The Brilliant British Invasion:
A Look at the Rise of British Television Shows in the United States

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Abstract

With the fascination of using social media as a data collecting source, this project looks at how twitter could be used to aid businesses in finding target audiences for their services. This project uses the recent rapid growth in popularity of BBC America and the increasing fluidity of British and American cultural icons as a basis. By capturing geocoded tweets (tweets that have a specific latitude and longitude) with specific hashtags and comparing them against the demographics of each state within the continental United States in order to determine patterns of viewership, it is possible to determine in what areas it would be beneficial for cable and satellite providers to offer BBC America. This could also be used to see how quickly which shows are being integrated into American culture. The results show that *Doctor Who* is by far the most common BBC show in the US, with *Downton Abbey* and *Top Gear* also having significant numbers. The findings show that in general, states with a larger percentage of the population having a bachelor's degree or higher as well as a larger median household income watch BBC programming more. Using this demographic information, one can determine the states in which BBC programming should be accessible to the general public. Studying social media could lead to beneficial research in many fields, specifically business and sociology.

I. Introduction

Within the past ten years, thanks to the advent of BBC America, many Americans have at least become familiar with some aspect of British culture. One of the most prevalent forms of culture that is leaking from across the pond is taste in television shows. Many shows that are now household names, such as *Doctor Who*, *Downton Abbey*, *Top Gear*, and *Planet Earth*. This project was inspired by this growth and my own love of British programming. It also came from the curiosity of working with social media, in this case tweets, as the main form of data. The goal of this project was to see if there is a certain demographic to viewers of BBC shows and where in the United States those pockets of British television viewers are located. This data could lead to better awareness of cable and satellite service providers of their audiences and allow them to analyze in what areas it would be beneficial for them to offer BBC America.

II. Literature Review

This project required a fair amount of preparatory research in order to figure out exactly how to approach the issue. Through the process I read several overviews of the BBC America network to see if the research would even be relevant and if there was data to be found. I learned from two different network overviews, one from *Advertising Age* and the other from the BBC affiliates website, just how productive BBC America has been since its creation. These articles seemed geared towards potential investors and thus were very complimentary of the company. The *Advertising Age* article was where I first got the idea to compare viewership to demographics such as income and educational attainment. The BBC Affiliates overview gave particular recognition to Doctor Who and Top Gear as shows that had grown substantially, thus giving me two shows to look at. With this, I decided to look up a bit about the programming of Doctor Who, as it was the program that really seemed to cause the BBC America boom. In his article, "The Doctor is in", self-proclaimed Whovian, Clark Collis examines the history of Doctor Who, spanning back 50 years, its resurgence in 2005 after a 15 year hiatus, and its explosion in America. This article provided a good chronological evaluation of the program and also was very informative about the constituents of the fandom over time. I also looked at a press release issued by BBC America in 2011 which claimed that BBCA had the highest growth rate among television channels due to its high quality and "strength" of the intelligent programming available. While this article lists statistics and awards of the company, it is definitely meant for business-minded viewers, who BBC America hopes to pull in to invest their time and money in their programming.

Aside from my background research on BBC itself, I also looked some at how using geolocated works. Thomas Alisi's blog page gives the basics of collecting data from Twitter. This article was very helpful because it gave me the idea of how I could manage to collect on my own, instead of paying to get it from Neilsen's Media Research Corp. The prospect of trying something new and different energized my work throughout the process, even as I got bogged down in trying to learn coding and seemingly endless data entry.
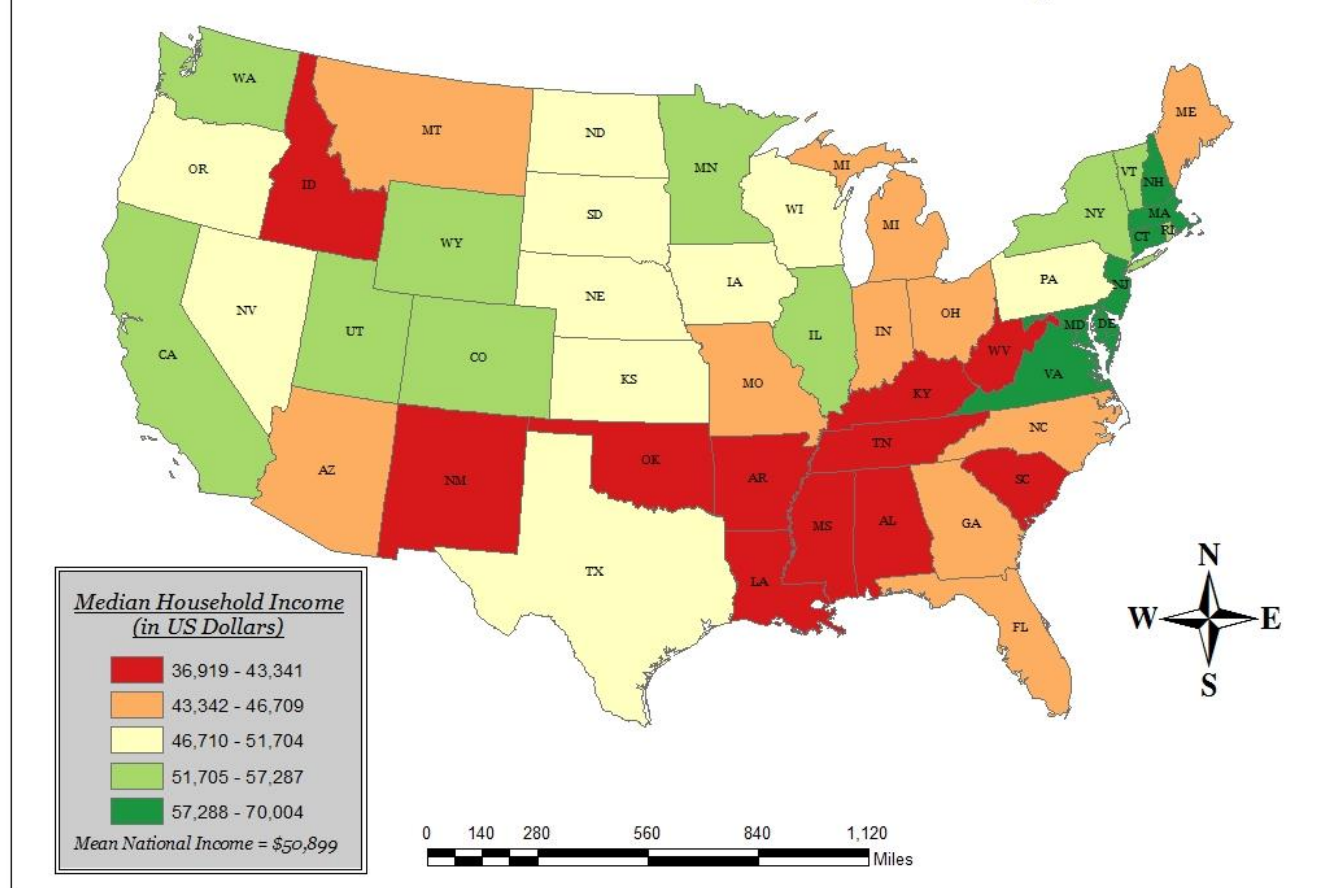
Median Household Income by State

Figure 2: Median Household Income of Contiguous United States (not normalized for CPI)
*Data from ACS 1-year survey, 2011 *created in ArcMap 10.1*

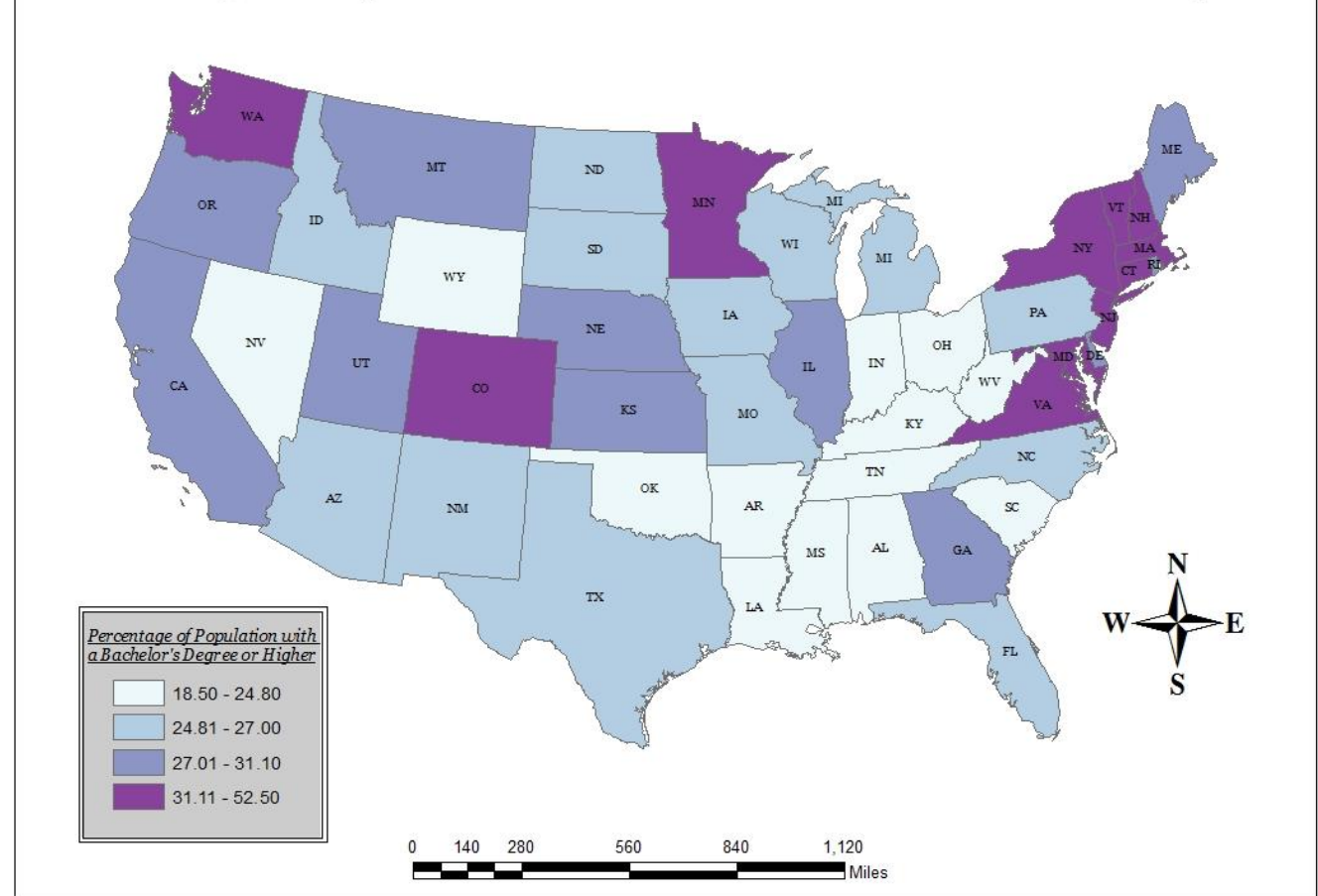### Percentage of Population of a Bachelor's of Graduate Level Degree

Figure 1: Educational Attainment of Bachelor's Degree or Higher by State
*Data from ACS, 1-year survey, 2011 *created in ArcMap 10.1*

III. Methodology

The research was completed in a variety of steps. Firstly census data on educational attainment and household income was collected using the ACS 2011 1 year survey. Then using GIS, the two maps, figures 1 and 2 were created to show the differences in educational attainment and income level by state. These maps were created by joining the excel tables of educational attainment and income level to a US map. The second phase of the project, which was completed at the same time as the other aspect used the Twitter API (Application Programming Interface). The API was manipulated to gather only tweets with specific hashtags and that were located within the continental United States. This process required having several lines of code running through a program called Phirehose in order to gather all the tweets. The initial plan was to run the program during select hours for a week, however the strict parameters meant for less incoming usable data, so the project was expanded to having the program collecting tweets all day long, for two full weeks. On the end of the second week, the program was shut off, and the tweets were organized. The organization process included removing any tweets that were not relevant to the data desired, but that might have had a very similar hashtag. The tweets collected were all geocoded, meaning that they have a set of coordinates which show where the tweet was sent from. Once the "junk tweets" were removed, each tweet was divided up by show/program. Shows or programs that received less than 20 tweets are completely discarded as well. These geocoded tweets were divided up by state and a bar graph was created to show the most popular tweets in each state, as well as a graph showing which states had the most total tweets from all of the programs together.
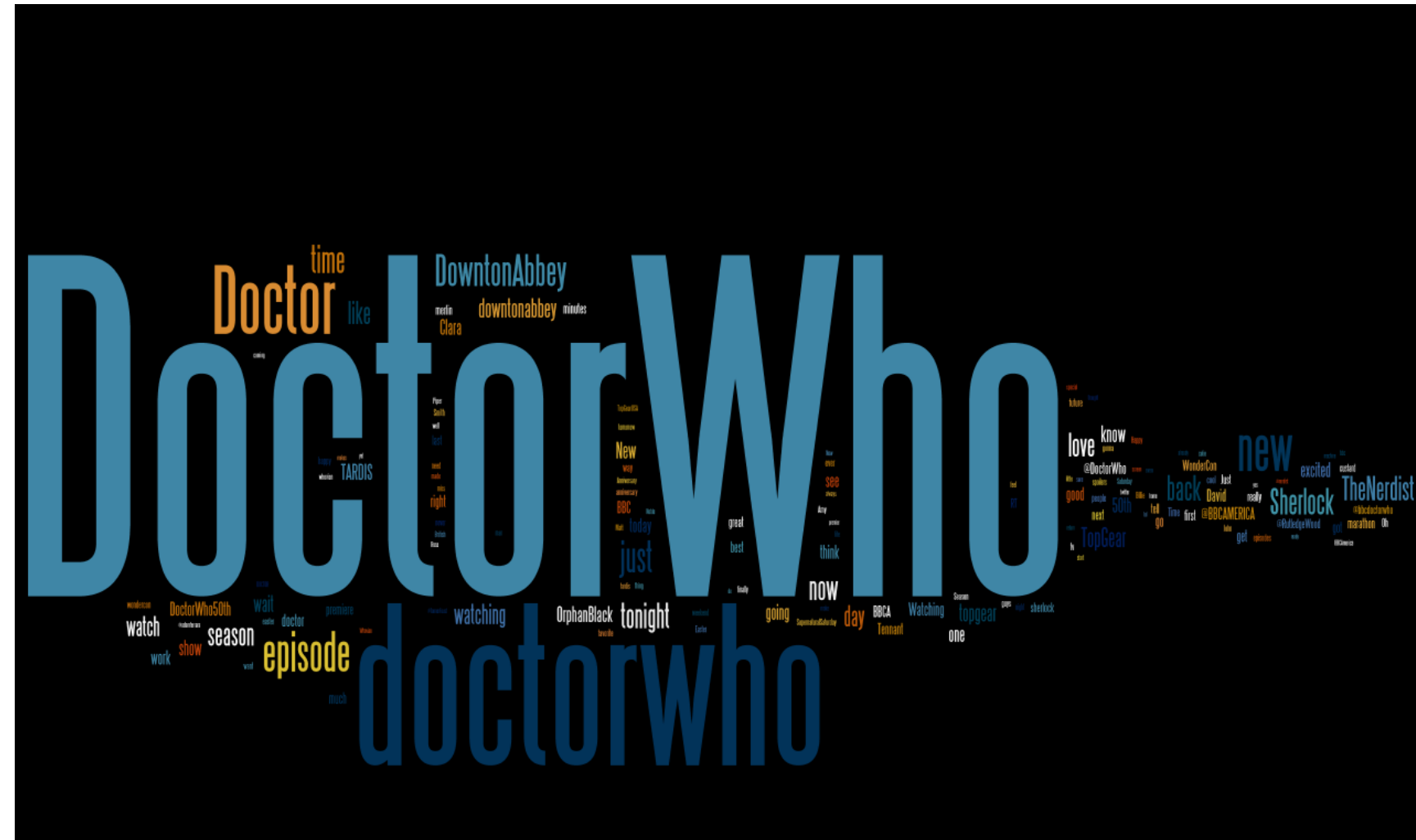
IV. Results and Discussion

Normalized Numbers of Tweets by State

Figure 5: Graphical representation of the number of tweets per program by state. The number of tweets was normalized using the population of the state.

Figure 6: Wordle word cloud created showing the dominance of Doctor Who from the data set *created using http://www.wordle.net/

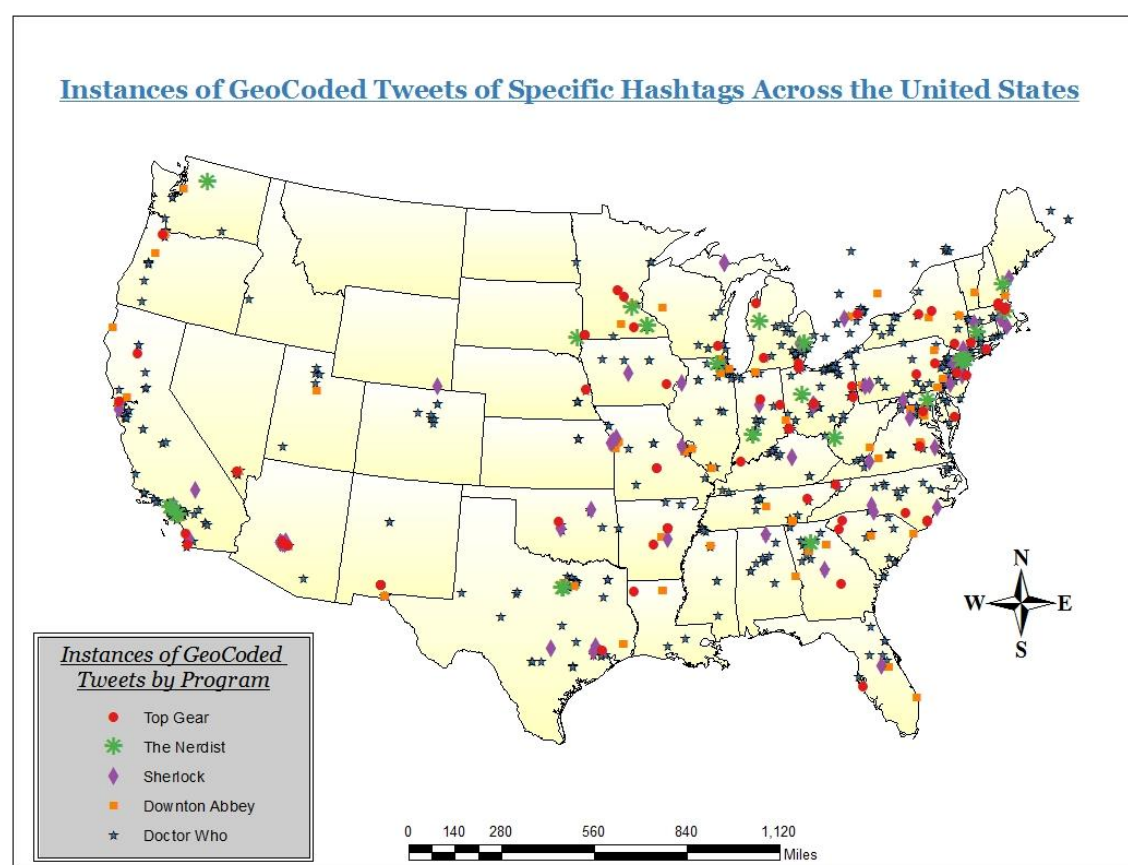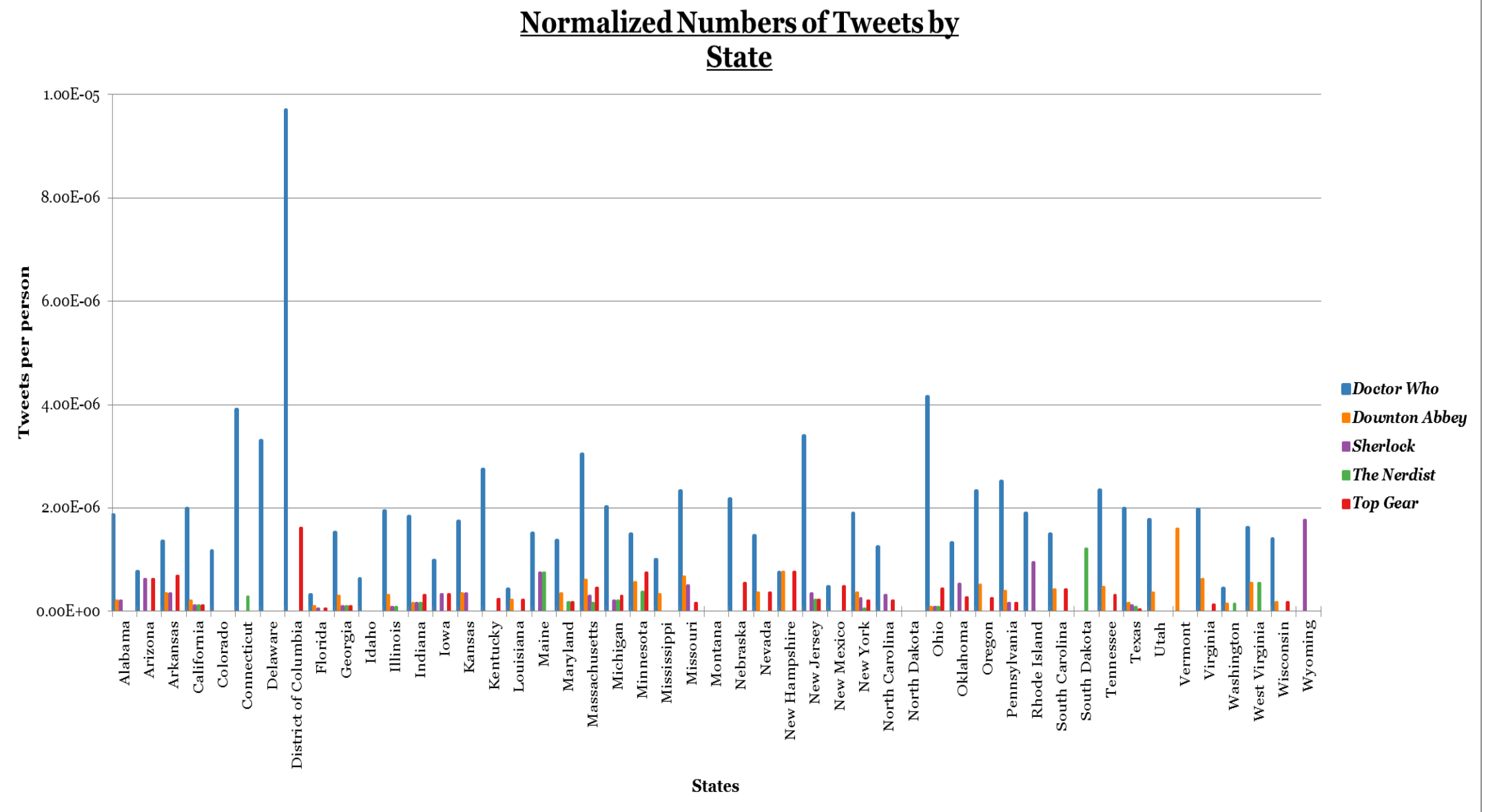### Instances of GeoCoded Tweets of Specific Hashtags Across the United States

Figure 4: Map from raw data showing the geographical instances of the different hashtags across the contiguous United States. *Data from Twitter API, map created using ArcMap 10.1
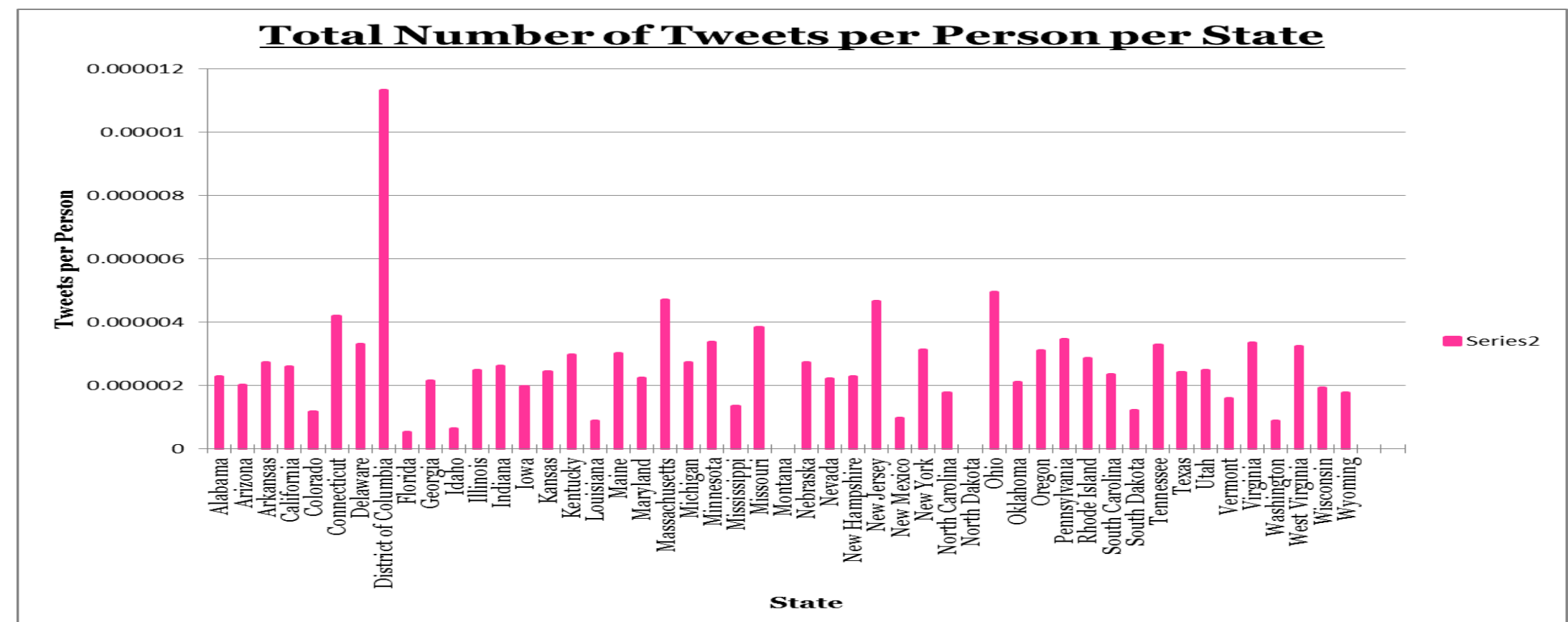
Total Number of Tweets per Person per State

Figure 3: Graphical representation of total number of relevant tweets from each state, normalized by the population of the state to give the number of tweets per person. *Note Montana and North Dakota did not have any geocode tweets over the course of the data collection period.

V. Conclusion

The conclusions of this experiment are as expected. In general, the state that have the larger percentages of more highly educated persons and a high income, tend to watch more BBC America programming than those in other states. The states that match both of these are also the states with the highest total viewership, (CT, DC, MA, and NJ). This generalization shows that perhaps cable or satellite companies should think about making BBC available in Colorado, Washington State, New Mexico, Virginia, New York, and California

V.I. Future Research

The importance of this research project is mainly in the methods. With the rise of mass social media within the past decade, if one can properly manipulate an API and/or write code, then it is possible to obtain different varieties of data than we ever have before. While the method itself can only work as well as the API it functions through perhaps with further the method of collecting data from social media sources can be greatly improved and will be able to give especially social scientists a better look into societies and the workings of culture and media. Projects looking at the increase popularity of the "zombie genre" in comparison to rates of depression (a correlation which has already been proposed in several academic papers), could give insights into the emotional health of an area, while a project could also look at the change in different media patterns over time. With the prospect of social media as data, the possibilities are endless and leave the design to the own creativity of the researcher.

VIII. Acknowledgements

VII. References

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