

## **Thesis Project Portfolio**

**Freelance Web Design: Building a Custom Website for a Budding Local Business**  
(Technical Report)

**Actionable Insight into Aligning Political Targeted Advertising with Deliberative  
Democracy**  
(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science  
University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree  
Bachelor of Science, School of Engineering

**Brian Tufts**

Fall, 2022

Department of Computer Science

## **Table of Contents**

Sociotechnical Synthesis

Freelance Web Design: Building a Custom Website for a Budding Local Business

Actionable Insight into Aligning Political Targeted Advertising with Deliberative Democracy

Prospectus

## **Sociotechnical Synthesis**

### Digital Media: The Hidden Agenda

*“And we’ve moved away from having a tools-based technology environment to an addiction- and manipulation-based technology environment”* (Tristan Harris, “The Social Dilemma”)

Digital media usage for people eighteen years and older has skyrocketed in recent years. On many occasions, I, too, have found myself being lured into the incredibly addictive practices of apps and websites. Under the guise of entertainment and having nothing else to do, I justify the hours I spend swiping through content. I know that I am not the only one; as shown in Fig 1. Our World in Data reports that the total hours spent on digital media a day by people eighteen and up went from 2.8 in 2008 to 6.2 in 2018. As seen in the graph, it’s clear that many are lured into spending endless hours on digital media. This is exactly the goal that digital media creators have when they spend billions of dollars on research about how to engage with users via media. This represents what is called persuasive technology and it is becoming an increasing aspect of modern society. Through my STS research and technical project, I have gained a unique perspective about a small area of persuasive technology: the unnoticeable persuasion of targeted advertising and commercial websites. More specifically, my STS topic explored specific aspects of political targeted advertising using deliberative democracy as a basis. Additionally, my technical project was a website for a summer camp in which I had to explore ways to be persuasive, rather than being critical of its effects.

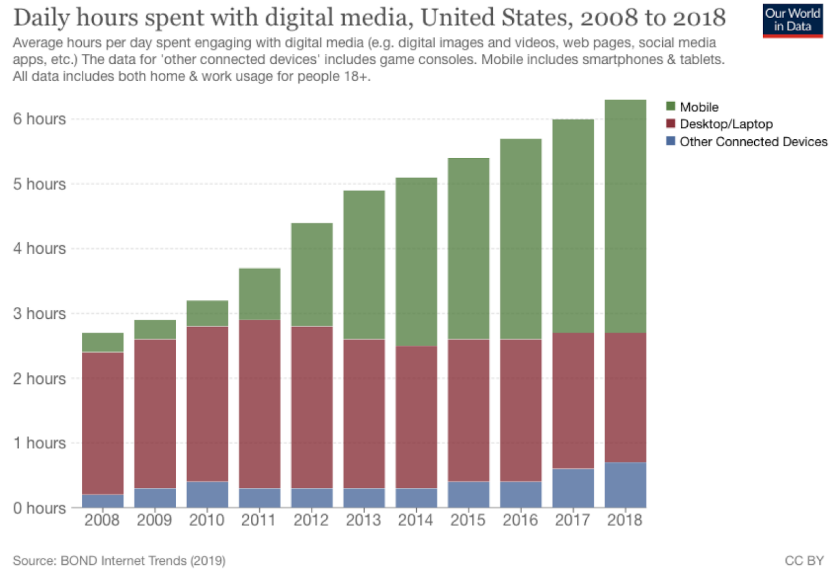


Fig 1. Our World in Data showing the increase in digital media usage a day from 2008 to 2018 (2.8 hours in 2008 to 6.2 hours in 2018)

The technical portion of my thesis included producing a website for a local summer camp from the design phase all the way through production. This website combined a number of commonly used features and designs in a unique way to fit the theme and goals that the client provided. In this project, the goal was to create a website that engaged online visitors, and ultimately, have them sign their children up for the camp. This provided me the opportunity to be on the producer side of persuasive technology, focusing on how to be persuasive. As a result, the entire process felt as though the website was one large, multi-paged, well-disguised advertisement.

In my STS research, I expose the principles of deliberative democracy that are violated in targeted advertising. More specifically, I explore the goals and effects of politically targeted advertising to understand why and how it is able to influence the viewer. In my research, it is clear to see the principles of deliberative democracy that are affected by behavioral psychology. The first principle is that it reduces the desire and quality of deliberation amongst the target audience by limiting their exposure to other viewpoints, and the second is the destruction of

common knowledge on which to base the deliberation and policies as defined by the deliberative democratic process. Insights into how targeted advertising interacts with viewers will help policy makers better understand the damage caused by political targeted advertising to democracy.

While America may not be attempting to emulate deliberative democracy exactly, the deliberative process is fundamental for any functioning democracy and efforts to protect it from harmful practices is essential.

My technical project and STS research demonstrate the two competing sides of persuasion using technology: the creator of the technology and the user of the technology. While creating my technical project, I took the side of the creator and attempted to unknowingly persuade visitors to sign up for the camp. In contrast, my STS research explored political targeted advertising and revealed the negative side effects of the leading techniques used in technological persuasion. If I were to only complete one of these projects, it would have likely resulted in a biased understanding of the effects of persuasive technology. However, by exploring both sides, I was able to understand that it is a complex topic. In my STS research, I admit to the fact that political targeted advertising is here to stay, which I believe extends to other forms of technological persuasion. Nevertheless, I also show that there are ways in which technological persuasion can be made more beneficial for society. This begins by getting a better understanding of the problem as a whole and my thesis is just one contributing piece.