Fighting the COVID-19 Infodemic in Social Media: A Holistic Perspective and a Call to Arms

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Introduction

We define a comprehensive annotation schema for tweets, covering the COVID-19 pandemic, that goes beyond factuality and potential to do harm.

Figure 1. An annotation illustration – answering *Yes* for Q1 reveals Q2-Q7 with their respective answers

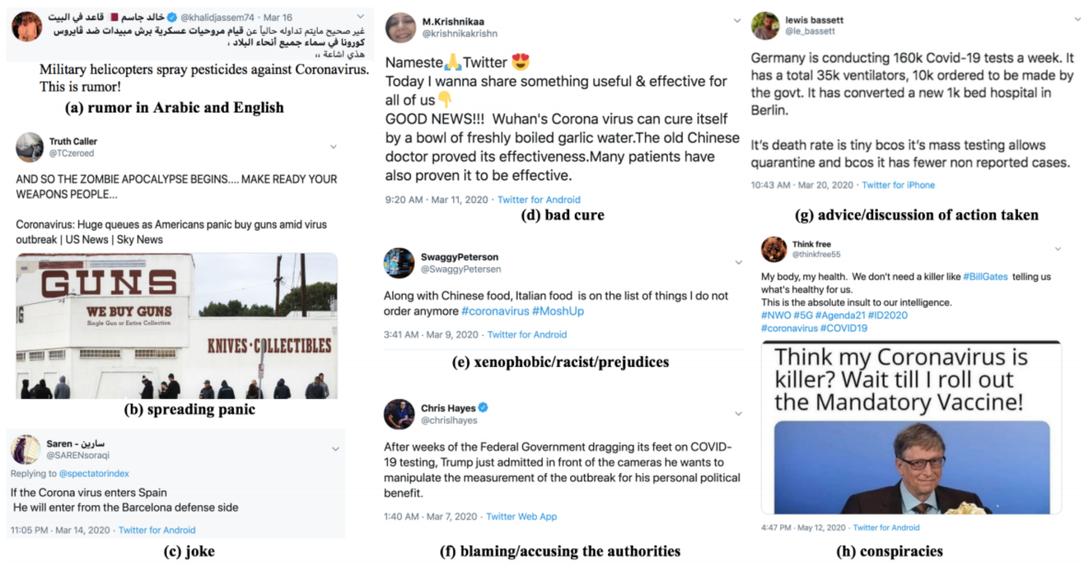

Figure 2. Example tweets, which would be of potential interest to journalists, fact-checkers, social media platforms, policy makers, government entities, and the society as a whole.

Call to Arms

We invite everyone to join our crowdsourcing annotation efforts and to label some new tweets, thus supporting the fight against the COVID-19 infodemic. We will make all such annotations public at:

https://github.com/firojalam/COVID-19-tweets-for-check-worthiness

As of now, we focus on English and Arabic tweets, but we plan extensions for other languages in the future. Here is the annotation link for English:

https://micromappers.qcri.org/project/covid19-tweet-labelling/

And here is the annotation link for Arabic:

https://micromappers.qcri.org/project/covid19-arabic-tweet-labelling/

Experiments and Evaluation

- SVM with TF-IDF weighted word n-grams, $n \in \{1,2,3\}$
- FastText with word and character based n-gram embeddings
- BERT

	English				Arabic			
Question	Maj.	SVM	FT	BERT	Maj.	SVM	FT	mBERT
Q1	45.6	**64.8**	**72.8**	**87.6**	50.2	**72.9**	**74.4**	**88.1**
Q2	42.6	41.1	**44.0**	**48.5**	27.2	**43.3**	**47.4**	**42.8**
Q3	43.8	41.7	**48.3**	**57.6**	38.2	**49.1**	**83.1**	27.0
Q4	19.4	**41.5**	**35.5**	**41.6**	31.8	**56.4**	**54.4**	**43.7**
Q5	21.3	**37.6**	**37.6**	**50.4**	22.2	**57.4**	**77.2**	**59.0**
Q6	52.6	**50.4**	**53.9**	**57.2**	61.5	**68.6**	**79.3**	40.9
Q7	49.1	**58.6**	**57.8**	**54.6**	64.0	**69.1**	**75.7**	**66.3**
Average	39.2	**48.0**	**50.0**	**56.8**	42.1	**59.5**	**70.2**	**52.5**

Table 1: Results for English and Arabic (weighted F1). Maj. is the majority class baseline, and FT stands for FastText. The results that improve over the majority class baseline are shown in bold, and the best result for each question and language is underlined.

Acknowledgments

This research is part of the Tanbih project, which aims to limit the impact of disinformation, "fake news", propaganda and media bias by making users aware of what they are reading.