pdf](https://www.nbp.pl/badania/seminaria/25x2016_2.pdf)]

Commented [FSM(6)]: You need to actually use SCOT if you say you are going to have this as a framework. WHO are the groups, WHAT are the problems and challenges, WHAT were the closure mechanisms that got us to where we are at today. This is all lit review.

Emotionally manipulative news has always been around. Propaganda has been around forever and has been used by political interests to influence the opinions of the public. The best way to determine if emotionally manipulative news actually impacts the political opinions and their voting patterns as well. The best example of this is fake news, which falls under the umbrella of emotionally manipulative news as it is defined, in the 2016 US presidential election. Over 62% of American adults get their news from social media, which means it is important for social media to act to be a reliable source of news.(Allcot & Gentzkow, 2017) In the leadup the election, 25% of voting age Americans visited a website that spread fake news. But this same study also found, upon closer inspection, that the people that consumed the most, 10% of Americans, had very conservative news consumption, they consumed on average 33 articles that were “pro Trump”. The other 90% of Americans consumed magnitudes less of fake news articles, on average between .43 and 4.2 articles.(4) So a considerable portion of the population is exposed to fake news through social media sites, but how much does fake news actually affect their political opinions and voting patterns? It was found that a group of voters who voted for Obama in 2012, 10% of the voters voted for Trump. Among this group of voters, people who believed two or all three of the fake news stories relating to that involved slandering Hillary Clinton or supported Trump they were shown, the percent of support for Hillary Clinton fell down to 17%.(6) A study done in Italy, showed a negligible effect on voting behavior of populists, which just means extremists on the left

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## Method

### Case studies in alternative construction of platforms and information sharing...

There have been many ways proposed to stop the spread of emotionally-manipulative news on social media platforms. A major problem has been identifying which news is actually spreading falsehoods or stretching the truth in order to trigger an emotional reaction in certain groups of people. Google launched a project called the Redirect Method, whose purpose was to show the most vulnerable people to ISIS propaganda in 2015 a more whole view of the world. By doing this, the hope. The idea was to deploy it on YouTube, and hopefully they would be less likely to be radicalized. (7) So there are ways to lessen the impact of emotionally-manipulative news in this sense, but there have been many other ways proposed. For example, recently Twitter banned political ads, in contrast to Facebook, who still allows political ads and hasn't even proposed fact-checking them(8). But Facebook has proposed fact-checking news stories that appear in their news feed on their website.(9) So Twitter has gone ahead and banned a source of emotionally-manipulative political ads entirely. But Facebook, along with Google, have tried and filtered emotionally-manipulative with their efforts. Banning it may stifle free speech, but filtering it may be too little to actually really make any positive impact.

In order to fully understand emotionally-manipulative news, I will need to conduct in person research with many different people from many different demographics and socioeconomic groups. It needs to be further explored what can be done to curb the spread of emotionally-manipulative news. Interviewing locals and students, and distributing surveys in order to better understand how people respond to emotionally-manipulative news will be necessary.

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I propose that you set this up as a technosocial system evaluation. First, literature. How did we get to this point. Second, How are folks building alternative or intervening in some way to overcome the challenges/harms. These might be technology initiatives like you have listed or social interventions (both are mechanisms of problem definition and closure attempts; again use the language of SCOT).

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