

COVID-19: MISINFORMATION, FAKE NEWS, CONSPIRACY THEORIES, AND ISLAMOPHOBIA ON SOCIAL MEDIA

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SENTIMENT ANALYSIS

WHAT IS IT?

SENTIMENT ANALYSIS IS AN ANALYTICAL APPROACH TO LANGUAGE PROCESSING WHICH SEEKS TO REVEAL THE AFFECTIVE STATES PRESENT WITHIN A PIECE OF TEXT.

HOW DOES IT WORK?

SENTIMENT ANALYSIS WORKS BY ASSIGNING A SCORE TO A PIECE OF TEXT WHICH INDICATES TO WHAT EXTENT A GIVEN EMOTIONAL STATE IS PRESENT.

WHY USE IT?

SENTIMENT ANALYSIS PROVIDES A GREATER DEGREE OF CONTEXT AND INSIGHT INTO THE NATURE OF UNDERLYING ATTITUDES BEHIND A PIECE OF TEXT.

METHODS

A TOTAL OF 44,810 COMMENTS FROM THE VIDEO CATEGORIES WERE SUBJECTED TO SENTIMENT ANALYSIS. SEANCE (SENTIMENT ANALYSIS AND COGNITION ENGINE) 1.2 WAS USED TO DETERMINE THE EMOTIONAL CONTENT/VALENCE PRESENT IN EACH COMMENT (CROSSLEY, KYLE, AND MCNAMARA, 2017).

THE CONFIGURATION OF SEANCE USED WAS EMOLEX (MOHAMMAD AND TURNEY, 2013), WHICH IS A EMOTIONAL LEXICON GENERATES A SCORE FOR EACH COMMENT, RANGING FROM 0 TO 1. HIGHER SCORES INDICATE A STRONG ASSOCIATION WITH A PARTICULAR EMOTIONAL STATE. IN TOTAL, THERE ARE EIGHT EMOTIONAL CATEGORIES, FOR WHICH SCORES ARE GENERATED: ANGER, ANTICIPATION, DISGUST, FEAR, JOY, SADNESS, SURPRISE, AND TRUST.

CATEGORIES

CIMBE
COVID + ISLAM / MUSLIMS / BAME / EUROPE

CIMI
COVID + ISLAM / MUSLIMS / INDIA

GI
GENERAL ISLAM

COVID
COVID-19 CONSPIRACY

ANTI-V
ANTI-VAXX

RESULTS

EMOTION CATEGORY	VIDEO CATEGORY	NUMBER OF COMMENTS	MEAN	STD. DEVIATION
ANGER	CIMBE	5328	0.025	0.069
	CIMI	1686	0.022	0.058
	GI	11549	0.026	0.059
	COVID	9644	0.024	0.054
	ANTI-V	16603	0.023	0.054
ANTICIPATION	CIMBE	5328	0.031	0.072
	CIMI	1686	0.016	0.047
	GI	11549	0.030	0.075
	COVID	9644	0.023	0.044
	ANTI-V	16603	0.026	0.052
DISGUST	CIMBE	5328	0.021	0.073
	CIMI	1686	0.023	0.069
	GI	11549	0.020	0.058
	COVID	9644	0.022	0.055
	ANTI-V	16603	0.020	0.058
FEAR	CIMBE	5328	0.032	0.071
	CIMI	1686	0.029	0.065
	GI	11549	0.034	0.067
	COVID	9644	0.037	0.059
	ANTI-V	16603	0.034	0.061
JOY	CIMBE	5328	0.033	0.083
	CIMI	1686	0.013	0.041
	GI	11549	0.031	0.078
	COVID	9644	0.014	0.039
	ANTI-V	16603	0.018	0.05
SADNESS	CIMBE	5328	0.027	0.072
	CIMI	1686	0.019	0.049
	GI	11549	0.024	0.056
	COVID	9644	0.025	0.053
	ANTI-V	16603	0.023	0.052
SURPRISE	CIMBE	5328	0.017	0.056
	CIMI	1686	0.008	0.035
	GI	11549	0.017	0.057
	COVID	9644	0.013	0.042
	ANTI-V	16603	0.013	0.043
TRUST	CIMBE	5328	0.049	0.096
	CIMI	1686	0.030	0.064
	GI	11549	0.050	0.091
	COVID	9644	0.038	0.059
	ANTI-V	16603	0.037	0.063

TABLE: MEAN AND SD EMOLEX SCORES FOR THE DIFFERENT YOUTUBE VIDEO CATEGORIES

COMPARISONS ACROSS THE EIGHT EMOLEX CATEGORIES HAVE BEEN MADE FOR THE ORIGINAL YOUTUBE VIDEOS. OF POTENTIAL NOTE IS THE HIGHER MEAN JOY AND ANTICIPATION SCORES FOR CIMBE AND GI COMPARED TO THE REST.

AN INDEPENDENT ONE-WAY ANOVA WAS PERFORMED FOR EACH OF THE EMOLEX CATEGORIES. DUE TO THE EXTREME SAMPLE SIZE NORMALITY WAS ASSUMED. THE ANOVA'S REVEALED A SIGNIFICANT EFFECT FOR EACH EMOLEX CATEGORY (PS < .05). A SERIES OF POST-HOC BONFERRONI COMPARISONS WERE RUN TO DETERMINE THE DIRECTION OF DIFFERENCES BETWEEN THE DIFFERENT LEVELS OF THE IV (THE VIDEO TYPES).

SUMMARY

IT SHOULD BE NOTED THAT WHEN MULTIPLE POST HOC COMPARISONS ARE MADE LIKE THIS THERE CAN BE AN INCREASE IN ERROR (TYPE 1). TO SOME EXTENT THIS HAS BEEN ADJUSTED FOR USING THE BONFERRONI CORRECTION, AND SOME PROTECTION IS OFFERED BY THE LARGE SAMPLE SIZE. HOWEVER, SOME CAUTION IS STILL NEEDED WHEN INTERPRETING THESE RESULTS. A FEW KEY POINTS DO SEEM TO EMERGE. GENERAL ANGER TOWARDS MUSLIMS AND ISLAM STILL APPEARS TO BE STRONGER THAN SPECIFIC ANGER AROUND CONSPIRACY AND ANTI-VAXX ISSUES. THIS IS FURTHER REFLECTED IN BOTH THE HIGH ANTICIPATION SCORES FOR THE CIMBE CATEGORY OVER OTHERS, AND THE HIGH JOY SCORE (IF WE CONSIDER THIS TO BE JOY IN SUFFERING).

THERE IS ALSO THE SUGGESTION OF LESS ACCEPTANCE OR GREAT NOVELTY OF ANTI-VAXX AND CONSPIRACY CONTENT AS IT RELATES TO ISLAMOPHOBIA. LESS TRUST HAS BEEN EXPRESSED IN RESPONSE TO THIS CONTENT. HOWEVER, THERE IS A GREAT DEAL OF FEAR IN RESPONSE TO CONSPIRACY THEORIES AND ANTI-VAXX ISSUE. FEAR IS OFTEN CONVERTED INTO ANGER DURING FAR RIGHT AND EXTREMIST NARRATIVES SO WHILST GREATER ANGER AND JOY IN SUFFERING IS SEEN IN THE MORE MAINSTREAM AND GENERAL ISLAMOPHOBIC CONTENT AND COMMENTS THIS COULD CHANGE OVER TIME.