

SOCIAL MEDIA INTERVENTION ON VACCINATION DECISIONS

WHAT INFLUENCES PEOPLE ON SOCIAL MEDIA?

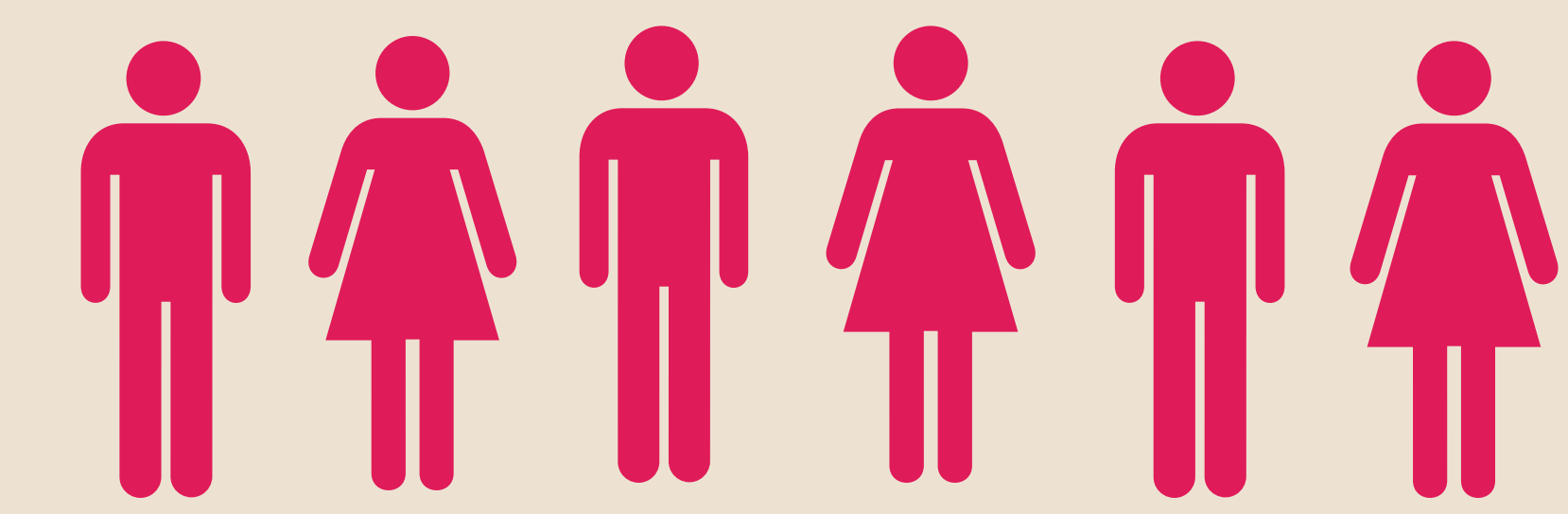
INTRODUCTION

Increase in social media use as a source of information has seen supplemented usage by those seeking health related information.

- Nevertheless, HOW CREDIBLE IS THIS INFORMATION?

Information Overload and Misinformation related to health issues have raised concerns regarding the credibility of Social Media Information.

- However, DESPITE MISINFORMATION WHAT MAKES IT PERSUASIVE?



SOCIAL MEDIA USAGE BY ADULTS IN U.S.

69% OF INTERNET USERS AMONG U.S. ADULTS USE SOCIAL MEDIA AS A SOURCE INFORMATION IN 2017

35% OF THESE U.S ADULTS LOOK UP HEALTH RELATED INFORMATION ON SOCIAL MEDIA

CAN LANGUAGE HELP ASSESS CREDIBILITY OF SOCIAL MEDIA?

METHOD: TWEET LANGUAGE ANALYSIS

- Extracted data from previous study at Georgia Tech -- used **Python & Twitter API** to extract tweet information from **80 million** tweet IDs

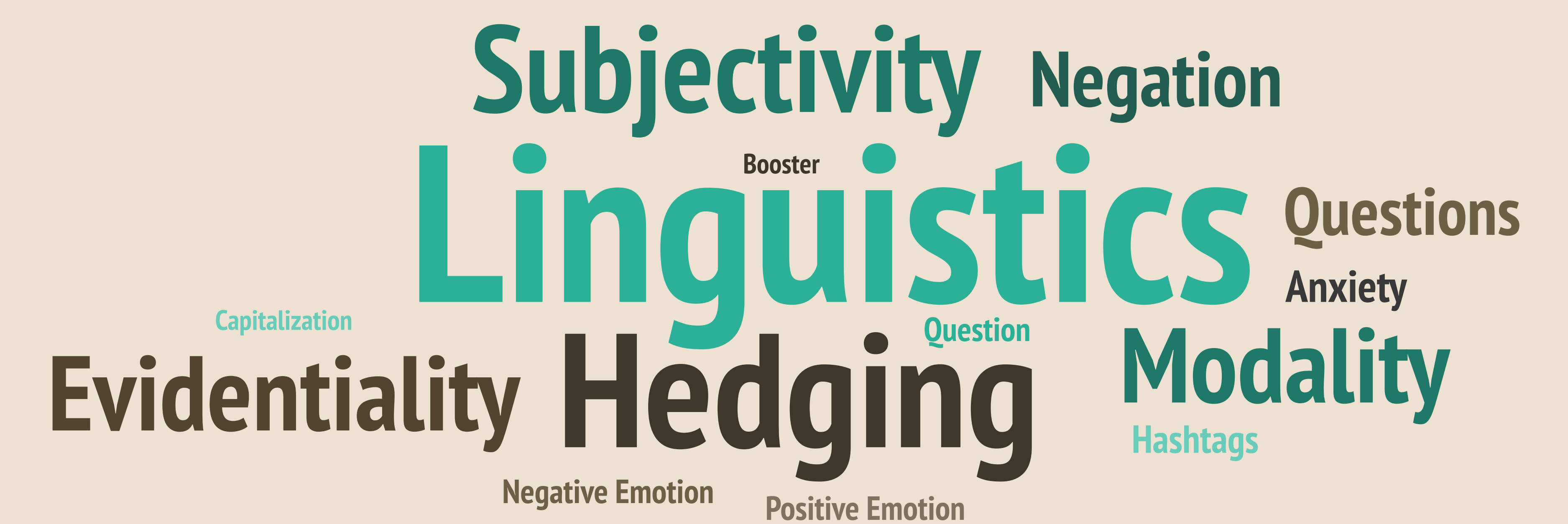
- Tested the extracted tweets against an average credibility score ranging from (-2, +2) & analyzed credibility score using python scripts.



- Used these results on a program to extract linguistic features prominent in each tweet to identify relation between **language & credibility** of a tweet.



LINGUISTIC FEATURES TO ASSESS CREDIBILITY



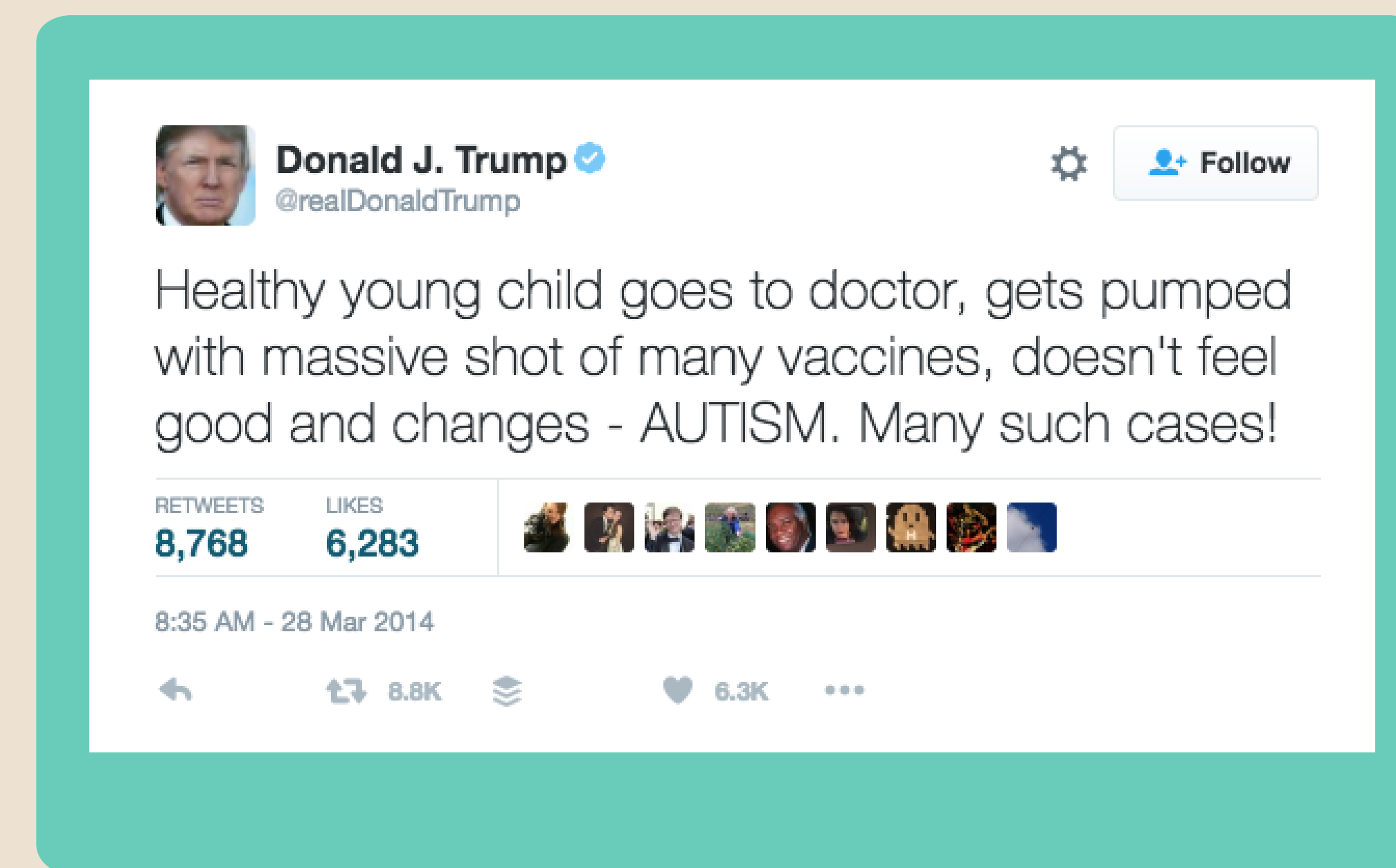
Linguistic features like HEDGING, NEGATION, SUBJECTIVITY & OPINIONS etc. are linked to credibility perception. These features highlight the emotions behind the social media post. From our data, we find that people tend to believe more opinionated posts since they can relate to the content. We plan to investigate this correlation between language and credibility in future.

CONCLUSION & FUTURE WORK

Health related information on Social Media is not credible. Moreover, there exists a correlation between language used on social media and our credibility perception. This in turn affects our decisions on major health issues such as vaccinations. The scope of this project has infinitely many implications - Filtering out fake news is the need of the hour and identifying which sources are credible or not can prevent people from having access to incorrect information.

WHY THIS MATTERS?

MORE THAN **250** THOUSAND TWEETS FROM 2009-15 SUPPORT ANTI-VACCINATION



THINK!



IS SOCIAL MEDIA PUTTING YOUR HEALTH AT RISK?

TRUTH



DO VACCINES CAUSE AUTISM?

NOPE

This Myth originated in 1998 when a English Journal called LANCET, published a paper by Andrew Wakefield who claimed a link between Autism Mumps and Rubella (MMR) vaccine.

In 2004 the article was RERACTED and it was considered fraudulent. Data was altered to prove that MMR vaccines caused Autism. Despite the fact that this was completely proven wrong in 2011 we still see millions of Antivaccination posts surfacing on Twitter, Facebook etc. misinforming users to avoid vaccines

HOW CREDIBLE IS SOCIAL MEDIA?

METHOD: TWITTER DATA ANALYSIS

- Extracted conclusions from abstracts of Top **31 Journal Articles** related to "MMR", "VACCINE" and "AUTISM" and divided them under 4 topics(/facts)

- Collected **501** vaccination related tweets from a commercial social media analytics platform (Crimson Hexagon) and classified them under the topics identified through Journals

- Compared the conclusions of the **Scientific Journals** and **Twitter Posts** to check for any Correlation

TWITTER VS SCIENCE

145/358 tweets
Contradict "MMR Vaccine does not cause Autism"

34/68 tweets
Contradict "Vaccine is a social Obligation to maintain Herd Immunity"

26/48 tweets
Contradict "MMR vaccine does not damage the infant's immune system"

20/27 tweets
Contradict "MMR Vaccine does not contain Toxins causing Autism"

49% OF 501 TWEETS COLLECTED CONTRADICT CONCLUSIONS FROM SCIENTIFIC JOURNALS



WHAT MAKES IT PERSUASIVE ?

The **LANGUAGE** used in most social media posts that are persuasive are easier for people to relate to and understand. However, our study finds that the **MORE RELATABLE** the language is, the **LESS CREDIBLE** the information.

