

A Cultural Exploration of Social Media Manipulators

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Abstract: *Internet social media sites enable the rapid and widespread production and dissemination of propaganda. Although propaganda has a long history in warfare, the spreading of propaganda via social media is markedly different from past distribution methods. The authors investigated the relationships between state-affiliated actors who use social media to produce and distribute propaganda and their national cultural values. The results showed that countries that deployed fake news via social media tended to have more masculine cultural values. These findings suggest that specific cultural values are associated with fake news distribution, which may indicate that culturally aware responses may be more effective in responding to propaganda.*

Keywords: *Propaganda, Cultural Values, Social Media, Hofstede, Trust*

Introduction

The U.S. political events of 2016 brought to the forefront concerns about mass information operation campaigns and their effects, particularly the social and political effects of propaganda. The use of social media to produce and to deliver propaganda represents a new, low-cost, rapid, and more effective mechanism for furthering the persuasive goals of state actors. Lee and Kent (2017) noted that approximately one third of the U.S. population received Russian propaganda on Facebook during the 2016 election cycle. Gottfried and Shearer (2016) found that, in 2016, a majority of U.S. citizens used social media sites as a news source.

Social media sites such as Facebook and Twitter were not initially designed or envisioned as primary news sources. An examination of their mission statements shows these sites were envisioned as communications' enabling forums. The original mission statement for Twitter reads as follows: "To give everyone the power to create and share ideas and information instantly, without barriers" (Fox 2014). Facebook's original mission statement says that "Facebook's mission is to give people the power to share and make the world more open and

connected” (Facebook n.d.). In 2017, Facebook updated its mission statement: to “Give people the power to build community and bring the world closer together” (Facebook 2019). In each of these statements, the mission does not mention news sharing or, for that matter, information or knowledge sharing. However, in retrospect, a communications medium, particularly a synchronous medium, is a tempting target for deceptive data, especially since the target can provide immediate feedback for the purveyor.

The social media environment as a news dissemination paradigm differs from the original news paradigm for print and broadcast, in which control of production and dissemination of news was concentrated to a small group of broadcasters who were granted licenses to operate from their governments. However, social media sites with the ability to ‘like’ and ‘share’ information or stories creates an environment that appears as news, and is now able to spread without controls. This unconventional use of social media sites as primary news sites suggests that the adoption patterns associated with these information-shaping behaviours may differ from the adoption patterns associated with social media usage in general. Sample and Karamanian (2014) observed collectivism, indulgence, and short-term orientation with Facebook adoption rates, whereas Twitter adoption was associated with masculine and indulgent values.

Although social media sites may not have originally been envisioned as news media, the recognition of the value of social media sites (such as Twitter) as news sources grew during and after the Arab spring (Howard & Hussain 2011; Comunello & Anzera 2012). During the Arab Spring, Twitter feeds from affected Middle East countries produced a narrative that countered the official government versions of events (Howard & Hussain 2011; Comunello & Anzera 2012) and that provided accurate images of events that were officially unavailable. At this point in time, perception of social media sites had changed from social conversation platforms to trusted news sources.

In 2017, Bradshaw & Howard compiled a list of countries where active engagement in propaganda via social media spread, as well as the dissemination methods for each country. This list, consisting of 29 countries provides the launching point for this study and analysis. When examining this list of 29 countries in the context of cultural observations of social media usage (see Hofstede, Hofstede & Minkov 2010; Sample & Karamanian 2014), the movement from information seeking to information shaping on social media appears to be a logical next step. This exploratory study was performed with the purpose of determining whether cultural values might be associated with some of the behaviours and trends associated with the use of social media sites for production and creation of propaganda.

Background

Propaganda and deception have a long history in warfare (Shultz 1989; Taylor 2013); however, in the past, the distribution or reach was limited (Crilley 2001) by the media—for example, through person-to-person communication, newspapers and other printed materials, radio, and television. The reach of these sources is now less effective due to speed and cost. More recently, Commin and Filiol (2015) noted the breakdown of the traditional boundaries of war along with a movement away from the model of bending the enemy to one’s will (Chacon 2006) to a different goal of having the victim carry out the attack against themselves (Cybenko, Giani & Thompson 2002). In this new age of hybrid warfare propaganda, a form of deception is a natural weapon for use in perception shaping which is necessary for victims’ self-attack.

An important step in the process of having targeted audiences enact attacker goals relies on whether the message is able to reach the target. In the global virtual environment, much attention is given to the reachability and vulnerabilities of various technologies; however, the reachability and vulnerabilities of the human are equally important (Szfranski 1997; Franke 2015). Some countries have mitigated this vulnerability by controlling the reachability of its citizens (Clayton, Murdoch & Watson 2006; Aryan, Aryan & Halderman 2013), but the directly reachable citizens of many Western democracies remain open to persuasion through propaganda.

Propaganda is information or ideas that are spread by an organised group or government to influence people's opinions, especially by not giving all the facts or by secretly emphasising only one way of looking at the facts ('Propaganda'). Fake news is "false stories that appear to be news spread on the [I]nternet or using other media, usually created to influence political views or as a joke" ('Fake news'). Both definitions have overlapping features, most notably the goal of influencing or persuading and the use of the Internet as a distribution channel. The term 'fake news' has become so common that the 2017 issue of the *Oxford Dictionary of English* identifies the phrase as the word of the year (Meza 2017). The manner in which war is waged in the cyber domain challenges assumptions about cyber space, the entities in cyber space, and the relationship between those entities. Some countries' highly effective deployment of deception techniques through the use of propaganda challenges some traditionally held beliefs, while the sophistication also continues to grow.

There are several aspects to consider when discussing the role of social media in the production and spread of state-sponsored propaganda, and these range from technical to operational to behavioural. This study is focused on the behavioural aspects of propaganda, specifically trust-exploiting behaviours. Some societal values appear to encourage a degree of trust or openness (Hofstede, Hofstede & Minkov 2010). In 2017, specific societal values associated with higher victimisation rates through social engineering were observed, which suggests that some cultures might be more trusting in the online environment than others (Sample *et al.* 2017). If cultural values are associated with a willingness to trust online messages, then these same cultural values may also be associated with the production and dissemination of crafted messaging as a part of social media manipulation in support of propaganda.

Social media manipulation

The use of Facebook and Twitter for purposes not listed in the sites' mission statement illustrate the changing nature of social media sites. Facebook and Twitter have become launching points and prominent spread sites for fake news. Cultural differences have been observed in societal use and interactions with technology (Elmasry, Auter & Peuchaud 2014). This variance appears to be consistent with previous research and observations (Hofstede, Hofstede & Minkov 2010; Sample & Karamanian 2014; Sample, Cowley & Hutchinson 2017; Sample *et al.* 2017), suggesting that national cultural values may be associated with propaganda production, spread, and even the method of dissemination when social media has been deployed.

Members of open societies that have a protected, independent press may be less familiar with media manipulation than those from closed societies with a long history of government-controlled messaging. Combining this background with the changing nature of social media sites as news sharing sites (Gottfried & Shearer 2016), the open-society content readers have no reason to distrust the material that they are receiving. Furthermore, when social media

sites became sources of truthful news, the subscribers could view the sites as credible sources of news stories, even after the quality of the content has changed.

One reason for this unanticipated use of social media for fake news activities may be explained by behavioural traits or cultural values associated with the actors in this arena. The willingness of the target actors to trust both users and computers as sources of information requires a deeper understanding of the nature of online trust relationships. Trusting behaviour entails the individual's surrendering control over valuable outcomes, with the expectation that the other will reciprocate. Furthermore, a shared social group identity is a strong predictor of trusting behaviour between individuals (Tanis & Postmes 2005). With online trust, Friedman, Khan, Jr., and Howe (2000) highlighted that, regarding technology, the term 'trust' is often broadly used to refer to expectations rather than a considered trusting behaviour as described above. They concluded that people trust other people, not technology (Friedman, Khan, Jr & Howe 2000). It has been argued that trust can also be considered in terms of how much risk and uncertainty individuals are willing to accept, including in their interactions with online systems (Jones & Moncur 2018). Context is also significant: people are less trusting of situations involving their financial information as opposed to their other personal information. This disclosure suggests that the potential manipulation of individuals may be easier when finances are not involved. The existence of cognitive heuristics and biases may further influence the degree to which people believe and trust fake news. Exploitation of these processes allows fake news creators to optimise the target and subsequently spread the fake news item. People are likely to deem reliable and trustworthy information that confirms their pre-existing beliefs, which is known as the confirmation bias (Kahneman, Slovic & Tversky 1982). This is a reflection of the use of heuristics in decision making. The term 'heuristics' refers to the use of mental shortcuts individuals employ in order to reduce the cognitive load that would otherwise be required to make complex decisions (Kahneman, Slovic & Tversky 1982). Social media can deliver news at high intensity; it is perhaps only to be expected that, in order to cope with this intensity, individuals are more likely to employ heuristics when judging these news items than when they are using more traditional mediums. Such processes may be actively targeted and exploited by the creators of fake news. For instance the representativeness heuristic (Kahneman, Slovic & Tversky 1982) refers to the tendency to attribute characteristics to something if it matches the preconceived prototype of a category. In the case of a fake news story, this equates to the use of a website design style that mirrors that used by the websites of established print newspapers, in order to convince the reader of the legitimacy of the source. It has been suggested that there is a relationship between cultural values and the use of heuristics. For example, it has been noted that there are difference in the use of the representativeness heuristic between Canadian and Chinese participants (Spina *et al.* 2010).

Once the trust relationship between the reader and the content provider is in place, information shaping and distribution are possible. Considering the competitive nature of masculine societies along with the unrestricted boundaries of hybrid warfare, social media sites that act as news sources are reasonable targets. According to Hofstede, Hofstede & Minkov (2010), competitive, masculine societies will use social media sites for news information seeking as a way to gain a competitive advantage, whereas feminine societies will use social media sites for social information sharing (Sample & Karamanian 2014). The migration of social media sites from information seeking to information shaping represents the next frontier and is now known as the fifth domain of war (Lynn 2010). Lee and Kent (2017) report that Facebook discovered that 120 fake, Russian-backed pages made 80,000 posts that went directly to 29 million Facebook users who 'liked' and 'shared' information

with 126M users (Lee & Kent 2017). Twitter was also used in the same manner (Booth *et al.* 2017).

Another new aspect is the automated distribution channel or the reliance on bots. The use of bots as an automated distribution channel is unique to war in the cyber domain. Considering that bots are a relatively young technology (Stinson & Mitchell 2007), their use can also be considered as a form of technology adoption. Bot usage also represents an example of the 21st-century adaptation to the delivery of the fake news payload that was deemed trustworthy by the recipients that reached a large population. Bots are also capable of quickly gaining the target's trust through the use of artificial intelligence that can model its responses by the inputs that it receives. Thus, the bot that is designed to anger the target will put forth phrases that match the target's values and fears. These programs work by probabilistic predictions and, in some cases, have gone rogue in their responses based on the inputs received (Neff & Nagy 2016). While this study does not address chatbots specifically, the behavioural aspects shaped by both humans and machines are of interest and deserve mention.

Values

Cultural values as defined by Hofstede are composed of six dimensions: Power Distance Index (PDI), Individualism versus Collectivism (IvC), Feminine versus Masculine (FvM), Uncertainty Avoidance (UAI), Long-term versus Short-term orientation (LvS), and Indulgence versus Restraint (IvR). A brief discussion of each of these dimensions follows.

- PDI—This dimension details an authoritarian or egalitarian society's ideals. Power in the high PDI society originates at the top, suggesting that trust relationships may occur among peers or when lower societal members rely on higher members; previous observations noted that senior members provide protection to the junior members of their group (Hofstede, Hofstede & Minkov 2010; Nisbett 2010). In egalitarian societies where “truth is spoken to power” (Hofstede, Hofstede & Minkov 2010), trust may likely be more easily granted across a wider population where the ‘in group’ and ‘out group’ are perceived as being closer in the low PDI societies (Nisbett 2010). In low PDI societies, risks tend to be rewarded (Guess 2004; Hofstede, Hofstede & Minkov 2010). Propaganda emanating from high authoritarian groups should contain a disciplined message that is supported at all levels of society. The spread of fake news within low versus high PDI cultures may also be determined by how secret that information is. This refers to the secrecy heuristic, where there is a tendency to perceive information as being more credible if that information is framed as being something that the individual is not meant to know (Travers, Van Boven & Judd 2014). The revelation of ‘shocking’ information is oftentimes the basis of fake news stories, such as those stories during the 2016 U.S. presidential election claiming that candidate Clinton had suffered a heart attack (Gillin 2017). In high PDI cultures, this secrecy heuristic effect could be enhanced, because there may be a greater assumption that those in power are privy to information that is unknown to the general public.
- IvC—This dimension defines a societal individual's view of self as related to the larger society. Collectivist societies view the individual as an important link in a larger chain (Nisbett 2010). The implication for social media manipulation is that collectivist values might result in greater consistency, whereas individualist societies might exhibit less consistency but greater breadth in the spread mechanisms.

- FvM—This dimension defines the manner in which a society deals with conflict, with masculine societies dealing directly and seeking a solution where winners and losers are present, whereas feminine societies seek to negotiate so that each side wins.
- UAI—This dimension focuses on how a society deals with the unknown. The high UAI society needs assurance in order to accept what is unknown, whereas in the low UAI society curiosity overrules fear. This relates to predictability of the environment. A culture with low UAI may be less likely to pay attention to a fake news story that depicts a deviation from social norms. On the other hand, cultures with high UAI may be especially sensitive to any fake news story that indicates a breach of a social norm, because this in turn suggests greater uncertainty. This is in keeping with psychological research that suggests people are particularly influenced by information that does not match their preconceptions (Hemsley & Marmurek 1982). The high UAI societies may be drawn to shape information with precision and consistency.
- LvS—This dimension defines a societal preference for immediate rewards versus waiting for gratification. This relates to trust as a long-term culture relies upon ongoing, harmonious relationships between individuals if the culture is to survive into the future, meaning that agreement between and trust of others is encouraged (Hofstede, Hofstede & Minkov 2010).
- IvR—This dimension defines how societal members express themselves and ranges from stoic with little to no shows of emotion to large celebrations.

Method

The examination of culture creates challenges due to the existence of unconscious social and cultural biases that everyone possesses (Nosek, Hawkins & Frazier 2011; Fiske & Taylor 2013). Objectivity, although difficult to attain, is still a primary goal; thus, quantitative analysis has advantages. Furthermore, observation of behaviour in a natural setting is difficult. In this particular case, the observable data were collected and analysed for a different study; the researchers for this study re-used the collected data to determine whether common cultural values can be observed. The research questions used are listed below.

- **R1: Use of Social Media by Propaganda Purveyors**
Do the purveyors of propaganda who use social media sites differ culturally from those who do not? Evaluation of results relies on using the full set of countries that Hofstede defined, and dividing the countries into two groups: those who use social media sites to deliver propaganda and the remaining countries from the Hofstede pool of countries. The two groups will be compared to determine how similar or dissimilar they are in terms of distributions using the Mann-Whitney-Wilcoxon (MWW) test (Hollander, Wolfe & Chicken 2013). The researchers are testing against the null hypothesis that states H_0 : There are no differences in the distribution cultural values among the purveyors and the non-purveyors. Thus, H_1 represents the alternative hypothesis that must be considered if $p \leq 0.01$, after adjusting for multiple comparisons using a Bonferroni adjustment ($\alpha/\text{comparisons} = 0.05/5 \text{ comparisons}$) (Hollander, Wolfe & Chicken 2013).
- **R2: Cultural Values over a period of time for Countries with Social Media Propaganda Purveyors and without**

Are there any cultural value trends that can be observed on the social media site propaganda purveyors? The second research question can be answered by evaluating the median values of purveyor over the seven-year time interval. The median values for each year will be paired with the year, and a Spearman correlation will be run (Hollander, Wolfe & Chicken 2013). **H₂**: There are no associations between the cultural values and social media propaganda distributors vs. non-distributors. **H₃**: represents the alternative hypothesis that must be considered, an inferred relationship between cultural values and propaganda distributors who use social media.

- **R3: Cultural Values and Methods for Social Media Propaganda Delivery**

Do any cultural values associate with the method of propaganda delivery? For this set

1.1.1 Hofstede Cultural Values								Social Media Methods
Country	PDI	IvC	FvM	UAI	LvS	IvR	Years	
1	49	46	56	86	20	62	5	A
2	36	90	61	51	21	71	4	A
3	69	38	49	76	44	59	7	B
4	80	20	66	30	87	24	6	H
5	57	58	57	74	70	29	0+	Unlisted
6	78	8	63	67	N/A	N/A	3	B
7	35	67	66	65	83	40	1	A
8	77	48	56	40	51	26	4	Unlisted
9	58	41	43	59	14	40	5	A
10	13	54	47	81	38	N/A	4	Unlisted
11	81	30	69	82	24	97	0+	B
12	94	32	64	44	27	42	1	A
13	68	60	64	93	38	29	2	H
14	93	39	36	95	81	20	5	B
15	95	25	60	80	36	52	4	A
16	86	25	43	92	52	28	0+	H
17	60	18	39	85	100	29	4	B
18	80	35	52	60	30	N/A	6	A
19	58	17	45	69	93	49	7	B
20	66	37	45	85	49	49	4	B
21	35	89	66	35	51	69	3	H
22	40	91	62	46	26	68	6	B
23	81	12	73	76	16	100	2	B
24	70	20	40	30	57	35	4	H
<i>Manipulators (median)</i>	68	37	57	74	41	45.5	N/A	N/A
<i>Control group (median)</i>	69	30	42.5	60	35	47	N/A	N/A
<i>HOFSTEDE</i>	68	30	46	64	38	47	N/A	N/A

Table 1: List of countries that use social media to spread propaganda

of data, the groups are small so that the standard tests of MWW and Spearman are not appropriate (Hollander, Wolfe & Chicken 2013). The median values are descriptively examined and compared against the overall Hofstede median values, and significant differences (greater than 10) will be discussed along with the importance of the result.

Of the 29 countries listed in the Bradshaw and Howard (2017) study, 24 of the countries were found in Hofstede’s data (Hofstede n.d.); countries that were not found in Hofstede’s data were excluded. In some cases, the social media methods were not identified, in which case those countries were excluded in the methods portion of the study (R3), but they are included in the processing for R1 and R2. **Table 1**, below, provides the listing of countries, their Hofstede cultural values, the number of years in the Bradshaw and Howard (2017) study, and the methods (A for automated, H for human, and B for both human and automated) used to disseminate propaganda. Since the focus of this study is on cultural values, the country names are not listed, but the reader can determine the country names through examination of the cultural values provided by Hofstede (n.d.). The data used in this study can be found at <https://sites.google.com/site/cyberbehaviors/study-data>.

The hypotheses tested are broken down into six sub-hypotheses for each dimension. Evaluation of the overall findings relies on ‘or’ processing of a truth table. A single positive or ‘1’ entry in the truth table is sufficient to accept the alternative hypothesis.

Results

The results of the MWW test used to evaluate R1: H_0 , H_1 can be viewed in **Table 2**; below; the main finding is shown graphically in **Figure 1**, below; and the corresponding truth table results are shown below in **Table 3**. Significant findings are shown in **bold**, and interesting findings are shown in *italics*. **Tables 4** and **5**, also below, contain the findings related to R2: H_2 , H_3 . **Table 6** contains the findings for median value analysis to address R3. This section simply lists the results and interpretation; further analysis can be found in the discussion section, which follows.

Dimension	PDI	IvC	FvM	UAI	LvS	IvR
p-value	0.7944	0.4515	0.0078**	0.4978	0.235	0.940

Table 2. R1: Social media methods and Hofstede cultural values

* $p < 0.05$: Conventional significance level, not corrected for multiple comparisons.

** $p \leq 0.01$: Conventional level for statistical significance after adjusting for multiple comparisons.

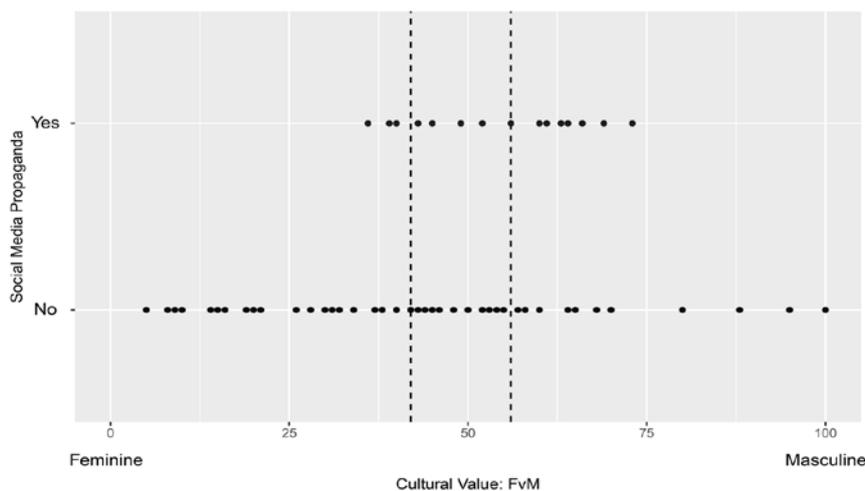


Figure 1: The x-axis depicts the feminine (0) to masculine (100) cultural value. The y-axis shows whether or not the country was a purveyor of social media propaganda (*Yes* is >50 ; *No* is <50). The dotted lines indicate the median values.

Dimension	PDI	IvC	FvM	UAI	LvS	IvR
T/F	0	0	1	0	0	0

Table 3: Truth table evaluation for H₀, H₁

Dimension	PDI	IvC	FvM	UAI	LvS	IvR
r	0.333	0.142	0.5714**	0.3333	-0.119	0.071

Table 4: Trended median values H₂, H₃

Dimension	PDI	IvC	FvM	UAI	LvS	IvR
T/F	1+	0	1+	1+	0	0

Table 5: Truth table evaluation for H₂, H₃

Dimension/Delivery	PDI	IvC	FvM	UAI	LvS	IvR
Automated	58	41	60	60	27	47
Human	70	25	64	35	52	29
Both	73.5	24	47	79	49	49
HOFSTEDE	68	30	46	64	38	47

Table 6: Median values for delivery method groups

Discussion

Findings for each of the research questions provided evidence that implied a relationship between cultural values and the use of social media to disseminate propaganda. Masculine values were observed in response to each of the research questions. This finding suggests that, in addition to using social media for information seeking, masculine values may play a role in the use of social media for information shaping. A breakdown of the findings for each research question follows.

R1 involved examination of the propaganda purveyors who used social media. The difference between the disseminators and the non-disseminators in FvM dimension is similar to the observation of social engineering attackers by Sample *et al.* (2017), where self-identified attackers who deployed social engineering as an attack vector tended as a group to nationally possess masculine values compared to the non-attackers. This result suggests two things: first, that for attackers from countries that possess masculine cultural values, data may be considered as a tool that can be weaponised; and, second, that truthful data might be less valued in these competitive, aggressive societies than in societies with nurturing values. This may be because fake news stories often purport to provide information that is somehow unexpected or secret, and thus this information appears to offer the individual a competitive advantage, which involves the concept that knowledge is power. Another finding of interest in the data was the difference between the UAI values. Although not statistically significant, this result again supports the findings of the aforementioned study (Sample *et al.* 2017) in which the social engineering attackers were found to have significantly higher UAI values than their non-attacking counterparts. With regard to fake news, this could suggest that individuals are more likely to trust fake news sources, as to do so avoids uncertainty and lowers the perception of risk. In high UAI societies, propaganda may represent an additional method to assure mission success.

R2 involved examining the median values of the countries that use social media to disseminate propaganda over time. The trend line for masculine values over the 7-year period shows an increase.

These two dimensions are singled out for two reasons: 1) the high FvM associates with information seeking and suggests that information shaping may also be a behaviour to

associate with this dimension; and 2) the masculine trend, while significant, is not overtly masculine; rather the results are centred with a gradual increase reflecting an increasingly masculine trend. This finding suggests that, over time, these same countries that have historically exhibited information-seeking behaviours (Hofstede, Hofstede & Minkov 2010) are also increasingly information shaping. Sample and Karamanian (2014) noted the masculine tendency toward information dissemination with masculine countries' adoption rates with Twitter usage. However, the movement into information shaping that appears, particularly with the use of Facebook, also reflects the evolution of the social media site.

The PDI value increase is relevant because successful propaganda requires consistency and repetition (Gambrill 2010), behaviours that can be more easily supported in a high PDI society where orders are passed down from leadership (Hofstede, Hofstede & Minkov 2010). In the low PDI countries, where messages emanate from multiple sources, the content is more likely to vary due to individual preferences, which results in message variation. Nonetheless, some message variation may be acceptable in order to make the message appear authentic and the spread appear organic. The core message must be consistent, and this consistency fits well in a society where permission for all actions is strongly controlled.

Conclusion

The Bradshaw and Howard (2017) report provided an inventory of state-sponsored propaganda producers and distributors that used social media to further their goals. Since propaganda is designed for cognitive hacking, the attackers' and targets' values and beliefs should be understood. These values and beliefs may provide the insights necessary to make the message believable or trustworthy to the intended recipient.

One aspect this study did not address is increasing the effectiveness of propaganda using psychological targeting. Matz *et al.* (2017) found that ads tailored to psychological traits, inferred personality characteristics using digital footprints from Facebook and other social media platforms, produced substantially more clicks and purchases than non-targeted ads. Others have disputed this finding as confounded due to targeted ads being higher in quality and more creative than non-targeted ads (Sharp, Danenberg & Bellman 2018). Another critique was that the targeting was confounded due to ad optimisation, since users were non-randomly assigned to the ad types (Eckles, Gordon & Johnson 2018). Nevertheless, the capabilities for targeting specific users and groups of users will only improve, and tailored propaganda may be more effective than mass messaging. Unlike propaganda in the physical world, with social media there is minimal cost and time for tailoring messages and maximising the effectiveness of the digital propaganda using experiments.

In the physical world, cultural values factor into believability and authenticity (Minkov 2013); therefore, cultural values should similarly impact the evaluation of messages in the virtual world. A central goal of propaganda is to persuade the target. Thus, the message sent in support of propaganda must resonate with the intended recipient's cultural values.

Once propaganda has been successfully identified, effective countermeasures should be deployed. Although psychologically countering recipients of misinformation is challenging, there are evidence-based recommendations for doing so (decrease the number of arguments supporting the misinformation, create scrutiny and counter-arguments, and provide detailed corrections to misinformation) (Chan *et al.* 2017). Another approach is to carefully construct countermeasures to manipulate the purveyors. These responses will require an understanding of online trust relationships and purveyors' values (cultural and psychological) in order to be

effective. This study contributes to the overall process by focusing on the cultural values of countries that produce and disseminate propaganda. The cultural dimensions that were identified suggest that a direct response will be needed, but the response will likely require detailed, consistent, inconspicuous, and culturally tailored responses.

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