An Analysis of Twitter During the 2017 Zimbabwean Military Intervention

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Abstract. With the rapid expansion of social media, most notable events globally are recorded on one or more of the platforms. During the events of the Arab Spring uprisings, social media was seen to play a role in the protests. The role of social media increased in the Ukrainian anti-government protests of 2014 to 2015, and in the Fees Must Fall movement in South Africa in 2015 and 2016. In 2017, amongst growing pressure for Zimbabwean President Robert Mugabe to step down, the Zimbabwe Defence Forces intervened. The military intervention was followed by the citizen's staging marches calling for the president to step down. During these events, social media was used as one of the communication tools narrating the events. This paper conducts an analysis of Twitter during the military intervention and the protests, where the tweets were captured using the Followthehashtag tool during the protests. The focus is on four predominate hashtags, and an analysis of both the metadata as well as the message contents is provided. Qualitative technique such as word frequency and word clouds are used to illustrate the common themes being distributed on Twitter.

Keywords: Popular uprising, Social information warfare, Social media

1 Introduction

The role of social media in popular uprisings is increasing, for example Arab Spring in Africa and the Middle East, the #Occupy movement, the protests in Ukraine, and the #FeesMustFall movement in South Africa. In particular, social media has played a crucial role in generating consciousness and awareness of several protests around the world [15]. In Africa, social media has "been harnessed to make political demands on human rights, accountability and good governance" [16]. The Arab Spring popular anti-government protests across North Africa and the 2015 #FeesMustFall student protests is South Africa inspired similar movements in other regions of the continent such as Malawi, South Africa and Zimbabwe. In Zimbabwe, the use of social media for political demands and good governance became popular in 2013. However, in 2016, Zimbabwe

was grip by recurrent citizen protests of a diverse nature against the president's (Robert Mugabe) regime [15]. These protests led to the emergence of the #ThisFlag and the #ThisGown movements. In 2017, amidst growing calls for Zimbabwean president Robert Mugabe to step down and increasing tensions between the president and the former vice-president, the Zimbabwean Defence Force intervened.

The concept of social information warfare is the use of techniques to affect the information environment to influence or disrupt the decision making process of an adversary. The use of social media during physical protests can be used to gain recognition and influence international or local audiences to support the movement, or to aid in the coordination and provide support services to the protests [24].

This paper analyses the metadata and content of four Twitter hashtags during this period immediately following the military intervention. Descriptive analysis of the metadata and content analysis of the tweets is conducted.

Section 2 provides a background to information warfare, information-based conflict in Africa, Zimbabwe, and the Zimbabwean crisis in particular. Section 3 describes the methodology for the paper. The analysis is presented in Section 4, with the discussion in Section 5. The paper is concluded in Section 6.

2 Background

This section provides a background to Information Warfare (Section 2.1), with specific examples related to Africa (Section 2.3). A historical background Zimbabwe (Section 2.3) and an overview of the events leading up to and during the crisis (Section 2.4) are provided.

2.1 Information Warfare

Information warfare is an umbrella term for a number of functional areas that affect or operate in the information sphere, such as command and control, cyber operations, psychological operations, intelligence gathering and dissemination, and electronic warfare. These can operate in, be enabled by, or affect, the physical, virtual and psychological domains [25]. Whilst this is a primarily military concept, it can be extended to other spheres, including social, corporate, economic, and personal spheres [26, 27].

Social information warfare first showed promise by the Mexican Zapatista movement in 1994 to 1996 [28]. Radio broadcasts and soft-power provided the ability for governments to influence each other and populations; however, mobile phones with text messaging proved to enhance the ability for anti-government protests to coordinate, including in the Philippines, Iran and Africa [12, 29, 30], with specific examples in Africa being highlighted in Section 2.2. With the advent of social media, this became a major enabling technology for movements and protestors engaging in social information warfare, such as the 'Twitter Revolution' in Moldova, the Arab Spring movements, student protests in South America and South Africa, and protest and state-backed activity in Ukraine [12, 13, 24, 31]. Initially social media formed primarily an

information dissemination platform for limited coordination and gaining broader recognition; however, in the #FeesMustFall protests and Ukraine, it was also used to organize and provide support services such as medical and legal aid [13, 24]. From these example, social information warfare can be seen to include the networking of individuals and groups to form a coordinated mass to promote a cause; however, it is alleged governments are using similar techniques for mass influence operations, and cyber-attacks have been seen to be used in conjunction with these techniques [32].

2.2 Information-based conflict in Africa

Information has long been a component in conflict in Africa, be it ideological, the use of military intelligence and deception, or other means. Even though information technologies do not necessarily exhibit the high penetration of other regions, they still have been seen to play a role in these conflicts. Examples include the use of radio broadcasts to incite genocide in Rwanda; in the 2007 Kenyan elections, the radio broadcasts were supplemented with text messages to incite violence. In 2010, Mozambique also experienced protests with text messages being used for information distribution. Social media is reported to have played a role in the Arab Spring protests across Africa and the Middle East [12]. In South Africa, a movement for free higher education, #FeesMustFall, extensively used social media for information dissemination and coordination of protests in 2015 [13].

In Zimbabwe, there have been reports of government surveillance and cyber-censorship of communications as well as anti-government movements defacing websites. The websites of newspapers were also targeted by distributed denial of service attacks. In 2013 a number of websites were attacked by the hacktivist group Anonymous Africa in protest against perceived human rights abuses [12].

2.3 Background to Zimbabwe

Prior to the colonial period of Africa, it is estimated that the first Bantu-speaking farmers settled in 150 BCE, which was followed by migrations of Zhizo, Shona-speaking, and Ndebele peoples. There were a series of kingdoms prior to British control being achieved in 1985 as the colony of Rhodesia. Independence was declared without British consent, followed by a period of sanctions and increasing resistance to minority rule and eventual independence. In February 1980 ZANU won the elections and Robert Mugabe became prime minister and eventually president up until his resignation in 2017. During this time, there was conflict with opposition parties [1].

During the time of the crisis, Zimbabwe was reported to have a population of 14,236,745, a GDP of 22,813,010,116 US$, and a “Poverty headcount ratio at national poverty lines” of 70% of the population [2]. In 2017 Zimbabwe was reported to have a fixed telephone line subscriptions of 1.86 subscriptions per 100 inhabitants, fixed broadband subscriptions of 1.32 per 100 inhabitants, 98.99 mobile telephone subscriptions per 100 inhabitants, 27.1% of inhabitants had Internet access [3], and there were 435 secure internet servers [2]. The 2017 Information Society Report published by the International Telecommunication Union (ITU) analyzes the ICT development index

(IDI) of worldwide countries. From this report Zimbabwe was ranked 136 out of 176 countries with an IDI level of 2.92. Regionally, Zimbabwe ranked 12 out of 38 countries [17]. In the 2017 World Press Freedom Index, Zimbabwe was ranked 128 out of 180 countries. Since the new government, this has improved slightly to 127 of 180 in 2019 [4]. Given concerns around press freedom and the prevalence of mobile communication over fixed-line, the use of social media to distribute anti-government messages, despite there being reports of government attempts of cyber-censorship [4]. In 2016, during the Harare protests such as #ThisFlag, #Thisgown and #ZimShut-Down, the government deployed several tactics to curtail the social media uprising. Several people were arrested, and social networks such as Facebook, Twitter and WhatsApp were blocked. In addition, the government started to formulate the Cyber Security Act to monitor and control online activism [15].

2.4 Brief timeline of events

In October 2017 there was growing tension between the first lady, Grace Mugabe, and the vice-president, Emmerson Mnangagwa over the succession to the President, which lead Mnangagwa fleeing to Mozambique and South Africa after his sacking in November. Mnangagwa had the support of some senior generals; the army chief General Chiwenga was overseas at the time and was warned of his impending arrest when returning to Zimbabwe [5-8].

On the 13 November Chiwenga, called a press conference to denounce the infighting and indicated the military will intervene. On the 14 November military convoys entered the capital Harare and seized the headquarters of the Zimbabwe Broadcasting Corporation (ZBC) and began raiding the homes of ministers aligned to Robert and Grace Mugabe, which continued into the morning of the 15th. A general made an announcement indicating that the military action was not a coup; this announcement was played in conjunction with normal programming on the 15th by the ZBC. On the 18th protests were held calling for Robert Mugabe to resign; on the 19th the ruling ZANU-PF party remove Robert Mugabe as their head and expelled Grace Mugabe and her supporters. Mugabe still refused to resign until the evening of the 21st, amidst impeachment proceedings being prepared [8-11].

3 Methodology

Tweet metadata and content were captured using the online tool Followthehashtag.com, broadly following the methodology of [13], which focused on the #FeesMustFall movement in South Africa. Four hashtags were focused on: #zimbabwe, #zimbabwecoup, #freshstart, and #mugabemustgo. Data collection began on the 15th November 2017 (the day after the military intervention) until the 24th November 2017. There are limitations on the Twitter API, where a maximum number of 1500 tweets can be extracted, however multiple queries were made to maximize the sample. According to Saunders, Lewis, and Thornhill, a sample of 384 is required for a population of 10 million at a 5%

margin of error [14]. This indicates the number of tweets extracted is a sufficient sample for a 5% margin of error.

Descriptive analysis on the tweet metadata for the four hashtags was conducted, to illustrate the strength, gender demographics and potential reach of each hashtag. Geolocation and trend analysis was conducted. Content analysis of the tweets was conducted using word frequency, visualized as a word cloud.

4 Analysis

This section provides the analysis of the tweets captured based on the methodology described in Section 3. An analysis of the metadata from the tweets provides information on the trends, demographics, and potential reach or influence of the tweets; this is presented in Section 4.1. Analysis of the message content is provided in Section 4.2.

4.1 Twitter metadata analysis

Table 1 presents a summary of the four hashtags assessed. The #zimbabwe hashtag is a general hashtag and was active previously. The #zimbabwecoup hashtag was from the time of the military action, whereas the #freshstart and #mugabemustgo hashtags emerged during the time of the protests. Whilst the two hashtags that were active for longer had an opportunity to gain more tweets, it can be seen that the #mugabemustgo hashtag had nearly double the number of tweets compared to the #freshstart hashtag. For the most part, the tweets were original and retweets, with limited replies. This indicated one-way dissemination of information, rather than dialogue. There are also a number of images and links, again indicating the dissemination of information.

Table 2 illustrates the demographics of the users tweeting. Gender detections ranged from 35% to 41%, however given the population size of the users this is adequate to generalize the gender proportions of the tweets. For all hashtags, there are more male users than female. The strongest female representation is for the #mugabemustgo hashtag, accounting for 44% of the users. These statistics imply male dominance, however a more unified resistance against the Robert Mugabe.

Table 3 presents the reach and possible influence of the various hashtags. The two longer running hashtags had a significantly greater potential audience. The #mugabemustgo hashtag had almost double the audience of #freshstart. These metrics also hold true for the potential impressions; however, the #zimbabwecoup has the lowest impressions per audience member, implying this was seen as more information dissemination. The #freshstart hashtag had the greatest ration of impressions to audience, implying a more emotional topic. The tweets per contributor appears fairly consistent at approximately 1.4; however, #freshstart again had a higher ratio than the other hashtags. The rate of the tweets appear consistent, except for #freshstart, where the rate is half that of #mugabemustgo. Given the metrics presented, #freshstart probably has the greatest dialogue, exhibiting more impressions and tweets amongst a smaller num-

ber of contributors compared to the other hashtags. The other hashtags, with fewer impressions per audience and fewer tweets per contributor can be considered to be more orientated for dissemination.

Table 1. Summary of the data from the four hashtags.

	#zimbabwe	#zimbabwecoup	#freshstart	#mugabemustgo
Measured from	2017-11-15	2017-11-15	2017-11-18	2017-11-18
Measured to	2017-11-24	2017-11-24	2017-11-24	2017-11-24
Total tweets	18323	13786	4321	8367
Total audience	147198145	42629048	8295909	17006991
Contributors	12905	9759	2727	6124
Original tweets	4794	5376	1800	2574
Replies	464	409	165	225
Retweets	13065	8001	2356	5568
Images and links	4199	4328	1165	1725

Table 2. Demographic information for tweets

	#zimbabwe	#zimbabwecoup	#freshstart	#mugabemustgo
Total users	17300	13786	4321	8367
Total gender detections	6338	4918	1612	3458
% Of detections	36.64%	35.67%	37.31%	41.33%
Total male	4323	3462	967	1934
Total female	2015	1456	645	1524
% Male	69%	71%	60%	56%
% Female	31%	29%	40%	44%

Table 3. Reach of the hashtags

	#zimbabwe	#zimbabwecoup	#freshstart	#mugabemustgo
Total audience	137 793 162	42 629 048	8 295 909	17 006 991
Contributors	12330	9759	2727	6124
Total tweets	17300	13786	4321	8367
Total potential impressions	300 603 889	70 293 213	19 106 621	32 708 443
Measured from	2017-11-15	2017-11-15	2017-11-18	2017-11-18
Measured to	2017-11-24	2017-11-24	2017-11-24	2017-11-24
Tweets per contributor	1.40	1.41	1.58	1.37
Impressions / Audience	2.18	1.65	2.30	1.92
Tweets per second	0.022430188	0.017704684	0.008282268	0.016185
Tweets per minute	1.34581126	1.062281035	0.496936078	0.971074
Tweets per hour	80.74867558	63.73686211	29.8161647	58.26444
Tweets per day	1937.968214	1529.684691	715.5879529	1398.347

Figures 1 and 2 present the trends for the number of tweets and potential impressions. In both cases, the trends are as expected, where they decline and peak during periods of increased activity in the physical world, such as the protests or the resignation. Despite remaining almost constant in terms of the number of tweets, major spikes can be seen correlating with these events for the #zimbabwe hashtag.

Figures 3 to 6 use PowerMaps in Microsoft Excel to visualize the geolocation data from the tweets. As is evident, the #zimbabwe and #zimbabwecoup hashtags were more prevalent in South African than in Zimbabwe. This is possibly due to the number of Zimbabwean ex-patriots living in South Africa, as well as the interest in political affairs between the neighboring countries. There could also be fear due to perceived oppression which kept the tweets internal to Zimbabwe low; once the political situation had swayed away from President Mugabe, the internal population may have felt more confident in voicing their opinion during the protests. As is state in Section 1, there were attempts to bock and retaliate against online activism, which may have initially prevented internal tweets until the population was confident that Robert Mugabe has limited control over the country and the security forces.

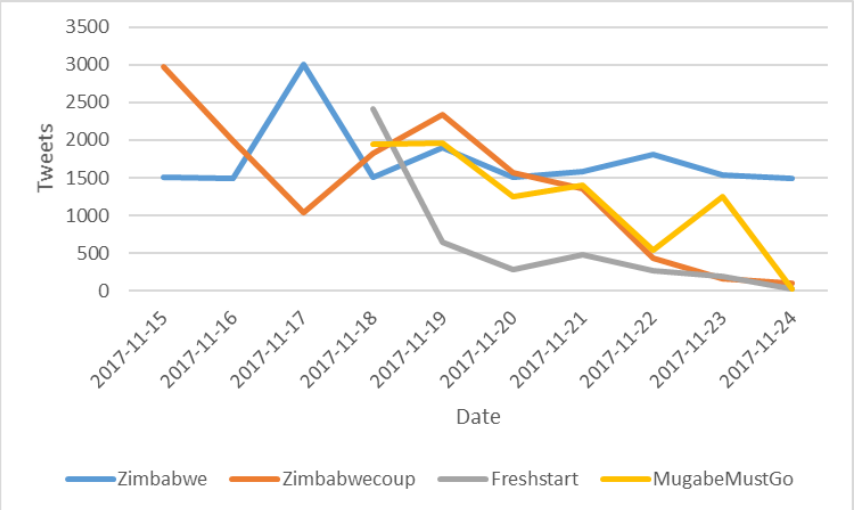

Fig. 1. Trends in the number of tweets

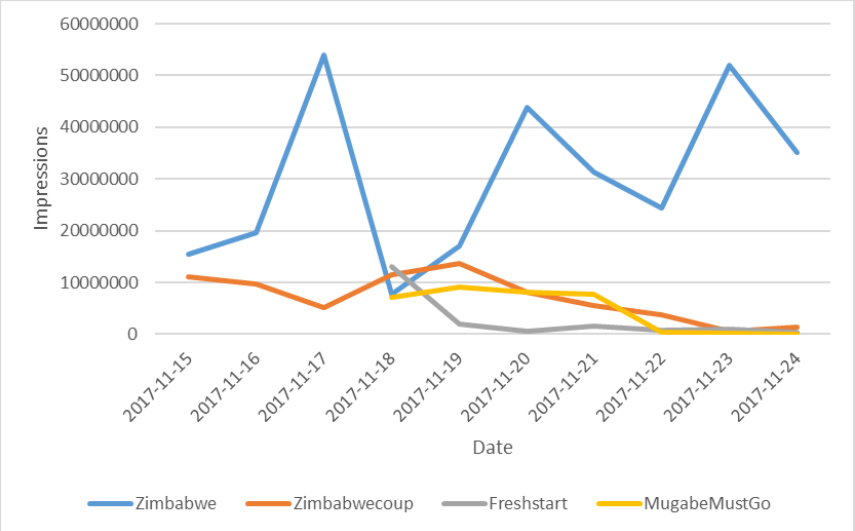

Fig. 2. Trends in potential impressions

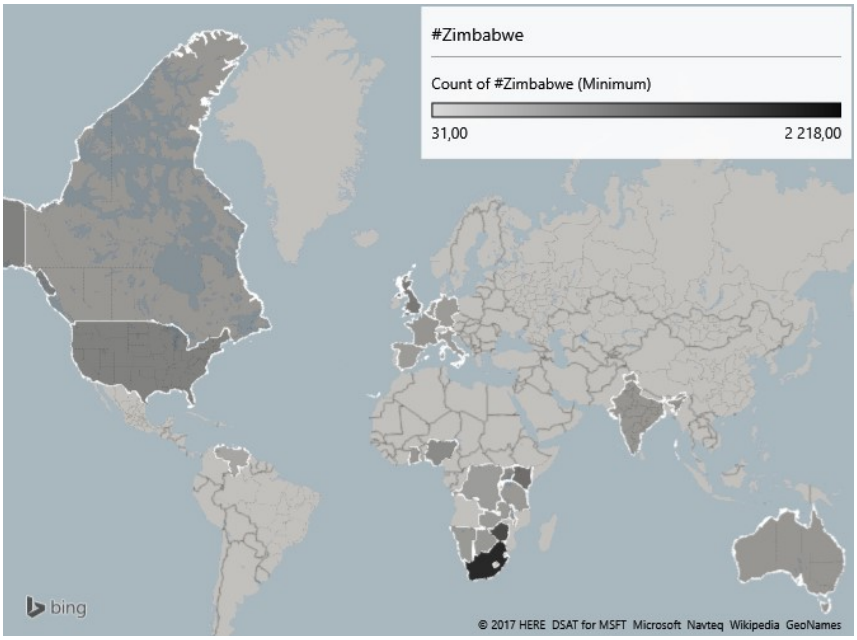

Fig. 3. Geolocation of the tweet origin for #Zimbabwe

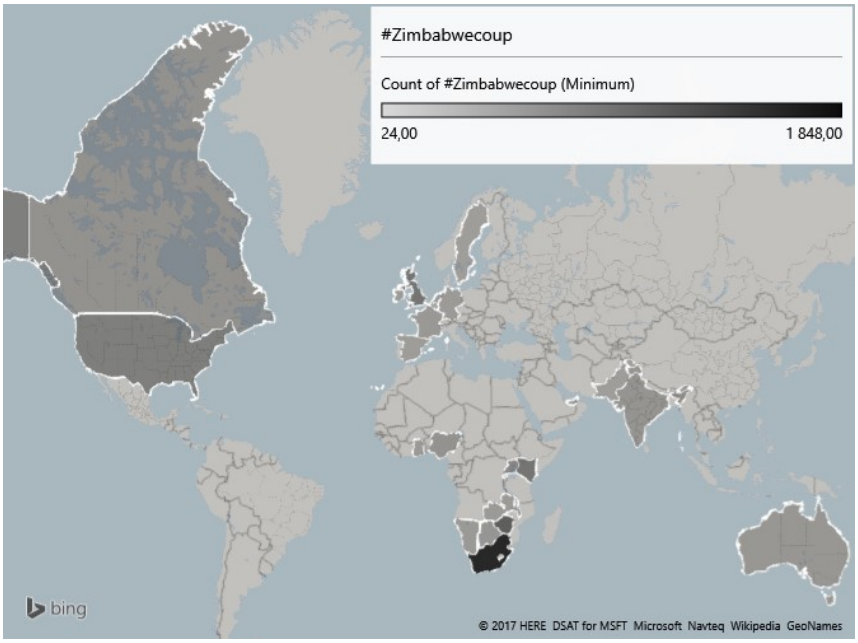

Fig. 4. Geolocation of the tweet origin for #Zimbabwecoup

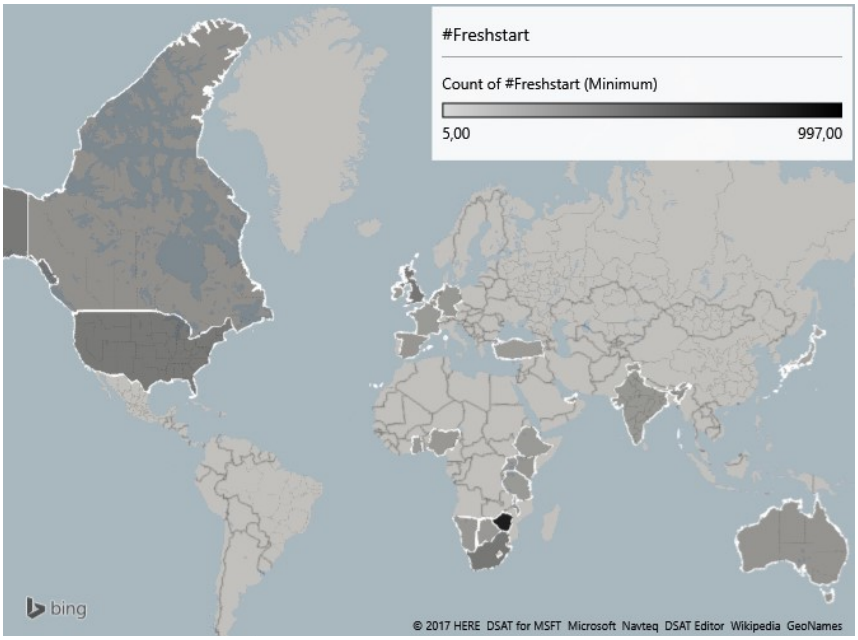

Fig. 5. Geolocation of the tweet origin for #Freshstart

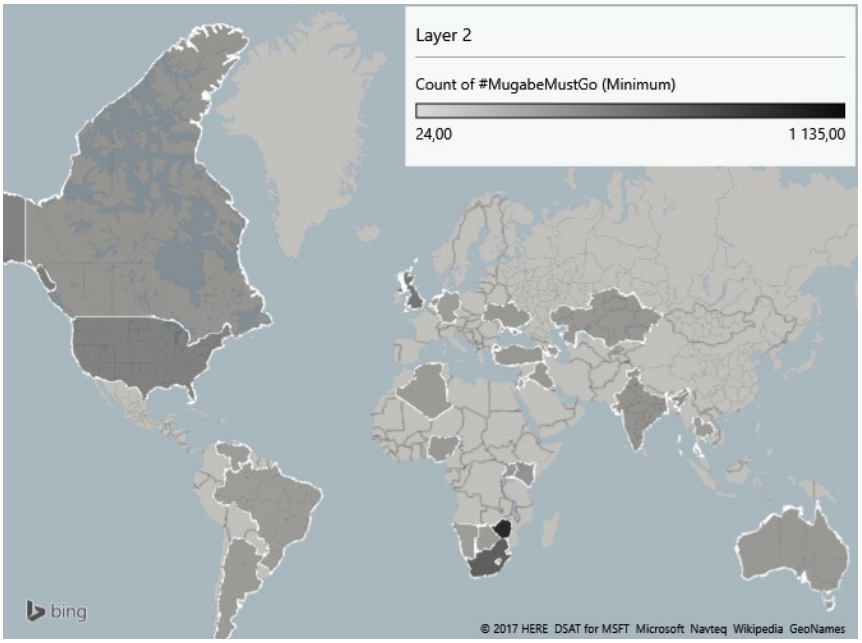

Fig. 6. Geolocation of the tweet origin for #MugabeMustGo

4.2 Twitter message analysis

This section presents more detail on the content of the tweets. A word cloud (Figure 7) is used to visualize the word content, where the larger words are more prevalent. The most prevalent, as is expected, is the #zimbabwe hashtag. This is followed by the #Mugabe hashtag, illustrating the prevalence of the family in relation to the protests (either in opposition or support of them).

Fig. 7. Word cloud for tweet content

Images were also sent via Twitter; examples of these are provided in Figure 8. Some appear light-hearted regarding the situation at the time, such as the image of a ‘KOO’ brand, playing on the word ‘coup’ [18], and a phrase from a movie [19]. Other images are clearly meant for the dissemination of information, including images of TV News broadcasts (an image of a general speaking on TV [20], and another image of a news report [21]) and the governing party’s official Twitter Feed [22]. Images also can document what the users can see, such as the troops in the street [23].

Fig. 8. Images distributed by Twitter [18-23]

5 Discussion

The four hashtags investigated exhibit characteristics that indicate that they were primarily used for information dissemination rather than dialogue, except for the #freshstart hashtag which appears to have a higher extent of dialogue. This shows a

lesser utilization of social media compared to other protests, such as the Maidan protests in Ukraine and the #feesmustfall protests in South Africa [13], where social media was also used to organize support in terms of legal and medical assistance; in Ukraine the social media was more akin to a command and control network [24]. However, the protests in Ukraine met strong government opposition [24], as did the #feesmustfall protests [13]. The protests in Zimbabwe following the military intervention was supporting the objectives of the intervention (the removal of Robert and Grace Mugabe from government), therefore there was not the need for command and control style communications. Given the military's commandeering of the national broadcasting and replaying of their own message, the initial strong geolocation data from South Africa indicates that Zimbabwean expatriates were disseminating information into Zimbabwe to keep the internal population informed of the broader global discussion compared to the 'one-sided' via available inside the country.

The use of social media to document the view of 'ordinary' citizens potentially provides for a more accurate view of history. However, this provides a challenge for those intending to cover up certain events. It also allows for real-time tracking of military or security force movements; this makes it more difficult to conduct a 'surprise attack', as also seen in the Ukraine [24]. This is again exhibited to a certain extent in the images distributed via Twitter during the military intervention in Zimbabwe.

Despite Zimbabwe's relatively low Internet penetration, the potential for social media as a tool for democracy and crisis communication was demonstrated during the military intervention. The previous attempts by the Zimbabwean government to curtail the use of social media indicates the concerns governments have over its use and potential to control a narrative, thereby transferring the soft power to the citizens and away from governments. The aspects of social information warfare were present in the social media use during the crisis, where information dissemination and political views and commentary were being distributed.

6 Conclusion

Growing dissatisfaction and political infighting led the Zimbabwean military to intervene and remove President Robert Mugabe from power in November 2017. As with most major modern events, there was commentary around the situation provided on social media. This paper provides an analysis of the Twitter metadata and content during the period of the military intervention to better understand how the virtual world reflected the physical occurrences. The Twitter use during this period was more for mass dissemination of information, potentially from outside the country into the country. The usage did not exhibit the command and control for protests as seen in other global uprisings; however, in the Zimbabwe case there was not necessarily the need for further usage. This case does illustrate the possible strength of social media to support democratic processes in terms of freedom of information. The transmission of images does however raise the security concern that movements of security forces or military can be tracked by most individuals with a basic cell phone.

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