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The Twittering Presidents: an analysis of tweets from @BarackObama and @realDonaldTrump

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Abstract

This paper uses a Systemic Functional Multimodal Discourse Analysis (SF-MDA) approach to analyse a sample of tweets from the personal Twitter accounts of Presidents Barack Obama (@Barack Obama) and Donald Trump (@realDonaldTrump). The sample consists of tweets for approximately the last nine months of President Obama's effective presidency (232 days) and approximately the first nine months of President Trump's presidency (232 days). The tweets are analysed using a combination of automated text analysis which is interpreted through an SF-MDA lens, supplemented by manual analysis informed by SF-MDA. The analysis examines the balance between ideational and interpersonal emphasis in the two sets of tweets with the aim of showing how the composition and content of the tweets construct a view of how each president and his presidency are presented to the public. The findings suggest marked contrasts in presidential style with President Trump foregrounding the interpersonal while President Obama foregrounds the ideational. Where President Trump presents as self-promoting, autocratic, opinionated and igniting discord in his tweets, President Obama presents as democratic, moderate, restrained and seeking social harmony.

Keywords: multimodal discourse analysis, social media, US politics, Twitter, systemic functional linguistics

1. Introduction

Since the first tweet¹ was posted on 21 March 2006 (Vergeer 2015, 745) the use of Twitter in political discourse has grown exponentially. In an analysis of social media use by leaders of United Nations member countries, Barbera and Zeitzoff (2018) show that use of Twitter as a tool for political communication grew from almost zero in 2008 to 76% by the end of 2014

(Barbera and Zeitzoff 2018, 122). According to Krzyżanowski and Tucker (2018) the use of social media platforms, specifically Twitter, for political communication purposes can be traced back to President Barack Obama's 2008 presidential campaign, largely due to his strong presence on social media networks (Krzyżanowski and Tucker 2018, 141). Although there was much online political communication during the 2008 US presidential primaries and election period, most of this was through email and text messaging. Twitter was still in its infancy and accounted for only 1% of online political activity (Smith 2009, 29). Since then, Twitter has come to play a large and growing role in political discourse. Stier, Bleier, Lietz, and Strohmaier (2018, 50) observe, for example, that social media platforms have become 'ubiquitous communication channels', particularly during election campaigns, largely due to the speed and efficiency with which platforms such as Twitter 'allow candidates to directly reach out to voters, mobilize supporters, and influence the public agenda' (Stier et al. 2018, 50).

Using a multimodal discourse analytical approach, this paper compares and contrasts a sample of tweets from the personal Twitter accounts of the two most recent presidents of the United States, President Barack Obama (@Barack Obama) and President Donald Trump (@realDonaldTrump), with the aim to show how the composition and content of their tweets function to construct a particular view of how each president and his presidency are presented to the public.

2. Literature Review

Although the use of Twitter in political discourse is a fairly recent phenomenon, it has generated a substantial body of research across a number of disciplines over a short time span. Much research on Twitter has focused on its use as tool for political communication in election campaigns. For example, Jungherr (2016) has compiled a comprehensive literature review of 217 research publications published between 2009 and 2016 on the use of Twitter in election campaigns. In his review, Jungherr found that the research was concentrated on three areas: studies of the use of Twitter by parties and candidates in election campaigns, studies on the use of Twitter by the public during election campaigns, and studies on the use of Twitter to comment on mediated events such as debates between candidates. According to Jungherr (2016) this vast body of research into the use of Twitter for political communication has also led to the emergence of different methodologies and approaches for data collection and data selection (Jungherr 2016, 72).

Notably, a vast body of research on the use of Twitter tended to be concerned with its use by political candidates during recent election campaigns in the USA. Conway, Kenski, and Wang (2015), in their investigation of the use of Twitter in the 2012 US presidential primary, state for example that this was ‘the first presidential election in which Twitter was heavily used’ (Conway et al. 2015, 364). Other studies have taken the 2016 primaries as their point of reference, in comparing and contrasting the linguistic styles and agenda-setting strategies used by presidential candidates. Stolee and Caton (2018) point out, for example, that Trump’s use of Twitter as a speech practice during the 2016 presidential campaign ‘may mark a shift in the rise of presidential talk to come’ (Stolee and Caton 2018, 147). Enli (2017) who compares the Twitter strategies of democratic candidate Hillary Clinton and republican candidate Donald Trump during the US 2016 presidential election campaign, similarly finds that Trump’s ‘amateurish yet authentic’ social media campaign style ‘points towards a de-professionalisation and even amateurism as a counter-trend in political communication’ (Enli 2017, 50).

Donald Trump’s unorthodox and often uncivil communication style has received particular attention (e.g. see Ott 2017). Auxier and Golbeck (2017), for example, who developed a predictive model based on the behavioural characteristics of tweets sent by Donald Trump himself and those sent on his behalf by his staffers, found that the majority of inappropriate tweets came from Trump himself. They also found that the tweets sent by Donald Trump himself tended to be more focused on himself, rather than on his audience, and were more negative, angry, and anxious than those sent by his staffers, whereby the tweets that garnered the most media attention tended to be more blustery and controversial (Auxier and Golbeck 2017, 377).

Lee & Xu’s (2018) content analysis of Donald Trump’s and Hillary Clinton’s tweets similarly revealed that half of the analysed tweets were attacks, whereby some of the issues raised by Trump in his tweets, such as media bias and Hillary Clinton’s alleged dishonesty, attracted significantly more likes and retweets from his followers, suggesting a deliberate use of Twitter for political agenda setting. Gross & Johnson (2016), who analysed a dataset consisting of all inter-candidate tweets by the 17 Republican presidential candidates in the 2016 primaries for predictors of negative affect online, similarly found that Donald Trump sent the most negative tweets and was more likely to strike out against his opponents. This was also the subject of Lee and Lim’s (2016) research on Donald Trump’s and Hillary Clinton’s use of Twitter during the campaign period. They found that one out of 10 of Trump’s tweets contained uncivil wordings or attacks on other candidates. These findings are

corroborated by Kreis (2017) who explores the meaning and function of Trump's discursive strategies on Twitter from a critical discourse analytical perspective, and who concludes that Trump employs a positive self-presentation and negative other-presentation to further his political agenda (Kreis 2017, 607). Ross and Caldwell's (2020) corpus-based linguistic analysis of Donald Trump's tweets, with a view to his use of negativity as a rhetorical political strategy yielded similar results. Conducted from Systemic Functional Linguistics perspective, using the analytical framework of APPRAISAL (e.g. Martin and White 2005), they conclude that Trump utilised communicative engagement strategies with the ultimate goal to attack and undermine the character of his political opponents (Ross and Caldwell 2020, 13). Trevisan (2020) similarly applied Martin and White's 2005 engagement theory to shed light on the linguistic strategies politicians use to strengthen their arguments and persuade their audiences to adopt their views. His analysis shows that Donald Trump's communicative practices tend to privilege meaning-making choices which 'fend off' or 'shut down' dialogistic alternatives, so as to give the writer an air of authority and provoke an unconscious response of support among his followers (Trevisan 2020, 337; see also Tasente 2020). Trump's tendency to ridicule others through pejorative labels, and his tendency to position himself as the only reliable source of truth, has also been noted by Ross & Rivers (2018) and Wignell, O'Halloran, and Tan (2018). Using a social semiotic approach, Wignell et al. (2018) show that the communicative strategies employed by Trump during the 2016 election campaign allowed him not only to come across as a man with definite and strong opinions, but ensured at the same time that Trump himself and his agenda received maximum publicity (Wignell et al. 2018, 194).

Most of the abovementioned studies have focused on the content and style of presidential candidates' use of Twitter during the 2016 presidential campaign, although more recent studies have begun to explore how President Trump's twitter style has changed over time, for example, by examining the grammatical patterns and stylistic variations in his tweets posted between 2009 and 2018 (e.g. Clarke and Grieve 2019), or by looking for quantitative changes in Trump's favoured modes over time (e.g. Watt et al. 2017). Studies that compare and contrast the content, communicative styles and use of Twitter by incumbent political leaders in the USA during their term of office, specifically from a multimodal perspective, are less prevalent.

3. Analysis of tweets from @BarackObama and @realDonaldTrump: A multimodal perspective

This paper focuses specifically on the use of Twitter by the two most recent Presidents of the United States: Presidents Obama and Trump. These are the first two US presidents to use Twitter during their terms of office. While the paper focuses on the use of Twitter by these two presidents during the terms of their presidency, it is situated in the broader context of the role of social media platforms, Twitter in particular, in shaping the nature of political discourse in the 21st century. This is a critical field of enquiry, given the new advertising techniques offered by Twitter (e.g. facilities for launching viral tweets) which have been effectively exploited by companies such as Cambridge Analytica (for example, during the Trump presidential campaign)².

Political information is and was tweeted by both administrations through a number of Twitter accounts. For example, information is posted through an official White House account (@WhiteHouse) and through the President's official account @POTUS44 for President Obama and @POTUS45 for President Trump (POTUS = President of the United States). In addition both presidents have private accounts: @BarackObama for President Obama and @realDonaldTrump for President Trump. These two presidents are the only US presidents who have had Twitter accounts while in office. President Obama joined Twitter in March, 2007³ and President Trump joined in March, 2009⁴. President Obama's account has 104 million followers, while President Trump's account has 57.6 million followers⁵. Barack Obama ranks third in the world in terms of number of followers, behind just behind Katy Perry and Justin Bieber, while Donald trump ranks thirteenth⁶. Based on number of followers alone these Twitter accounts are vehicles for large scale dissemination of information about each president and their presidency. In addition to the first wave of dissemination from these presidential accounts, the tweets are retweeted in numbers ranging from thousands to hundreds of thousands of times (e.g. Auxier and Golbeck 2017, Enli 2017; Lee and Lim 2016; Lee and Xu 2018; Tasençe 2020; Zhang et al. 2018). These tweets reach the followers of the re-tweeters. Furthermore, many presidential tweets serve as sources for news and opinion content on mainstream media, often reproduced as images. These tweets, therefore, represent a rich source of multimodal data.

In what follows, an outline of the theoretical model used in this paper is presented before discussing the data, methods of analysis, and findings. Lastly, the implications of the findings are discussed.

4. Theoretical model, data and method

4.1 Theoretical model

The tweets analysed in this paper are composed using a variety of semiotic resources. For example, some consist of language only; some also contain embedded images, with many of the images also containing text; and some contain embedded videos. Analysis of the tweets therefore requires a multimodal approach that takes into account not only the semiotic artifact itself, but also the social context in which the artifact appears. For this reason, the approach adopted in this paper is a social semiotic one, referred to here as Systemic Functional Multimodal Discourse Analysis (SF-MDA) (e.g. O'Halloran 2008; chap. 3 in Jewitt, Bezemer, and O'Halloran 2016; O'Halloran and Lim 2014; O'Halloran, Tan, and Wignell 2019). The foundations of SF-MDA are based on and derive from Halliday's systemic functional theory (SFT) (e.g. Halliday 1978, 1985b; Halliday and Matthiessen 2014). SFT is a theory of meaning which is designed to account for how language and other semiotic resources are organised and used to fulfill certain functions in human communication. There are two complementary views of semiotic resources in SFT: (a) semiotic resources as *systems of meaning*, which consist of series of options; and (b) semiotic resources as *texts*, which consist of choices from the available options in each system (e.g. see Halliday 2008). The meanings made by particular choices and combinations of choices are not seen in isolation (Halliday 1994, xiv-xxvi). Rather, the possible options and combinations of options provide the background against which particular choices and combinations of choices made in context are interpreted.

Although initially applied to language (e.g. Halliday 1985), SFT has been adapted and extended to the study of multimodal texts and artifacts to account for the ways in which linguistic and non-linguistic semiotic resources (e.g. spoken and written language, image, gesture and sound) combine and interact in the communication of meaning (e.g. Bateman 2014a, 2014b; Jewitt 2014; Kress and van Leeuwen 2001, 2006; O'Halloran 2004, 2008; O'Toole 2011; Royce 2007; van Leeuwen 2005, 2012).

One of the key concepts from SFT that guides SF-MDA is Halliday's metafunctional principle, which proposes that language and other semiotic systems realise three kinds of meanings simultaneously. These are referred to as: (a) *ideational* meaning, for construing our experience and knowledge of the world (experiential meaning) and making logical connections between and among events in that world (logical meaning); (b) *interpersonal* meaning for enacting social relations and expressing attitudes; and (c) *textual* meaning for organising meanings into coherent messages (e.g. Halliday 1978; Halliday and Matthiessen 2014). The choices made in relation to these kinds of meaning are influenced by the social/semiotic context in which the meanings are being made.

A key principle of SF-MDA is that semiotic resources have an underlying organization (i.e. the systems with the various sets of options) which enables the three metafunctions to be realised. For example, complemented by concepts from social semiotics, critical discourse analysis, photography, film theory, and visual design, this has resulted in the formulation of visual systems which function to structure our experience of the world in terms of participants, processes and circumstances. Similarly, interpersonal visual systems such as direct and indirect gaze, and compositional/textual systems such as framing and perspective have also been formulated and successfully applied for the analysis of visual texts (e.g. Kress and van Leeuwen 2006; O'Toole 2011).

Another key concept from SFT that informs SF-MDA most relevant to this study is the concept of register, which extends the metafunctional principle to the modelling of social context (e.g. Martin 1992; Martin and White 2005; Martin and Rose 2007). Register theory describes the impact of three key variables on the way language is used in context. The three key register variables, theorised as *field*, *tenor*, and *mode*, are directly related to the metafunctions. Field, for instance, relates to the ideational metafunction, and describes what a text is all about, or what is happening. Tenor, in turn, relates to the interpersonal metafunction, and is concerned with the ways social relations are enacted through dimensions such as power and solidarity. Mode relates to the textual metafunction, and is concerned with the role language plays in constructing discourse and the information flow across different media or channels of communication such as speech, writing, images, web pages and video (see Martin and Rose 2007).

Applying a metafunctional approach, tweets from the personal Twitter accounts of Presidents Obama and Trump are analysed by exploring the various semiotic resources which are deployed in the tweets (i.e. language, image and videos) and how these combinations of choices from these resources work together to create a view of the president and his administration to the public. The language in the examples in this paper is analysed using a combination of SFT and automated analysis of some aspects of the language using Natural Language Understanding models (e.g. see Sorato and Fileto 2019), in this case IBM Watson's online demonstration software⁷. The results of the automated linguistic analysis are interpreted through an SFL lens. The visual texts are discussed using a model based on O'Toole's (2011) metafunctional framework together with concepts from Kress and van Leeuwen (2006).

4.2 Data

The data for this study consists of tweets from the Twitter accounts of Barack Obama (@BarackObama) and Donald Trump (@realDonaldTrump). We are not proposing that every tweet appearing on these accounts is composed by the president himself. In fact, many of the tweets, especially complex multimodal tweets, were most likely composed by members of the president's staff (e.g. see Auxier and Golbeck 2017; Enli 2017; Enli and Naper 2016; Lee and Lim 2016). It is, however, assumed that, whether the president composed the tweets or not, since they appear on the president's private account, they have the president's explicit or tacit approval. Along with the tweets composed by the president himself, they therefore contribute to the view that the president is aiming to present to the public about himself and his administration.

The tweets analysed in this study cover the same number of days (i.e. 232 days) for both presidents and represent the final months of President Obama's presidency and the first months of President Trump's. The Obama tweets are from a period of 232 days from March 18, 2016 to November 5, 2016, effectively the final active months of President Obama's presidency. The cut-off date is when President Obama made his last tweet on this account as President of the United States. The beginning date was as far back in time as it was possible to go when the tweets were accessed⁷.

Another possibility for data selection could have been to compare and contrast the first months of either of President Obama's two terms with the first months of President Trump's term. However, at the time the tweets were accessed, President Obama's tweets from these times were not accessible. Therefore the most feasible choice for a comparable sample of tweets was the final months of President Obama's presidency, going back in time as far as possible from President Obama's final tweet as active president. In addition, since the last months of President Obama's presidency and the first months of President Trump's presidency are more or less consecutive (allowing for the gap between the November, 2016, election and President Trump's inauguration in January, 2017), the tweets represent the use of Twitter by both presidents at the time.

The initial sample consisted of 691 tweets. After re-tweets were removed the sample analysed was 627 tweets. The Trump tweets cover the period from his inauguration on January 20, 2017 to September 9, 2017, also a period of 232 days. The initial sample consisted of 1462 tweets. When retweets were removed the sample was reduced to 1291 tweets. President Obama's tweets were copied directly from @BarackObama. President Trump's tweets were downloaded from the Trump Twitter Archive (<https://www.google.com/search?client=firefox-b&q=trump+twitter+archive>).

The text of the tweets (i.e. Obama: 627 tweets; Trump: 1291 tweets) was extracted for analysis. The tweets were also categorised according to features of their composition: for example, whether their content consisted of text/language only or whether they were multimodal (language and/or image and/or video). Specifically, texts which contained only language or language and a hyperlink within the tweet were categorised as text only tweets. Tweets were categorised as multimodal if they contained text and either an image, GIF, an embedded video or a link to another source which was included in an image. Tweets where a link to an external source is included in or accompanied by an image are included in the text and image category in Table 1. Examples of the different types of multimodal tweets are shown in Figures 1 and 2. Numbers of each type of tweet from both presidents are displayed in Table 1. The results show that 66.3% of President Obama’s tweets were multimodal (i.e. 416 out of 627) and 33.7% text only. For President Trump, 29.0% of the tweets were multimodal (i.e. 374 out of 1291) and 71.0% were text only.

Table 1. Categorisation of tweets

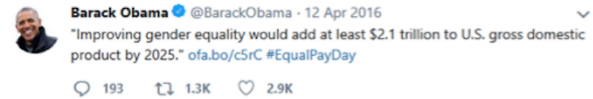
	Total	Text only	Text and image	Text and GIF	Text and video
Obama tweets	627	211	356	41	19
Percentage	100%	33.7%	66.3%		
Trump tweets	1291	917	199	1	174
Percentage	100%	71.0%	29.0%		

Table 1 shows the numbers of each category of tweet made by each president. Several initial observations can be made from the table. First, Donald Trump is a much more prolific tweeter than Barack Obama. Over the same number of days Donald Trump made just over twice as many tweets as Barack Obama. Second, Donald Trump favours tweets consisting of text only over Barack Obama by a ratio of 4.35:1. The principal difference in the total numbers of tweets is more or less accounted for in the numbers of text-only tweets. Subtracting the text-only tweets from the total number of tweets for each president leaves 416 tweets for President Obama and 374 tweets for President Trump. Despite the difference in total tweet numbers more multimodal tweets were posted on @BarackObama than on @realDonaldTrump. Barack Obama’s account favours multimodal tweets over text-only

tweets by a ratio of 1.98:1 while Donald Trump’s account favours text only tweets over multimodal tweets by a ratio of 2.45:1. Donald Trump favours tweets containing videos over Barack Obama by a ratio of 9.16:1. Whereas Barack Obama clearly favours tweets with a static image or a GIF over video, for Donald Trump the proportions of each are similar (1.4:1 in favour of images). Inferences drawn from these patterns will be raised in the Discussion section of this paper.



(a) Tweet consisting of text only



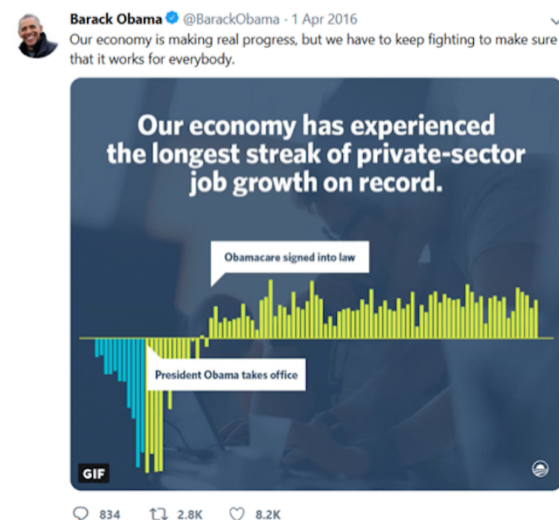
(b) Tweet consisting of text and a hyperlink



(c) Tweet containing text and image



(d) Tweet containing image with included link to external content



(e) Tweet containing a GIF



(f) Tweet containing an embedded video

Figure 1. Examples of categories of tweet for President Obama

(a) Tweet consisting of text only

(b) Tweet consisting of text and a hyperlink

(c) Tweet containing text and image

(d) Tweet containing image with included link to external content

(e) Tweet containing a GIF

(f) Tweet containing an embedded video

Figure 2. Examples of categories of tweet for President Trump

4.3 Method

The text of the tweets was analysed in two stages. First the text of all the tweets by both presidents was analysed automatically through the online demonstration version of IBM

Watson Natural Language Understanding⁸. The samples of text for each president were divided into three-month intervals in order to examine the changes over time. Since the timespan for each president’s set of tweets covers nine months (June to November, 2016, for President Obama and January to September, 2017 for President Trump), three-month intervals were selected as this length of interval provided for sufficient tweets to be included in each period to allow patterns in the tweet to be identified. An alternative might have been to use monthly intervals. However, this would have reduced the number of tweets in each period, thus making patterns more difficult to discern. The text was analysed for *categories*, *keywords*, *sentiment* and *emotion* (see Wignell, Chai, Tan, O’Halloran, and Lange 2018, for a discussion and evaluation of a similar use of this method). When interpreted through an SFL lens *categories* and *keywords* give an overall view of the ideational flavour of the text’s field. *Categories* assigns the text to a broad domain of human activity, while *keywords* provide more specific information about where within that domain the texts are situated. It appears that *categories* is inferred by patterns of *keywords*. *Sentiment* and *emotion* give clues as to its interpersonal orientation. Sentiment is assigned a value between -1 and +1, with 0 showing neutral *sentiment*. *Emotion* assigns a value between 0 and 1 for five emotions: joy, anger, disgust, sadness and fear. The inferences that can be drawn from the automated *sentiment* and *emotion* analyses are limited as they do not show the direction of the sentiment or emotion and the criteria on which they are based is a ‘black box’. These analyses are supplemented by further manual analyses which indicate interpersonal stance such as the use of first person pronouns and attitudinal lexis. The multimodal tweets analysed are a sample of tweets containing an image of each president. These tweets are discussed from ideational and interpersonal perspectives.

5. Findings and Discussion

5.1 Automated analyses

Categories

The IBM Watson online demonstration software assigns three *categories* to a body of text. Each of these *categories* is drawn from a hierarchy of *categories*⁹. The three highest ranked categories for each president for each period of three months are shown in Table 2.

Table 2. Results of *categories* analysis

President Obama	President Trump
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Time	Category	Time	Category
March to May, 2016	Law, govt and politics/government (0.94) Society/work (0.72) Law, govt and politics/politics/elections (0.69)	January to March, 2017	Law, govt and politics (0.93) Law, govt and politics/government (0.82) Society/unrest and war (0.80)
June to August, 2016	Law, govt and politics/government (0.92) Society/work (0.70) Society/work/unemployment (0.68)	April to June, 2017	Law, govt and politics (0.95) Law, govt and politics/government (0.86) Society/unrest and war (0.82)
September to November, 2016	Law, govt and politics/government (0.91) Society/work (0.69) Society/work/unemployment (0.67)	July to September, 2017	Law, govt and politics (0.96) Law, govt and politics/government (0.87) Society/unrest and war (0.84)

The categories analysis clearly situates the text in the domain of politics and government, as would be expected given the role the two men occupy. For the highest ranked *categories* the results are similar (*law, govt and politics/government v law, govt and politics*). It is at the second and third levels of the category analysis that more marked differences appear. *Law, govt and politics/government* appears as the second level *category* for President Trump and *society/unrest and war* appears as the third level *category* for each three-month period. The differences at least hint at differences in each president's approach to government. Five out of the six second and third ranked *categories* for President Obama indicate a concern for social issues, which arise from a concern for government rather than simply politics, while for President Trump the three third ranked *categories* indicate a degree

of discord, which perhaps arises out of a concern for politics above a concern for government.

Keywords

Table 3 shows the results of the keywords analysis. The top ten keywords for each three-month period are shown.

Table 3. Results of *keywords* analysis

President Obama		President Trump	
Time	Keywords	Time	Keywords
March to May, 2016	President Obama, Judge Merrick Garland, tunes of James Taylor, climate change, Senate leaders, editorial board, global climate agreement, James Taylor, New York, clean energy	January to March, 2017	Great concert, fake news, P.M. today, news outlets, big day, great reviews of the speech, great meeting, great honor, American people, first interview
June to August, 2016	President Obama, Senate leaders, Judge Garland, obstruction of our Supreme Court, weekly address, clean energy, Supreme Court, America's economic progress, editorial boards, climate change	April to June, 2017	Great honor, great military man, fake Trump, big news, Fake news media, President al-Sisi of Egypt, good things, make America great, great Justice, great day
September to November, 2016	President Obama, Senate leaders, climate change, weekly address, Judge Garland, American people, Supreme Court, important facts, editorial boards, Vice President Biden	July to September, 2017	Great people of Canada, great veterans, fraudulent news media, years US beef hits, make America great again, much work, numerous states, great American people, fake news, FLOTUS Melania
Top 10 keywords by frequency	President Obama (3), Judge (Merrick) Garland (3), Senate leaders (3), editorial boards* (3), Supreme Court (2), climate change (2), clean energy (2), James Taylor (2), weekly address (2), global climate agreement** (1)	Top 10 keywords by frequency	Fake news (3), make America great (again) (2), fake Trump (1), fraudulent news media (1), big day (1), great day (1), American people (1), FLOTUS Melania (1), great American people (1), great people of Canada (1)

			Note: <i>great</i> appears 11 times, <i>fake</i> 4 times (<i>fraudulent</i> once)
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**Editorial boards* relates to the issue of Judge Garland’s proposed appointment to the US Supreme Court. The reference is to what President Obama sees as discontent among the press at the Senate’s refusal to endorse Judge Garland

***Global climate agreement* was selected from a number of words with a frequency of 1 because it is closely related to other keywords climate change and clean energy.

The results of the *keywords* analysis are revealing as they give insights into each president’s specific concerns over a given time period. Leaving out *weekly address* and *James Taylor*, which are there to announce events, President Obama’s most frequently used keywords from the top ten list over the whole sample are: climate (135 times), President Obama (122), references to Judge Merrick Garland (87), Senate leaders (85), Supreme Court (68), editorial boards (18) and clean energy (13). These reflect the two most recurring issues raised in the tweets: i.e. climate change and the Senate’s obstruction of the appointment of President Obama’s nominee, Judge Garland, to the Supreme Court. They demonstrate a clear and consistent focus.

The results of the analysis of President Trump’s keywords analysis are more difficult to interpret. They show no clear policy focus or agenda. In fact the most frequently occurring words from the top ten list are adjectives rather than nouns: great (256 times), fake (116 – 91 times in conjunction with news), big (97), American (89). The most frequent nouns are America (190), news (145), media (75), FLOTUS Melania (13). The pattern of *keywords* indicates a very different presidential style from that of President Obama. President Trump appears to divide experience into positive and negative categories: things he approves of (*great, big*) and those he disapproves of (*fake*). One consistent motif is a continuing battle with the *fake news media*. This battle with the media perhaps, at least in part, links back to the prominence of the *category* society/unrest and war emerging from the Trump tweets. This is not to say that President Trump has no policies but what it does hint at is that policies take a back seat to persona in terms of what is approved and what is not.

Sentiment

Table 4 shows the results for *sentiment* analysis.

Table 4. Results for sentiment analysis

President Obama		President Trump	
	Sentiment		Sentiment
March - May, 2016	+0.39	January - March, 2017	-0.33
June - August, 2016	+0.31	April - June, 2017	-0.32
September - November, 2016	+0.29	July to September, 2017	+0.32

The sentiment of President Obama’s tweets is uniformly in the lower-middle positive range. The difference between the highest and lowest value is 0.10. The text of the tweets shows a consistent moderately positive sentiment. In contrast, the sentiment in President Trump’s tweets ranges from -0.33 to +0.32, a difference between the highest and lowest values of 0.65, indicative of much greater volatility in sentiment in President Trump’s tweets.

Emotion

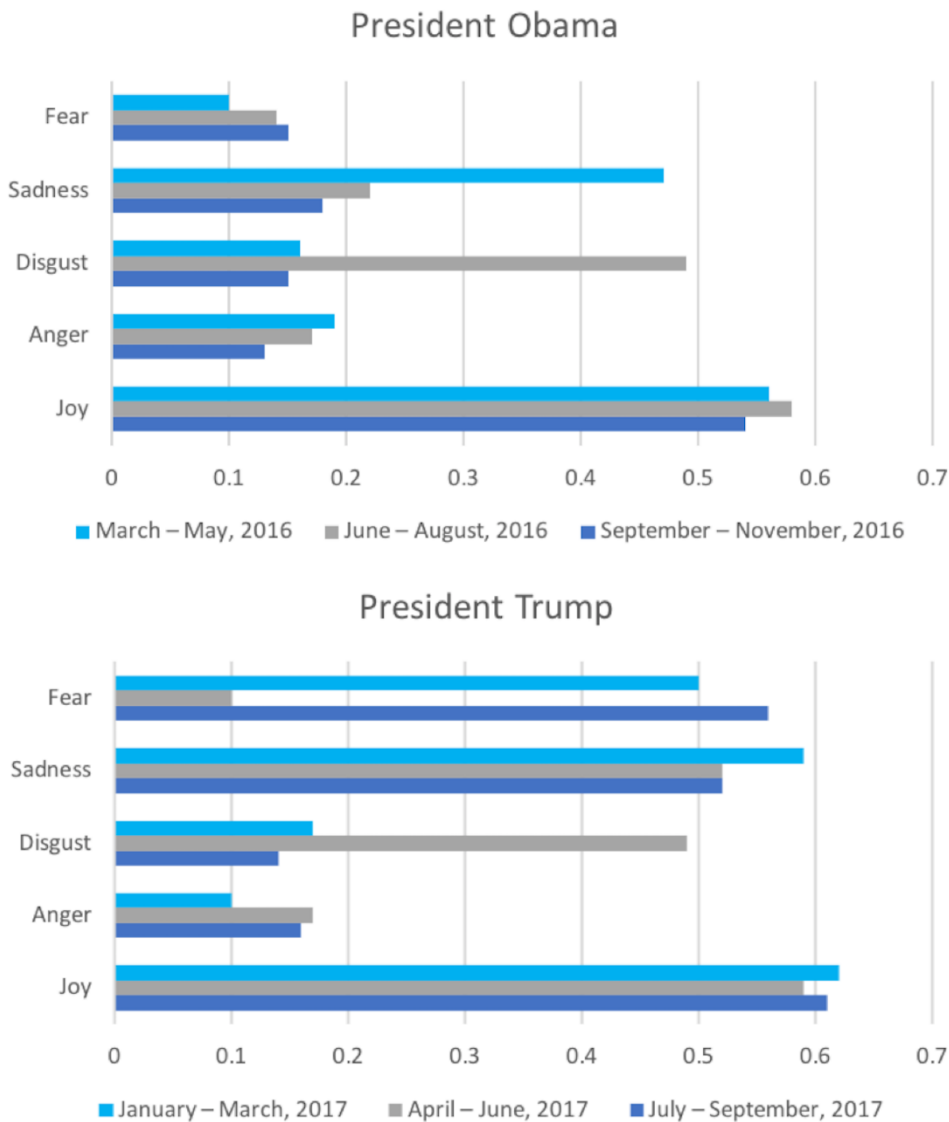


Figure 3. Results of emotion analysis

The emotion analysis shows similarities and differences between the two presidents. As shown in Figure 3, both record similar and consistent moderately high values for *joy* and consistently low values for *anger*, indicating in general a positive, confident and upbeat attitude. The values for *disgust* are similar for both presidents and both show the same pattern: two low values with a higher value in between. Without knowing the criteria for how *emotions* are calculated it is not really possible to speculate on the reasons for this pattern. President Trump's tweets show higher values for *sadness* than President Obama's and much higher values for *fear*. It is possible that the values for these two *emotions* are related to the *category* society/unrest and war, which is constant in President Trump's tweets across the nine month period but not present in *categories* for President Obama's tweets. In which case it would not be President Trump who was sad and afraid but rather it is more likely that the value comes from the president trying to instil *sadness* and *fear* into the American people.

5.2 Manual Analyses

Two manual analyses are used to supplement the automated analyses. These are the use of first person pronouns and the use of attitudinal lexis in the tweets. Both of these are interpersonal in orientation and will indicate the president's stance in relation to the subject matter of the tweets.

First person pronouns

President Trump is quite prolific in the use of first person pronouns. He uses *I* 272 times, *we* 198 times, *me* 46 times and *us* 20 times, for a total of 536 uses. He is referred to in the third person as *President Trump* 5 times. When using the plural pronouns, *we* and *us*, President Trump is typically referring to himself and his administration. In contrast President Obama is rarely referred to in the first person. He uses *I* 5 times, *me* once, *we* 70 times and *us* 5 times. He is referred to in the third person as *President Obama* 122 times. When using *we* and *us* President Obama is most often referring to himself and the American people. The use of first person pronouns, especially *I* and *we*, impacts on the textual, ideational and interpersonal meanings made in the tweets. The various impacts are inter-related, as discussed below.



Figure 4. Example tweets by both presidents using first person pronouns

In terms of the textual metafunction, first person pronouns typically occupy the role of topical theme as the first ideational element in the clause. The theme ‘is the starting point for the message: it is what the clause is going to be about’ (Halliday, 1985b: 39). The use of a first person pronoun such as *I* indicates that *I* is the topic of what follows, hence what follows is about *me*. Ideationally the first person pronoun most often occupies a key participant role in the text. In the example in Figure 4, “I am working on a new system where there will be competition in the Drug Industry”, Donald Trump is the actor in a material process of “working”. In Obama’s tweet “We can’t sit idly by”, the key actor is “we”: i.e. Obama and everyone else. Interpersonally, pronouns such as *I* and *we* occupy the position of grammatical subject, which is a key element in terms of interaction. That is, the subject is the element which is being negotiated (see Halliday, 1985b: 74-78). In the examples in Figure 4 the first person subjects (*I* and *we*) combine with the finite elements (*am* and *can’t*) form the core of propositions: those things which are up for negotiation.

When looked at from a metafunctional perspective, the pronouns *I* and *we* occupy key roles across metafunctions: topical theme, key participant and grammatical subject. That is, the discourse containing them is all about ‘me’. In the case of President Trump’s tweets many more are all about him than is the case with President Obama’s tweets. This indicates a tendency favouring the interpersonal in President Trump’s tweets and a tendency favouring the ideational in President Obama’s tweets. That is, President Trump’s tweets are more about him while President Obama’s tweets are more about issues (for example, climate change).

In addition, the frequent use of first person pronouns, in combination with a high proportion of text-only tweets, indicates that a high proportion of President Trump’s tweets are composed by him personally than is the case with president Obama. The fact that

President Obama is referred to as President Obama so many times suggests strongly that he did not compose these tweets himself. In addition, a higher number and larger proportion of multimodal tweets on @BarackObama indicates that, while the tweets are posted on the president's account, they are unlikely to have been composed by him personally.

Attitude

The analysis of attitude is informed by Martin and Rose (2007) and Martin and White (2005). According to Martin and Rose (2007, 22) appraisal 'is concerned with evaluation: the kinds of attitudes that are negotiated in a text, the strengths of the feelings involved and the ways in which values are sourced and readers aligned.' The text of all the tweets was examined for words which showed a positive or negative attitude. The process was to read the text until a word was identified. An automated count of the frequency of that word (and derivatives) was then done. Each time a new positive or negative word was encountered the same process was conducted. Table 5 shows the most frequently used attitudinal words used by both presidents. The most frequently used 10 words are shown in each case except for words expressing negative attitude used by President Trump. As President Trump used so many negative words both in frequency and number 15 of his favourite negative words are shown. It should be noted that interpretations of positivity and negativity as influenced by the context in which the word appears.

Table 5. Words expressing positive and negative attitude used by both presidents

President Trump				President Obama			
Positive (top 10)	Total	Negative (top 15)	Total	Positive	Total	Negative	Total
great*	278	fake	116	fair	56	obstruction (-ist, -ism)	24
big	91	bad	49	love	28	partisan	16
strong	36	illegal	22	equality	16	violence	14
good	33	lying/lie	15	big	13	unacceptable	8
heroes	17	phony	14	#DisarmHate	11	unprecedented	7
better	17	wrong	13	good	9	deniers (-al)	5
best	15	weak	11	strong	7	misinformation	5
right	12	terrible	10	right	6	devastating	2
fantastic	10	criminal	8	better	6	discrimination	2
tremendous	10	dishonest(y)	8	pride	4	cynical	2
		#Crooked Hillary	7				
		crazy	7				

		disaster	6				
		sick	5				
		radical	5				

Notes: The 278 instances of great in the Trump tweets includes 22 instances of #MAGA, the acronym for Trump’s campaign slogan ‘Make America Great Again’.

Table 5 provides a wealth of insight into the interpersonal stance of the two presidents. To begin with, President Trump’s positive evaluations all tend to be somewhat generic. Moreover, all the evaluations are adjectives, with the exception of ‘heroes’, which is used to refer to serving and former members of the US armed forces. As such, these evaluations assign a positive attribute to someone or something. In the Trump tweets this is almost always Donald Trump himself, something on his policy agenda or the American people (or some section of the American people). The words also trend to be at the higher end of a scale of positivity (e.g. *great, fantastic* and *tremendous*). The prolific use of “great” carries on from his election campaign. President Obama’s positive attitudes are also adjectives to some extent (e.g. *fair, big, good* and *strong*) but also include nouns (e.g. *love, equality, #DisarmHate* and *pride*). Present Obama’s positive attitudes are not directed explicitly towards himself. They are largely directed towards themes such as social justice and fairness.

President Trump’s negative attitudes show a similar pattern to his positive attitudes: they tend to be at the higher end of a scale of negativity (e.g. *fake, phony, crazy, disaster* and *criminal*) and they are directed at people and institutions that he regards as opponents or enemies such as Hillary Clinton (e.g. *#CrookedHillary*), media outlets that he perceives as not supporting him (e.g. *fake, phony*), Muslims (e.g. *radical*) and opposition in general (e.g. *crazy, sick* and *phony*). Much of the negative attitude attacks the credibility and honesty of his opponents. Anyone and everyone who President Trump perceives as opposing him is potentially a target. The means and pattern of expression of attitude in President Trump’s tweets follows the same pattern that Wignell et al. (2018) found in their analysis of his tweets during the 2016 US presidential election campaign. In contrast President Obama’s negatives are much fewer in number and far less personal. They are directed at the United States Senate as an institution (obstructionist, partisan, unacceptable) not at individuals and they are directed at issues such as gun control (violence) and addressing climate change (deniers, cynical, devastating).

5.3 Multimodal tweets

The discussion of multimodal tweets focuses on the number, content and composition of the images of the president in the tweets and in relation to the rest of the tweet and how these combine interpersonally to create an overall image of the president and his presidency.

In total, 59.4% of the 374 multimodal tweets in the data set of President Trump's tweets contain an image of President Trump (i.e. 222 in total). On the other hand, 20.4% of the 416 multimodal tweets in the data set of President Obama's tweets contain an image of President Obama (i.e. 85 in total). That is, President Trump's multimodal tweets contain an image of him nearly three times as often as President Obama's tweets. As well as the difference in the number of images, the images of each president also differ in content and style. Figures 5 and 6 show examples of the different styles of image used to depict each president.

The three images in Figure 5a show the most typical pattern of images of President Obama. In these images the text superimposed over the image is prominent and the image of President Obama is muted. That is, the content of the message in the superimposed text is foregrounded and the president is backgrounded. The image of President Obama, while muted, also carries interpersonal weight. In the image on the left in Figure 5a the president is smiling, showing that he is happy about the announcement in the text. In the middle image he is looking determined, echoing the highlighted words *committed* and *fight* in the text. In the right hand side image he is looking somewhat concerned and sad, echoing the message in the text about gun violence. In these examples the text of the image is most prominent, highlighting the issue and the image of the president is, while backgrounded, showing visually the president's stance in relation to the issue in the text.

The images in Figure 5b show the president in formal circumstances. Images of this type are the least typical in the Obama tweets. More common are images of the president in informal circumstances, out and about meeting the people in small enough groups that they are recognisable as individuals. Even though these images are clearly posed they depict the president as a man of the people, comfortable in their company. The images in Figure 5d show the president with family members at home and in the outdoors. Again, these images are posed but depict the president as a caring family man.

The typical images of President Trump are a marked contrast to those of President Obama. The most typical, and frequent, images of President Trump show him in formal situations, signing documents, giving an address, meeting other world's leaders and flanked by delegations or aides. All of these images are staged and depict the president in the role of president, being 'presidential'. In all of these images President Trump is the central figure in

the image. The images in Figure 6b are also typical and show the president addressing mass rallies. The image of the president, although small, is made prominent by being lit more brightly than the crowds in the background. In contrast to the Obama images, the crowd is a crowd, not a group of individuals.

The image in Figure 6c, showing the president and first lady, is rare. It is one of the few images showing the president with a family member and was taken at an official ceremony. No informal images of President Trump with family members could be found in the tweets.



(a) The most typical use of images of President Obama



(b) President Obama formal



(c) President Obama informal



(d) President Obama with family members

Figure 5. Typical images of President Obama



(a) Typical images of President Trump



(b) President Trump addressing mass rallies



(c) President Trump and First Lady Melania

Figure 6. Typical images of President Trump

In summary, the images of President Obama show him in a variety of roles such as president, family man and man of the people. Formal images of President Obama in the role of president are the least common. The most common images highlight and foreground issues that concern the president. President Obama is depicted as a public figure and as a private citizen. The images of President Trump, on the other hand, almost all show him in the role of president in formal circumstances. Where President Obama's image is often backgrounded and muted in images, President Trump is almost always in the spotlight. President Trump is almost always depicted as president and as a public figure.

6. Summary and findings

What do these analyses allow to infer about how the two presidents and their presidencies are presented to the public through their Twitter accounts? Both presidents were/are occupying the same role, albeit one towards the end of his presidency and the other at the start. When looked at in conjunction the analyses indicate that, although both presidents are/were doing the same job, their stance in relation to that job is markedly different. In terms of *categories* and *keywords*, for example, both presidents are engaged in the same broad activity, the executive role in the government of the United States. What differs is the interpersonal stance each president takes. The more foregrounded ideational focus in President Obama's tweets shows him as being concerned with issues and with government and governance: *doing* the job of president rather than just *being* the president. It is in the *categories* hierarchy that differences first become apparent (see Table 2). For President Trump the first level *categories* are consistently about *law, govt and politics* and the third level is consistently *society/unrest and war*. No particular issues emerge in these analyses. In contrast, in President Obama's case the *categories* of *society/work* and *society/work/unemployment* are present.

The *keywords* analysis also highlights some differences. In President Obama's tweets specific issues such as climate change and the role of the Senate in the appointment of Supreme Court judges are highlighted. Whereas the *keywords* analysis of President Trump's tweets shows the president's attention seems to be on the role of president and denouncing his critics rather than on the business of governing. Where President Obama's focus is principally ideational, with interpersonal stance present in relation to particular issues, President Trump's focus is principally interpersonal. It appears that, as president, Donald Trump adopts the same interpersonally-oriented strategies he adopted as candidate (see Wignell et al, 2018, for an analysis of Donald Trump's domination of semiotic space in his presidential election campaign). It can be at least provisionally inferred from the *categories*

and *keywords* analysis that President Obama seems to focus on building/restoring social harmony while President Trump foregrounds discord and discontent.

Interpersonal differences emerge more clearly in the *sentiment* and *emotion* analyses. Both the *sentiment* and *emotion* analyses show President Trump to be more volatile and generally more negative than President Obama. The analysis of attitudinal lexis shows this volatility and negativity to be directed at his critics and opponents (see Table 5). Likewise the high value for *fear* for Donald Trump in the *emotion* analysis relates directly to the *category*, society/unrest and war, with Trump fuelling fear in the public.

The language analysis suggests that Donald Trump's presidency is mostly about Donald Trump. A similar pattern can be seen in the analysis of images. In both language and images President Trump foregrounds himself, whereas President Obama tends to downplay himself. He is still present, just not in the foreground of the text and image in almost every tweet.

In terms of presidential style, President Trump foregrounds the interpersonal while President Obama foregrounded the ideational. For President Trump it appears that the presidency is more about being the president than governing the country whereas for President Obama the opposite seems to be the case. Where President Trump comes across as autocratic, authoritarian, opinionated and igniting discord in his tweets, President Obama comes across as democratic, moderate, restrained and seeking social harmony. Moreover, it appears that these differences continue to be played out on the world stage in an age which is increasingly characterised by social unrest and geopolitical antagonism.

Notes

- 1 Posts on Twitter are referred to as tweets. Tweets were originally restricted to 140 characters of text, including spaces. As of November 7, 2017 the character limit was increased to 280 (Perez, 2017).
- 2 <https://www.theguardian.com/uk-news/2018/mar/23/leaked-cambridge-analyticas-blueprint-for-trump-victory>.
- 3 Retrieved from @BarackObama on January 22, 2019.
- 4 Retrieved from @realDonaldTrump on January 22, 2019.
- 5 Retrieved from @BarackObama and @realDonaldTrump on January 22, 2019.
- 6 Retrieved from <https://friendorfollow.com/twitter/most-followers/> on January 22, 2019.
- 7 President Obama's tweets were accessed and copied on November, 6, 2018.

- 8 https://natural-language-understanding-demo.ng.bluemix.net/?cm_mc_uid=13981042190215228328675&cm_mc_sid_5020000=20150721549523917601&cm_mc_sid_52640000=49829901549523917607.
- 9 For a full list of the categories hierarchy see <https://console.bluemix.net/docs/services/natural-language-understanding/categories.html#categories-hierarchy>.

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