SURVEILLING COVID-19 EMOTIONAL CONTAGION ON TWITTER

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INTRODUCTION

Worldwide, posts related to the COVID-19 emergency have been impressively growing as a trend topic on Twitter. Everyone shared her/his subjective perspective (either positive or negative), mixed-up with legitimate and authoritative sources of information. Therefore, the fight against the pandemic seemed to encompass a rapidly evolving debate on social media, possibly resulting in emotional contagion that needs to be surveilled [1-2].

OBJECTIVES

In the current study, we aimed to examine the flow and content of users' tweets, considering the role of COVID-19 key events.

METHODS

Benefiting from freely available data from Twitter's archives, we gathered tweets and users' data from *Advanced Programming Interfaces* access point and performed a focused analysis. Both context-dependent meaning and emotion-specific features characterizing subjective perspectives were considered, distinguishing different populations of users. Following two complementary approaches, features related to the sentiment expressed in tweets were decoded and a polarity compound score was computed. **Sentiment analysis** was performed by using both the Valence Aware Dictionary for sEntiment Reasoning (VADER) and the Covid Twitter-Bidirectional Encoder Representations from Transformers (CT-BERT) trained model specific for the COVID-19 scenario. Longitudinal trends between January 19 and March 3, 2020, were evaluated.


Figure 1. COVID-19 Sentiment (CT-BERT model)
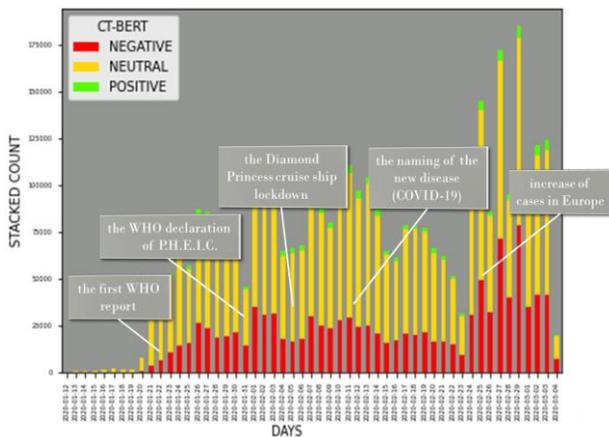
RESULTS

We gathered more than 6 million tweets, of which 3,308,476 written in English. Since the first World Health Organization report (January 21, 2020), negative sentiment proportion of tweets gradually increased, with amplifications following key events. Sentiment scores were increasingly negative among most active users. Tweets' content and flow revealed an ongoing scenario in which the global emergency seems difficult to be emotionally managed with many users potentially exposed to emotionally unstable perceptions, as shown by sentiment trajectories.

Figure 2. Sentiment scores with 95% CIs (Jan – Mar 2020)
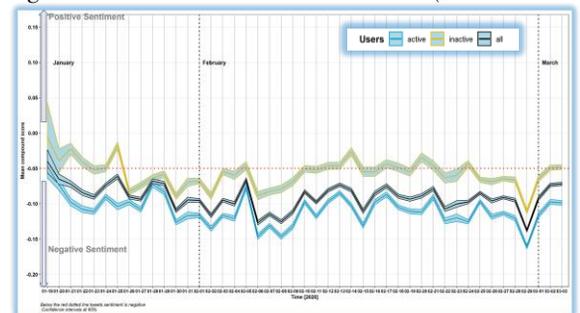
CONCLUSIONS

Sentiment trajectories may represent the first step to better understand users' interactions and related individual- and area-level components. It appears crucial to identify, as the target of potential preventative interventions, those subjects most in need who may be engaged in emotionally unstable connections [3]. Therefore, integrating models for social media like Twitter as essential surveillance tools in the management of the pandemic and related waves might actually represent a novel preventive approach to hinder emotional contagion. Considering the existing debate on data availability, a systematic ongoing collection, collation, and analysis of data and the timely dissemination of reliable and trustworthy information are needed.

References
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