FACING COVID-19 USING SENTIMENT ANALYSIS

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PROJECT PRESENTATION

- Using Twitter's Open API for sentiment analysis to measure how President Macron's speeches impact the audiences' emotions regarding the pandemic at hand

Scenario

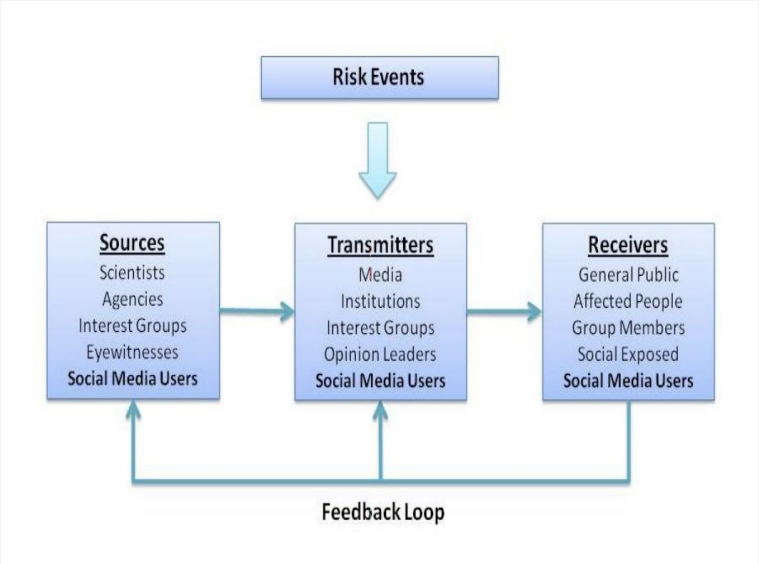
Millions of viewers sit down to watch the french president's speech regarding the challenging times we are facing regarding the coronavirus. We are curious to know...

- What does the **polarity of emotions** look like in relation to the pandemic?
- Will the data collected be sufficient and **valuable** enough for the government take into consideration **when preparing Macron's upcoming speeches** in order to make them more **effective** in generating **more positive emotions** regarding the crisis?

SOCIAL AMPLIFICATION OF RISK FRAMEWORK & SOCIAL MEDIA

Social Amplification of Risk Framework, a population-level model determine that **risk events** interact with **psychological**, **social**, **cultural and institutional processes** that either increase or decrease the risk perceptions (Keperson, 1988).

The social process of information-exchange is determined by the **sources** of information (Emmanuel Macron), **transmitter** (Twitter) and **receivers** (french population).



OBJECTIVES

1. Understanding the **polarity of emotions** regarding Macron's speeches
2. How **confident** does the public feel about their government's ability to overcome the crisis within a reasonable timeframe
3. Can we use public opinion in order to create **more impactful speeches** in the near future?
4. Are we able to identify any **trigger words** from the speech **causing the polarity** of emotions?

EXPECTED RESULTS

- Polarity towards more **negative and frustrated emotions**
- **Little confidence** about the protocol being put in place
- Identifying **key problems with Macron's communication** method that can be improved to **reduce negative polarity** of emotions
- Understand how people are changing their **behaviour** as a result of the **negative** or **positive** information that they had received

TECHNICAL PROCESS

1- Collection of the tweets:

We will use le package “tweeteR” and the function “searchTwitter”.

```
searchTwitter(searchString, n=25, lang=NULL, since=NULL, until=NULL, locale=NULL, geocode=NULL, sinceID=NULL, maxID=NULL,
              resultType=NULL, retryOnRateLimit=120, ...)
```

n=?

searchString= macron+covid-19

since= starting of the speech, until=24h after

gecode= Paris region

Then we will export the tweets into a CSV file

```
write.csv2(tweets_df, file = "tweets.csv", row.names = FALSE)
```

TECHNICAL PROCESS

2- Cleaning and tokenizing text with tidytext package

- Removing http elements
- Converting to lower case
- Removing stop words

3- Convert our words in English

- We will use the Google translate R package and convert all our cleaned tweets

TECHNICAL PROCESS

4- Having a first visualization with the top 10 words

- Counting the top 10 words after each speech count(), top_n()
- Visualising these words in a bar plot with ggplot2

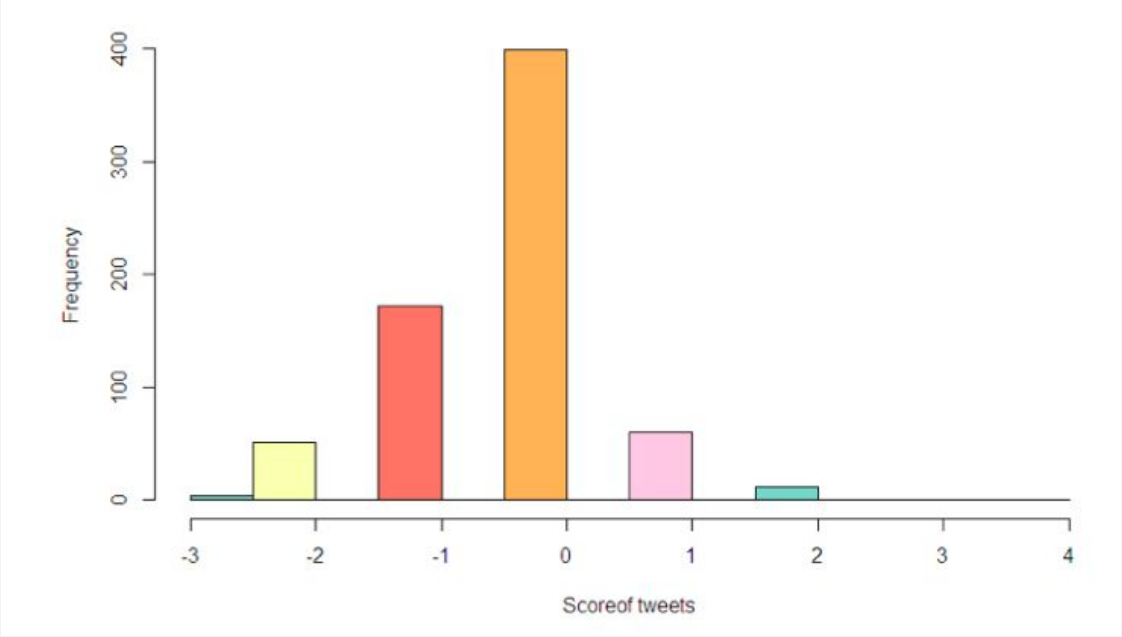
5- Giving a sentiment score for each tweet with Bing Sentiment

- Giving a +1 for positive and -1 for negative words
- calculating the total score for each tweet

6- Final visualization

- Number of tweets with their sentimental score

TECHNICAL PROCESS



And so we can compare the evolution of this graph after each speech

REFERENCES

Speeches:

- 16th of March: https://www.elysee.fr/emmanuel-macron/2020/03/16/adresse-aux-francais-covid19

- 2nd of april (message to people with autism?): https://www.elysee.fr/emmanuel-macron/2020/04/02/autisme

- 13th of April: https://www.france24.com/en/20200413-live-france-s-macron-makes-third-primetime-tv-address-on-covid-19-crisis http://www.rfi.fr/en/france/20200413-france-coronavirus-president-emmanuel-macron-health-economy-school-speech-television https://www.france24.com/en/20200413-in-third-coronavirus-crisis-speech-macron-expected-to-warn-france-lockdown-must-go-on

REFERENCES

Text analysis & sentimental analysis with regard to COVID-19:
https://towardsdatascience.com/using-topological-text-analysis-for-covid-19-open-research-challenge-184d44bb92a6
https://towardsdatascience.com/covid-19-outbreak-tweet-analysis-on-face-masks-27ef5db199dd
https://towardsdatascience.com/how-did-twitter-react-to-the-coronavirus-pandemic-2857592b449a
https://towardsdatascience.com/2019-novel-coronavirus-peoples-thoughts-8c06c3caf20e
https://medium.com/@mosessampaul/twitter-sentiment-analysis-d3459ed3cf1a
https://towardsdatascience.com/twitter-sentiment-analysis-and-visualization-using-r-22e1f70f6967
https://learn.datacamp.com/courses/introduction-to-text-analysis-in-r
https://www.tweetbinder.com/blog/covid-19-coronavirus-twitter/
https://tspace.library.utoronto.ca/bitstream/1807/25454/1/Chew_Cynthia_M_201011_MSc_thesis.pdf