Exploring the Utility of Memes for U.S. Government Influence Campaigns

Vera Zakem, Megan K. McBride, Kate Hammerberg

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Abstract

The term *meme* was coined in 1976 by Richard Dawkins to explore the ways in which ideas spread between people. With the introduction of the internet, the term has evolved to refer to culturally resonant material—a funny picture, an amusing video, a rallying hashtag—spread online, primarily via social media. This CNA self-initiated exploratory study examines memes and the role that memetic engagement can play in U.S. government (USG) influence campaigns. We define *meme* as “a culturally resonant item easily shared or spread online,” and develop an epidemiological model of inoculate / infect / treat to classify and analyze ways in which memes have been effectively used in the online information environment. Further, drawing from our discussions with subject matter experts, we make preliminary observations and identify areas for future research on the ways that memes and memetic engagement may be used as part of USG influence campaigns.
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Executive Summary

If you've spent any time online, you have probably encountered a meme. There are thousands of memes in circulation (with new ones being created regularly) on a variety of social media websites. The figure below represents one of the more popular memes, a riff on a scene from Peter Jackson's *Lord of the Rings* trilogy.

![Meme Image]


While images like the one above are popularly known today as “memes,” a closer look at the concept reveals a nuanced and complex set of ideas worthy of further inquiry. The very concept of the term remains contested, and has evolved considerably since first introduced in 1976, but for the purposes of this report we define meme as a culturally resonant item easily shared or spread online.

While individual internet users have been using memes online for years, more recently there have been suggestions that memes might also have utility for the U.S. government (USG) as part of its information and influence campaigns to counter state actors such as Russia and non-state actors such as the Islamic State. However, the state of research on both memes and this type of activity—which we are referring to as memetic engagement—remains nascent.

To help address this, CNA initiated an exploratory study of the applicability, utility, and role of memes and memetic engagement within USG influence campaigns. The purpose of this study is to further the conversation on memetic engagement within the
USG influence community, as it considers novel approaches to countering state and non-state actors in the online information environment.

To do this, CNA reviewed the literature on the history of memes, memetic engagement, and so-called “memetic warfare,” along with psychology and marketing literature that explores the role of virality and persuasion in changing people’s attitudes and behaviors. Upon completion of the literature review, we conducted semi-structured conversations with multiple subject matter experts (SMEs) to better understand memes and memetic engagement. We used these insights, along with a selection of specific past examples, to develop an epidemiological framework to explore memetic engagement. Drawing on this literature, semi-structured conversations, and analysis of the meme examples, we developed a set of preliminary observations and concluding thoughts on the applicability of memes to influence campaigns and areas for further research.

**Construct for analyzing memes**

Borrowing from epidemiological models, we have identified three ways in which memes may be situated intentionally within information and influence campaigns: *to inoculate*, *to infect*, and *to treat*. We took this approach for two reasons: (1) in an effort to retain the original concept of memes by Richard Dawkins as a pseudo-biological concept; and (2) in order to reflect the epidemiological models applied to the study of radicalization and terrorism. The table below provides an overview of this construct.

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<thead>
<tr>
<th></th>
<th>Inoculate</th>
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<td>Transmit messages in support of USG interests</td>
<td>Contain the effect of adversary messaging</td>
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<td><strong>Distribution</strong></td>
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<td><strong>Message Disposition</strong></td>
<td>Adversary</td>
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<td>Adversary</td>
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To illustrate the application of this framework, we include a set of 14 examples that show how visual memes have been intentionally used to *inoculate*, *infect*, or *treat* information in an influence campaign. While our data set is not exhaustive, this approach: describes and summarizes effective memetic campaigns; identifies approaches to memetic engagement that might be replicated or imitated; and engages with a wide variety of campaigns and actors.
The figure below highlights one example of what we would describe as effective memetic engagement. A pro-Russia media outlet falsely claimed that U.S. ambassador John Tefft had attended an opposition rally in Moscow, and supported this claim with a photograph of Tefft in attendance (see the figure below, left image). The U.S. embassy in Russia responded via memetic engagement—effectively *treating* the Russian attempt to *infect*—by turning Tefft’s image into a meme. Specifically, the U.S. embassy identified the original source of the image, explicitly labeled it as fake news, and used Photoshop to create their own images of Tefft in a variety of locations (see the figure below, right image).

Figure. Example of U.S. Embassy memetic engagement in response to Russian disinformation regarding U.S. Ambassador Tefft

Observations from examples of memetic engagement

Looking across our data set of meme examples, we can draw a number of preliminary observations:

- **The effective use of visual memes is not limited to counter-radicalization efforts.** While memes certainly have utility in that area, they have also been deployed productively in response to terrorism more generally, to disinformation campaigns, and to government censorship.

- **The range of visual memes being deployed in memetic campaigns is far-reaching.** In some instances, the format is the familiar one of combining a well-known picture with words following an established grammar. Other
examples include doctoring situationally relevant images, creating brand new images with distinct messaging, and pairing images with common cultural references.

- Visual memes often (though not always) use humor, irony, and sarcasm in order to resonate emotionally.

- Visual memes often transcend individual cultures and languages, and can reach broad communities of disparate actors in the online information environment.

- Well-targeted visual memes are culturally specific and situationally narrow. This may seem to be a direct contradiction of the previous observation, but it is important to acknowledge that while memes may be understood across wide swaths of humanity, they will likely be particularly meaningful within specific cultures, languages, and situations.

- Visual memes are utilized by all manner of online actors—governments, non-governmental organizations (NGOs), non-state actors, and individuals.

- Visual memes have been used effectively at the tactical level (e.g., combating local government censorship) and the strategic level (e.g., against North Korean missile tests).

Observations from discussions with SMEs

In examining the roles of memes and memetic engagement, we conducted semi-structured conversations with members of the USG influence community, as well as academic and private sector experts and practitioners in marketing, advertising, and psychology (to include a professional internet troll). Based on these conversations, we make several observations regarding the potential applicability of memes to influence campaigns. First, using memes effectively as part of such campaigns is neither predictable nor formulaic—significant cultural, contextual, and experiential knowledge is required, as is granular understanding of the intended audience. Second, contrary to popular belief, virality of a meme is not necessarily correlated with its persuasive power, and changes in people's attitudes do not necessarily correlate to changes in their behavior. As a result, while memes can be useful across the range of USG influence activities, they are likely to have the most effect when used as a complementary part of a broader campaign that includes other approaches to influence (e.g., diplomatic and face-to-face engagement). The figure below illustrates how memetic engagement fits within broader engagement activities.
Figure. How memes and memetic engagements fit into influence campaigns

In conclusion, we find that memes do have significant potential for enhancing USG influence campaigns but that additional research on memetic engagement can provide a better understanding of how to employ them most effectively. We suggest the following topics for additional research:

- What constitutes an effective memetic engagement? What type of visual, digital, and cultural information might one need to create an effective memetic engagement? How would this differ from the information needed to inform a traditional USG influence campaign?

- What can an effective memetic campaign accomplish? What makes a campaign effective? How can we assess and evaluate the use of memes?

- Who are the appropriate USG entities to lead the creation, dissemination, and evaluation of the use of memes?

- How much utility do memes have in shaping operations, in competition short of armed conflict, in irregular warfare, and in major combat operations? How and why might their utility and usage need to change across these activities?

We believe that visual memes and memetic engagement are tools with great potential for the USG as it looks to counter the information activities of state and non-state actors and more proactively engage audiences online. But we also believe that considerable additional research should be undertaken in order to ensure that the USG is maximally effective in the use of these tools.
Figure. Morpheus on the report following this executive summary

WHAT IF I TOLD YOU

THIS IS JUST THE BEGINNING
OF THE REPORT?

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# Glossary

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<td>Central Intelligence Agency</td>
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<td>DOS</td>
<td>Department of State</td>
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<tr>
<td>FBI</td>
<td>Federal Bureau of Investigations</td>
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<td>GIF</td>
<td>Graphics Interchange Format</td>
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<td>IC</td>
<td>Intelligence Community</td>
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<td>ISIS</td>
<td>Islamic State of Iraq and Syria</td>
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<td>NU</td>
<td>Nahdlatul Ulama</td>
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<tr>
<td>SME</td>
<td>Subject Matter Expert</td>
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<tr>
<td>USG</td>
<td>United States Government</td>
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<tr>
<td>VORTEX</td>
<td>Vienna Observatory for Applied Research on Radicalism and Extremism</td>
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Introduction

If you have been online in the past year—if you have connected to the internet via a desktop, laptop, tablet, or smartphone; if you have been on Facebook, Twitter, Tumblr, Instagram, or any social media platform; or if you have an email account and know someone inclined to pass along funny forwards—then you have almost certainly seen a meme. There are thousands in circulation (the website Know Your Meme lists over 4,000 “confirmed meme entries”), and new ones are being created weekly.¹ Some have been around for nearly a decade, while others have been around for a matter of days; some have broad appeal and can be found in relatively mainstream online communities, while others are relatively niche and might circulate only within closed online communities. One particularly popular example is that of Success Kid, depicted in Figure 1 and discussed in detail later in this report.

Figure 1. Success Kid on Memes

While these images are popularly known as “memes,” a closer look at the concept reveals a nuanced, contested, and complex set of ideas worthy of further inquiry. The term has multiple active definitions; it has been invoked for decades by analysts exploring its utility to the civilian and governmental influence communities; and it has been mentioned recently in the context of online radicalization campaigns by the Islamic State of Iraq and Syria (ISIS) and Russia’s disinformation activities. In short, the very concept of *meme* remains contested and yet there is an increasingly long list of reasons compelling us to turn our attention to the role of memes in shaping public discourse, to the capacity of memes to affect individual attitudes and behaviors, and to the utility of memes as part of influence campaigns—which we are referring to as memetic engagement.

In light of these trends, CNA initiated an exploratory study on the applicability, utility, role, and value of memes and memetic engagement in USG influence campaigns. Our hope is that this study will further the conversation on memetic engagement within the U.S. government (USG) influence community, including policymakers and military leaders, as they explore novel and innovative approaches to develop and employ strategies to counter state and non-state actors in the online information environment.

Specifically, this study addresses the following questions:

- What are memes? What is the history of memes?
- How and why do memes affect individual and organizational attitudes and behaviors? How and why do concepts such as virality and persuasion relate to communication via memes (i.e., “memetic communication”)?
- Can memes and memetic engagement be useful in USG influence campaigns to counter state and non-state actors? Does memetic engagement fit into USG influence campaigns across the spectrum of conflict and range of activities?
- What type of framework can be used to design effective memetic engagement?

**Research approach**

This study was conducted in five steps:

1. We conducted a comprehensive literature review on the background and history of memes, memetic engagement, and memetic warfare, starting from the first articulation of the idea in 1976 and moving to the present. We used
this literature review to develop themes and insights that served as a foundation for the study.

2. We reviewed psychology and marketing literature to gain insights on whether memetic virality could be linked to changes in attitudes and behaviors, and whether memetic communication was well suited to the work of persuasion.

3. We conducted semi-structured conversations with subject matter experts (SMEs) across the influence community—to include the U.S. Departments of Defense and State (DOD and DOS, respectively), the intelligence community (IC), academia, marketing, and advertising—to further extrapolate, assess, and validate our preliminary insights on memes and memetic engagement, virality and persuasion, and the applicability and utility of memes and memetic engagement in USG influence campaigns.

4. We used these insights along with a set of epidemiological models to develop a framework to explore memetic engagement through a series of examples. Our framework classifies these examples into three categories: inoculate, infect, and treat. While additional models exist that explore memetic and online engagement, including the concept of memetic warfare as discussed in the appendix, our exploratory research suggests that epidemiological models prove a sound way to explore the utility of memes in influence campaigns.

5. Drawing on the literature review, semi-structured conversations, and analysis of these cases, we developed a set of preliminary observations from our interviews with subject matter experts, along with concluding thoughts on the applicability of memes to influence campaigns and ideas for further research.

**Organization**

This report is structured into six sections. First, we explore the concept of memes—examining original, current, and popular usages; offering our own definition of meme; and analyzing the relatively modest existing literature on the operationalization of memes. Second, we explore why memes are a useful tool for influence campaigns. Third, we present our concept for operationalizing memes through the epidemiological framework of inoculate, infect, and treat as depicted through select examples. Fifth, we offer preliminary observations from subject matter experts on memetic engagement. Sixth, we conclude with thoughts on the applicability of memes to influence campaigns and ideas for future research.
What are Memes?

Early definitions and theories

In 1976, evolutionary biologist Richard Dawkins suggested that ideas could be transmitted between people in much the same way that physical characteristics are transmitted between people. In this model, *memes*—small bits of cultural information, to include slogans, stories, fairytales, songs, jokes, beliefs, concepts, and worldviews—are transferred between people via interpersonal and social interactions. Importantly, Dawkins’ model of idea transmission (i.e., memetic transmission) suggested that the persistence and spread of individual memes was the product of an evolutionary process. He asserted that memes are self-replicating in that the popularity or success of a meme ensures that it will be passed on in a process that sometimes involves evolution and mutation: “If a scientist hears, or reads about, a good idea, he passes it on to his colleagues and students. He mentions it in his articles and lectures. If the idea catches on, it can be said to propagate itself, spreading from brain to brain.”2 Additionally, he argued that memes are subject to copying error, variation, and mutation. In other words, memetic transmission involves some of the core components of Darwin’s evolutionary process: variation, replication, and natural selection.

Since Dawkins’ groundbreaking coining of the term, the concept of *meme* has evolved considerably. Early work began with the idea that a meme was a bit of cultural information that could be passed “from brain to brain,” and the concept was used to explore how knowledge might be transmitted between individuals.3 The discipline of memetics, which took shape in the mid-1980s, built directly on Dawkins’ work to explore the idea that evolutionary models explained cultural information transfer between people and through generations. While some work on this topic emphasized that memes were passed via human imitation (and Dawkins’ original definition emphasized this point), other scholarship posited that the transmission of ideas could be best understood via an epidemiological model that

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3 Ibid.
foregrounded contagion. In this line of thinking, ideas could essentially “infect” individuals and societies in the same way that viruses infect a host. In short, two models took shape: one in which memes were passed via the act of human imitation, and one in which memes spread through a population as a contagion.4

More interesting than the imitation/contagion debate was work that focused on what made a specific meme successful. In other words, in an evolutionary environment shaped by natural selection ensuring the survival of the fittest, it was important to identify what made a meme fit. Different models were offered, but the same core themes emerged in each. One researcher argued, for example, that a successful meme went through four stages: assimilation, retention, expression, and transmission. In other words, a successful meme is:

- Assimilated: a person needs to notice the meme, understand the meme, and internalize the meme.
- Retained: a person needs to remember the meme (a process that is influenced by “the uniqueness of the meme, frequency of presentation, authority of the source, how easy it is to express, consistency with norms of a culture, and its usefulness to an individual”).
- Expressed/Transmitted: a person needs to publicly express the meme so that it can be transmitted to another person.5

This early approach to meme fitness focused on the factors related to transmission of knowledge. Later research shifted the focus by exploring the work in cognitive psychology and information processing theory to ask “how [memes] leave lasting footprints.” One article concluded that meme fitness could be explained in terms of four criteria: “(1) In terms of a meme’s compatibility with the brain’s hardwiring (2)

4 Additional work explored the role that memes played in human evolution, suggesting that a robust theory of memetic replication might account for human brain size or serve as an explanation for the development of human language. In this more aggressive framework, memes might be more important than genes: “Successful memes would begin dictating which genes would be most successful. The memes take hold of the leash.” This theory is, however, neither prominent nor widely accepted. For an outline of this argument, and a series of counterarguments, see Susan Blackmore, “The Power of Memes,” Scientific American 283, no. 4 (October 2000): 64-73.


By the ease with which the meme can be replicated… (3) By a meme's ability to provide for or meet the needs of the people it encounters… (4) By an accidental or involuntary lodging of a meme or a part of a meme in the neural network.”

Modern interpretations

Little is published these days on the traditional understanding of memetics described above, and the term has evolved to such a degree that the mention of *meme* no longer brings to mind the work of Dawkins. Instead, the term has seen something of a rebirth in the age of the internet and, as Merriam-Webster notes, a meme is now popularly defined as “an amusing or interesting item or genre of items that is spread widely online especially through social media.” As Dawkins himself noted in 2013:

> The very idea of the meme, has itself mutated and evolved in a new direction. An internet meme is a hijacking of the original idea. Instead of mutating by random chance, before spreading by a form of Darwinian selection, internet memes are altered deliberately by human creativity. In the hijacked version, mutations are designed—not random—with the full knowledge of the person doing the mutating.8

Today the concept of *meme* is broadly understood to mean one of two things. In some instances, it might refer to a piece of cultural information that is shared or spread online: an image, video, hashtag, a Graphics Interchange Format (GIF) image, or textual statement. An early example would be Dancing Baby (1996), as shown in Figure 2.

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Figure 2. Dancing Baby meme


More recent, but similarly popular examples, include those shown in Figure 3.

Figure 3. Some popular modern memes

Note: Keyboard Cat (top left, 2007); Charlie Bit My Finger (top right, 2007), Kanye Interrupts (bottom left, 2009), Make A Wish’s #SFBatkid (bottom right, 2013).


In other instances, and more commonly, the word *meme* doesn’t refer to a “simple stand-alone artifact [but to] a full-fledged genre...with its own set of rules and
conventions.” In these cases, the meme—typically an image accompanied by text of some sort—develops its own grammar as it spreads: the image/meme conveys a specific message, and informal rules dictate what words/quotes can be meaningfully superimposed on the image. Such memes constitute a “shared cultural language” that often transcends the internet, ensuring that broad parts of the general population understand what is being communicated.10 Examples of this type of meme abound and include those shown in Figure 4.

Figure 4. Memes combining images and text

Note: Grumpy Cat (left), Philosoraptor (center), The Most Interesting Man in the World (right).

Critically, in each instance the core image is replicated by individuals who customize it to communicate distinct messages. Thus, these memes are not merely viral images shared online. They are, instead, a type of communication. These image-based expressions are persistent, in part due to the participatory nature of their construction.11 A meme, in other words, has an organic lifestyle that approximately follows the progression described below.

First, a single image is posted online. In the case of the Success Kid meme, the original was a 2007 photo of 11-month-old Sammy Griner, as shown in Figure 5:

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Figure 5. Success Kid, original

![Success Kid, original](image)


The image is then modified—in this instance, Sammy was photo-shopped onto a purple background, as shown in Figure 6.

Figure 6. Success Kid template

![Success Kid template](image)


Finally, the meme was replicated extensively by a community that organically agreed upon a basic syntax, as shown in Figure 7.
In both contemporary cases—whether meme refers broadly to a piece of cultural information shared online, or narrowly to a specific image with accompanying text—the meme is culturally relevant, broadly resonant, organically developed, and voluntarily spread. These memes are, returning to the language of Dawkins, bits of cultural information that survive via replication, mutation, and natural selection. Thus, despite the significant shift away from early models and the language of Dawkins (i.e., models suggesting that memes mutated randomly), many of the core ideas developed by early thinkers remain relevant (i.e., questions about meme fitness and selection are still important). What makes these contemporary memes unique is simply that this process is intentional and purposeful, and that the memes themselves exist primarily in a virtual world.

Importantly, work on memes has consistently been somewhat controversial and contested. It has evolved considerably, from being articulated in models that foreground imitation, and in models that focus on contagion; to being applied to human biological evolution, and to the spread of information; to referencing all types of cultural information, and a narrow subset that appears online. And at times it has been taken up by thinkers that exist at the fringes of reputable science. One relatively recent article acknowledged this messy history quite clearly:

Memetics, the study of meme theory and application, is a kind of grab bag of concepts and disciplines. It's part biology and neuroscience, part evolutionary psychology, part old fashioned propaganda, and
part marketing campaign driven by the same thinking that goes into figuring out what makes a banner ad clickable. Though memetics currently exists somewhere between science, science fiction, and social science, some enthusiasts present it as a kind of hidden code that can be used to reprogram not only individual behaviors but entire societies.\textsuperscript{12}

As this article notes, the question of how a meme functions—or what conceptual or practical value might come from the study of these processes—is not yet settled. Memes are, however, unquestionably ubiquitous and it thus seems clear that a robust engagement with the concept is critical. Understanding the history of the term informs this process, but the messy nature of the literature on memes makes it particularly important to accurately define and situate the concept.

**Defining a meme**

For the purpose of this exploratory study, we have adopted the following functional definition:

*A meme is a culturally resonant item easily shared or spread online.*

Of note, this definition is not exclusively visual, as memes can (and do) consist of non-visual items (e.g., a hashtag campaign). However, in the remainder of this paper we will focus on visual memes.\textsuperscript{13} The decision to do this was motivated primarily by available resources. Defined most inclusively a meme is an idea, but an analysis of how ideas are important for influence campaigns was clearly too broad in scope. Additionally, we recognize that currently the term *meme* brings to mind funny images spread online (e.g., Grumpy Cat, Success Kid). This, combined with the shift (discussed in more detail below) to increasingly visual communication online, led us to focus our attention on the use of visual memes.

The reality that memes are ubiquitous does not, however, necessarily mean that they are an effective vehicle via which to engage in influence campaigns. As a result, it is necessary to consider both whether and how memes might be an important addition to activities and programs already underway. We do this in the sections that follow.


\textsuperscript{13} We are not, in other words, focused on memes that are textual (hashtags, slogans, etc.), musical (jingles, theme songs, pop hits, etc.), narrative (fairy tales, urban legends, etc.), and the like.
Why Visual Memes are Useful Tools for Influence

Across the fields of psychology, behavioral sciences, philosophy, and marketing, the literature agrees that images offer some advantages over text. These advantages—particularly those with respect to brevity and stickiness—make visual memes especially well-suited for influence campaigns. One advantage that memes have in influence campaigns is that they consist of perceptual information. In other words, they communicate information beyond the composition of the image itself. This intuited, or connotatively conveyed, information means that images take less time to consume than text and allow us to communicate complex concepts quickly.14

Further, advertising, marketing, and psychological research suggest that visual cues take advantage of heuristics, which enable our brains to retrieve information related to images more quickly than information related to text. Indeed, neurocognitive research confirms that the human brain is predominately an image processor whose sensory cortex is far larger than its word processing centers.15 This reliance on heuristics is particularly acute for information presented online: technology increases reliance on heuristics, which reduces the likelihood that consumers will think deeply.16 As a result, a rational discussion of an issue (e.g., an article exploring corruption in the upper tiers of the Islamic State) will be less effective than a visual campaign (e.g., a memetic engagement discrediting the group).

Finally, images tend to be emotionally evocative. In the visual domain, research has shown that emotional cues (both offensive and appetitive) are preferentially


16 Semi-Structured Discussion with Fellow, Social Innovation Lab, Stanford University, January 10, 2018.
processed in the brain. Interestingly, research suggests that emotion can be elicited subliminally, suggesting that we do not need to be aware of why we feel a certain way for our attitudes and behaviors to be affected. The stickiness of emotionally evocative information and the effectiveness that images produce in eliciting these emotional responses creates a message efficacy that textual means of communication lack. In combination, research exploring these ideas suggests that visual memes are particularly strong vehicles for communication.

While this behavioral science work is compelling, so is marketing research, which suggests that a failure to engage memetically effectively cedes a massive communications forum to those who are doing this work (e.g., state actors, non-state actors, citizens, etc.). To begin, the visual online arena is growing rapidly. A recent article in a marketing magazine suggests that over 80 percent of communications will soon be visual, and that visual content has overtaken textual content in terms of consumer engagement. Additionally, a marketing website notes that readers engage with relevant infographics more than with the surrounding text (i.e., choosing the easily processed over the cognitively demanding).

The same site also notes that images are liked and shared three times more frequently than other types of online content; that images radically increase the likelihood that someone will accurately follow instructions (people perform over 300 percent better with accompanying images); and that images significantly improve information retention (information paired with an image was retained for longer than information presented alone). Data analysis also suggests that in some instances visual content has meaningfully influenced behavior as people were more likely to


21 Ibid.
purchase a product if the advertisement was a video. In other words, online visual engagement is growing, and increasingly sophisticated tools and metrics for engaging in this forum now exist. Thus, it appears that there are considerable reasons for further exploration of the use of memes as part of influence campaigns.

In the next section, we will present a number of specific examples of the use of visual memes for various influence purposes.

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Examples of Visual Memes and Observations on their Use for Influence

Borrowing from epidemiological models, we have identified three ways in which memes may be situated intentionally within information and influence campaigns: to inoculate, to infect, and to treat. We have adopted this model for two reasons: first and foremost, we felt that applying an epidemiological model was in keeping with the original understanding of memes, as defined by Richard Dawkins, as a pseudo-biological concept; and second, this model is adapted from the existing body of literature related to radicalization and terrorism wherein epidemiological models have been applied in a number of studies to the transmission of radical and extremist narratives. In light of this study’s limited scope, we synthesized and distilled the existing literature’s concepts into inoculate, infect, and treat categories. Table 1 below provides a brief overview of this construct.

Table 1. Overview of the “inoculate, infect, treat” construct

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<td>Distribution</td>
<td>Preventative</td>
<td>Offensive</td>
<td>Defensive</td>
</tr>
<tr>
<td></td>
<td>Anticipatory</td>
<td>Stand Alone Effort</td>
<td>Reactive</td>
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<tr>
<td>Message Disposition</td>
<td>Adversary</td>
<td>USG</td>
<td>Adversary</td>
</tr>
</tbody>
</table>

*Primary sources used to develop this concept below; additional sources in references section*  

To highlight and illustrate the application of this framework, we include a set of examples below that show how visual memes have been used to inoculate, infect, or treat information in an influence campaign. These examples were identified as effective in part via an application of the concept of meme fitness (discussed above): they were assimilated (i.e., they were noticed and understood); they were retained (i.e., they were remembered enough to engender engagement); and they were expressed or transmitted (i.e., relevant images were shared and posted publicly). In short, we take the examples below to be examples of effective memetic engagement for three reasons: (1) they were targeted to a specific issue, (2) they resonated with a relevant population, and (3) they were fit enough to gain traction (both in the form of memes posted, and in the form of mainstream media coverage). These examples are not exhaustive, but represent a sample of cases from which we can gain greater insights into the applicability and operationalization of memes in influence campaigns.

Our research suggests that the epidemiological approach has unique value because it is descriptive, prescriptive, and inclusive: this approach offers a clear summary of effective memetic campaigns; it identifies approaches to memetic engagement that might be replicated or imitated; and it capably engages with a wide variety of campaigns and actors. Figure 8 on the next page summarizes the examples we discuss—showing the range of issues and environments in which memetic engagement has been used.


Figure 8. Summary of examples

<table>
<thead>
<tr>
<th>INFECT</th>
<th>INOCULATE</th>
<th>TREAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia/Anti-ISIS</td>
<td>Japan/Anti-ISIS</td>
<td>US Embassy/Russia</td>
</tr>
<tr>
<td>Russia/Brexit</td>
<td>Misc/North Korea</td>
<td>misc/Italy</td>
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<tr>
<td>Russia/US Election</td>
<td>Mexico/Anti-ISIS</td>
<td>Misc/Catalan</td>
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<td>Anonymous/Anti-ISIS</td>
<td>Spain/Anti-ISIS</td>
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<tr>
<td>Pro-ISIS/Potential Recruits</td>
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<td></td>
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<tr>
<td>4Chan/Anti-ISIS</td>
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</tbody>
</table>

Source: CNA

**Inoculate**

*To use a meme in an effort to protect against a threat or anticipated attack. Using memes to preemptively address—with an emphasis on delegitimizing or undermining—a message or attack expected from another actor.*

**Exemplar: Japanese citizens respond to the Islamic State**

**Actor:** Japanese citizens  
**Message:** Anti-ISIS  
**Target Population:** ISIS, Japanese people

On January 20, 2015, ISIS released a video featuring Japanese prisoners Kenji Goto and Haruna Yukawa. The video functioned as a ransom request: the militants demanded that the Japanese government pay $200 million in order to secure the hostages' release. The video also included a message to the Japanese public:
To the Japanese public, [...] you now have 72 hours to pressure your government into making a wise decision by paying $200 million to save the lives of your citizens.... Otherwise, this knife will become your nightmare.26

The Japanese public, however, did not cooperate with ISIS's request. Instead, they embraced a hashtag that translated to “ISIS Crappy Photoshop Grand Prix,” and embarked upon an aggressive campaign mocking ISIS and the armed militant featured in the video.27 Importantly, this hashtag campaign—which included a significant memetic engagement—aspired in part to inoculate the Japanese public against the expected horror of the hostages being executed.

The hashtag campaign was varied and far reaching, and included a significant number of memes. Many of these were iterations of a specific image (in this case, a screenshot of the hostages and militant taken from ISIS's video). Some of the responses were culturally specific, and referenced Japanese gaming, kawaii, and anime culture; and some were more universally accessible and referenced Star Wars, cats, and global politics.28 Some sample memes are shown in Figure 9.


26 Ibid.


28 @deepquest, “#ISISクソコラグランプリ. #Caturday #ISIS,” January 24, 2015, https://twitter.com/deepquest/status/559015796127444994; @dedeyudistira, “Tongsis rek RT @Mosesofmason: ‘@Mugicle: ‘@temmo5: #ISISクソコラグランプリ ‘even Isis likes to keep it trendy,’” January 24, 2015, https://twitter.com/dedeyudistira/status/559054832661569536; @raktvru, “Reimu owned! #ISISクソコラグランプリ,” January 21, 2015, https://twitter.com/raktvru/status/558025030710599680; @tokyoscum, “ISIS threatens to execute two Japanese hostages, becomes Photoshop meme: #ISISクソコラグランプリ,” January 20, 2015, https://twitter.com/tokyoscum/status/557708538282512384; @Mitch_Hunter, “#ISISクソコラグランプリ #ISIS This has to be my favorite so far. Might be time to make a few myself 😊,” January 22, 2015, https://twitter.com/Mitch_Hunter/status/558480504874598400; @Top_kek_3, “@PelayoKnoxville #ISISクソコラグランプリ,” January 21, 2015, https://twitter.com/Top_kek_3/status/558038543222984704.
Importantly, not all of the memes that circulated as part of this hashtag campaign were iterations of the original screenshot from the video. Some were simply tapping into the ethos of the campaign, but relying on other imagery. One such example of this was a meme that circulated under this hashtag, but which used alternative imagery, and was an iteration of a widely circulated American meme that dated to 2009. In the new meme, ISIS leader Abu Bakr al-Baghdadi was featured as “Chubby Bubbles Girl” and shown fleeing a tiger.  

Ultimately, the fate of the hostages was not influenced by this memetic response. The Japanese government did not pay the ransom, and by the end of the month, ISIS had released videos showing the men being beheaded. Without minimizing this tragedy, it is possible to recognize that the memetic campaign surrounding it was incredibly effective. The hashtag was used more than 200,000 times in the days after the ISIS video was posted (and is, in fact, still in use in early 2018).30 And while the campaign provoked controversy, it was effective in undermining the ultimate goal of the terrorist movement by casting them as preposterous rather than powerful and threatening. The campaign permitted the Japanese people to take control of the narrative and “[deflate] ISIS’s formidable image.”31 As one Twitter user posted (with reference to the ransom deadline): “Tomorrow will be sad but it will pass and #ISIS will still be a big joke. You can’t break our spirit.”32 In short, the memetic response—inspired by screenshots from ISIS’s own video—effectively inoculated the Japanese people. While it did not change the outcome of the beheadings, it may have helped undermine the impact by delegitimizing ISIS and its actions.


32 Ibid.; @djvjgrrl, “Tomorrow will be sad but it will pass and #ISIS will still be a big joke. You can’t break our spirit #ISISクソコララグランプリ,” January 22, 2015, https://twitter.com/djvjgrrl/status/558451972102045696.
Supporting example: North Korean nuclear program

Actor: Miscellaneous
Message: Mocking Kim Jung Un and North Korea
Target Population: Miscellaneous

In September 2016, the online community responded to North Korea's fifth successful nuclear test with a variety of memes mocking both the country and its leader. The effort was not organized, and primarily relied on the somewhat generic hashtag #NorthKorea. That said, this organic online movement appears to have been an effort to *inoculate* against North Korea's belligerent posturing and increasing threat by delegitimizing the fear that the North Korean regime attempted to sow. Images circulated online in response to North Korea's nuclear test included screen shots of leader Kim Jong Un, cartoons, and preexisting memes adapted to the moment (see examples in Figure 11).

Figure 11. Examples of responses to North Korean missile launch

Source: See Footnote 33.

The effect of this memetic effort was observed through news coverage of the hashtag campaign that poked fun at Kim Jong Un, and it drew attention to North Korea's limited missile capabilities. This effort, coordinated by a disparate community of social media users, served to effectively undermine the threat that the North Korean regime wished to convey.

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Supporting example: Mexico responds to ISIS threat

**Actor:** Mexican citizens  
**Message:** Anti-ISIS  
**Target Population:** ISIS, Mexican people

In 2015, ISIS released a video erroneously naming Mexico as a member of the coalition fighting the terrorist movement and issuing a threat against the country and its citizens. The Mexican people responded via a meme campaign—using the hashtag #IsisEnMexico—and inoculated themselves against the group by posting a variety of memes mocking the movement and making light of the threat. The theme of the messages shared in response to ISIS’s threat was humorous and self-deprecating, with many of the memes invoking Mexican cultural ideas to comment on the nation’s preparedness, as the examples in Figure 12 illustrate.34

![Example of Mexico’s response to ISIS threats](image)

**Translation (right):** We are ready.  
**Translation (left):** I’m buying nuclear weapons because ISIS is in Mexico and we must defend the motherland.”

Source: See Footnote 34.

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In short, by deriding ISIS’s mistake and by making light of the threat that the group poses to Mexico, Mexican citizens effectively inoculated themselves against the group’s fearmongering.35

**Supporting example: Spain responds to ISIS threat**

**Actor:** Spanish citizens  
**Meme Message:** anti-ISIS  
**Target Population:** ISIS, Spanish people

In August 2017, shortly after its attacks in Barcelona, ISIS released a video featuring a Spanish-speaking extremist threatening violence against the country and promising to avenge the deaths of Muslims killed during the 15th-century Spanish Inquisition. The Spanish people responded promptly—demonstrating considerable resilience given the recent attacks—by using memes to both undermine the threat levied against them and to inoculate themselves against future violence. The campaign featured a series of images mocking the movement and turning the extremist into something of a laughingstock, as illustrated in Figure 13.36

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Figure 13. Example of Spanish response to ISIS threats

Infect

To use a meme to spread a specific message. To use memes in order to articulate a message—either positive (e.g., defending a value) or negative (i.e., disparaging an institution)—that aligns with broader mission objectives.

Exemplar: Nahdlatul Ulama Responds to ISIS

Actor: Indonesian non-profit Nahdlatul Ulama
Message: Anti-ISIS, Anti-violent Islam, Pro-moderate Islam
Target Population: Indonesian people

In 2015, the New York Times reported that Nahdlatul Ulama (NU)—an Indonesian Muslim organization with 40-50 million members—was poised to embark upon a campaign to counter ISIS’s extremism. NU was working with the University of Vienna in Austria (via a program called VORTEX, the Vienna Observatory for Applied Research on Radicalism and Extremism) to prepare effective responses to ISIS’s online propaganda. It was poised to open a “prevention center” where NU would train “male and female Arabic-speaking students to engage with jihadist ideology and

messaging under the guidance of NU theologians who are consulting Western academia.38

The movement’s approach, importantly, was not simply ideological whack-a-mole (e.g., an ISIS message is posted, and an NU representative responds). NU has a distinct and clear religious message. As one of the group’s leaders claimed: “According to the Sunni view of Islam every aspect and expression of religion should be imbued with love and compassion, and foster the perfection of human nature.”39 More pointedly, according to the article, NU “promotes a spiritual interpretation of Islam that stresses nonviolence, inclusiveness and acceptance of other religions.”40

These values were to be at the center of NU’s campaign. In short, the group would aspire to infect the population with a positive, pro-social, and moderate conceptualization of Islam that would be inimical to ISIS’s violent extremism.

Less than a year later, in 2016, reporting indicated that NU’s social media work was underway.41 Nearly 500 NU “cyber warriors” were actively attempting to counter ISIS’s online propaganda.42 As one cyber warrior commented, “We try to make the image of Islam as fun as possible. That’s why memes and tweets are the best way to spread our ideas.”43 He went on to note that he typically posted “silly memes that poke fun at extremists as well as earnest text posts that extol moderate Islam.”44


40 Ibid.

41 In fact, NU’s social media efforts were just one facet of a broader campaign that included a documentary film, several websites, an Android app, TV broadcasts, and conferences.


44 Ibid.
Examples of NU postings are difficult to identify as the group is still modestly sized and operating almost entirely in the Indonesian language. Some example posts have, however, been reported in the Western media, as illustrated in Figure 14.

Figure 14. Examples of NU responses to ISIS

Translation (center): “Keep your worship secret the same way you conceal your abominations.”
Translation (left): “It’s not important what your religion is... if you do something good for all mankind, people will never ask you.” And “Yes, religion keeps us away from sin, but how many sins do we commit in the name of religion?”

The NU movement remains small compared to the sophisticated social media campaign being coordinated by ISIS itself. That said, as a terrorism expert from the Indonesian Muslim Crisis Center noted, “It’s a good strategy to make Google searches fill up with moderate Islamic content... The battleground for Islamic ideology has moved to the Internet, and by producing as many moderate websites as they can, they can keep more minds healthy.” In short, NU aims to “set a ‘perimeter’ around aggressive Islam so that it doesn’t spread beyond those who are already radicalized.” Its goal is to articulate a moderate Islamic message, or, in other words,

46 Ibid.
to infect the wider population with an understanding of Islam that is tolerant and non-violent—in part because the organization believes that its understanding of Islam can serve as an exemplar for the Muslim world, and in part to prevent the spread of extremism.

**Supporting example: Russian interference in Brexit**

**Actor:** Russian troll farms  
**Message:** Pro-Brexit, Pro-leave  
**Target Population:** British people

On June 23, 2016—the day of the Brexit vote—over “150,000 Russian-language Twitter accounts posted tens of thousands of messages in English” advocating for a leave vote in the referendum. The campaign was relatively short-lived but still robust. The implicated accounts had been mostly silent on the issue of Brexit in the month leading up to the referendum, but became active as the vote approached. One set of researchers found, for example, that the pace increased from “about 1,000 a day two weeks before the vote to 45,000 in the last 48 hours.” Another study found that 38 accounts that Twitter had identified as Kremlin-linked had tweeted 400 times on the day of the vote. A third analysis found that 29 of the Russian accounts identified to Congress had “also tweeted 139 times about Britain or Europe.” And a fourth found that “a network of more than 13,000 suspected bots” tweeted pro-Brexit messages. Importantly, though, much of this early analysis focused on Twitter accounts linked to the Internet Research Agency and so doesn’t necessarily offer a comprehensive overview of Russian activity as the vote approached.

This campaign relied on a number of tactics. First, the Twitter accounts were linked to a variety of profiles and “people purporting to be a U.S. Navy veteran, a Tennessee Republican and a Texan patriot—all [tweeted] in favour of Brexit.” The tweets


49 Ibid.

50 Ibid.


invoked hashtags such as #EUref, #BrexitInOut, #BritainInOut and #BrexitOrNot in order to connect to a broader discourse.\textsuperscript{53} In some instances, they deployed anti-Muslim language and stoked fears about immigrants. As one analyst noted: “Many of these accounts strongly pushed the narrative that all Muslims should be equated with terrorists and made the case that Muslims should be banned from Europe.”\textsuperscript{54} As one example, a Twitter user tweeted: “I hope UK after #BrexitVote will start to clean their land from muslim invasion!”\textsuperscript{55} The account went on to post a widely shared photo—captioned to deliver an anti-Islamic message—taken during the attack on the Westminster Bridge.\textsuperscript{56} This image can be seen in Figure 15.

\textbf{Figure 15. Examples of responses to Russian interference in Brexit}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure15.png}
\caption{Example of a tweet from a Russian troll account related to the Brexit referendum.}
\end{figure}

\textbf{Source: See Footnote 55.}

Importantly, the campaign wasn’t nearly as extensive as the similarly structured and themed campaign to interfere in the 2016 U.S. presidential election (discussed below). Nor is it entirely clear what this campaign was attempting to accomplish. As one analyst noted, “We cannot say whether [these accounts] were primarily trying to influence Brexit or whether it was a side effect of them trying to wreak discord


\textsuperscript{56} Ibid.
generally.”57 The content was “quite chaotic” and perhaps “aimed at wider disruption.”58 And yet despite this ambiguity, it seems clear that these Kremlin-linked accounts were aspiring to infect a portion of the population with a clearly pro-Brexit message.

Supporting example: Russian interference in U.S. presidential election

**Actor:** Russian troll farms  
**Message:** Pro-Trump, Anti-Clinton, Pro-civil discord  
**Target Population:** American people

In 2016, a series of Russian-linked social media accounts—primarily on Twitter and Facebook, but also on YouTube, Tumblr, and Pokémon Go—shared a number of memes designed to influence the outcome of the American election. The ultimate goal of these Russian actors remains unclear. The Central Intelligence Agency (CIA) asserted that they aspired to aid then-candidate Trump, and the Federal Bureau of Investigations (FBI) asserted that there was no firm evidence to support this conclusion. Minimally, though, the activity seems to have been designed to disrupt the American political process by infecting the public discourse. As Facebook itself noted, the ads purchased on its website “appeared to focus on amplifying divisive social and political messages across the ideological spectrum.”59 An investigation into the activity continues, and indictments accusing 13 individual Russian citizens of interfering in the election came down in early 2018.60 An example of some memes that were used as part of this campaign are shown in Figure 16.

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Supporting example: ISIS spreads brand via @ISILCats

Actor: ISIS
Message: Pro-ISIS
Target population: Potential recruits and sympathizers

In 2014, ISIS sympathizers launched a new Twitter account—Islamic State of Cats, @ISILcats—that attempted to take advantage of the internet’s preexisting obsession with cat images. Beginning on July 25, the account posted images of ISIS fighters playing with kittens and cats, of kittens and cats playing with the paraphernalia of men and women in burqa and niqab, of black panthers, and of the Black Panthers' 1969 anti-Ku Klux Klan protest in San Francisco. The images were captioned with slogans like “Satan: If I win Clinton wins! Jesus: Not if I can help it!” “Like and Share if you want Burqa banned in America. Stop All Invaders,” and “Not My President—November 12. 12 PM. Union square, NYC.”

Source: See Footnote 60.
jihadi life (e.g., guns, ammunition), and of domestic life within the Islamic State. (See examples in Figure 17.)

The account referred to the kittens and cats as mewjahid (a pun on mujhideen), and functioned primarily to infect the public discourse with a softer image of the Islamic State. Analysts noted that the audience for such a campaign was relatively limited, and there was considerable debate in the U.S. media about the idea that ISIS might actually be recruiting via this account. CNN aired a segment sensationalizing claiming that ISIS was recruiting with kittens and Nutella, and other outlets pushed back to note that such a framework infantilized women and that the reasons women joined ISIS were varied and complex. Whether the campaign resulted in successfully attracting new recruits may miss the point, though, as its core objective might have been simply to normalize the group and its members.61

Figure 17. Examples of “mewjahid” memes

Source: See Footnote 61.

Supporting example: 4Chan mocks ISIS with rubber ducks

**Actor:** 4Chan, miscellaneous  
**Message:** Anti-ISIS  
**Target population:** Miscellaneous

In November 2015, a community on the website 4Chan spontaneously started an anti-ISIS online memetic campaign relying on rubber ducks. The idea, as one 4Chan community member argued, was to “[castrate] the image of ISIS by replacing the faces on ALL the propaganda photos with bath ducks.” In short, this online community aspired to *infect* the public discourse with a decidedly anti-ISIS image that undermined the movement’s own propaganda efforts. Images were posted using the hashtag #AllahuQuackbar, and an album collecting just a few of the photos was posted to website Imgur and had been viewed nearly 450,000 times by early 2018. (See examples in Figure 18.)

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**Figure 18. Example of 4Chan anti-ISIS ducks**

![Example of 4Chan anti-ISIS ducks](https://imgur.com/gallery/RvqlI)

*Source:* See Footnote 62.

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Supporting example: #DAESHbags anti-ISIS campaign

**Actor:** Anonymous  
**Message:** Anti-ISIS  
**Target population:** ISIS Social Media Accounts

In 2015, following the Charlie Hebdo attacks, the hacktivist movement Anonymous began targeting ISIS’s online operations. The movement’s efforts were relatively diffuse as those within Anonymous disagreed about which direction the campaign should take and/or whether or not it should continue. That said, while much of the work was focused on identifying ISIS-linked accounts on Twitter, Anonymous declared December 11, 2015, to be “ISIS Trolling Day” and encouraged those online to post mocking images using the hashtag #DAESHbags. The group even posted detailed instructions online offering suggestions for how to mock ISIS on Twitter, Instagram, Facebook and Youtube (as well as in “Real Life”). In short, Anonymous attempted to spread the message that ISIS was absurd by infecting the public discourse with a decidedly counter-ISIS message (see examples in Figure 19).

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Figure 19. Examples of #Daeshbags campaign

Source: See Footnote 65.

To use a meme to treat an already circulating message. To respond memetically—by mocking, disproving, or otherwise countering—to a message that has been spread by another actor.

Exemplar: U.S. Embassy Response to Russian Disinformation

Actor: U.S. Embassy in Russia

Meme message: News report circulating disinformation; anti-fake news

Target population: Russian people, REN TV, @rentvchannel and @USEmbRU followers

On September 20, 2015, pro-Russia media outlet REN TV falsely claimed that U.S. ambassador John Tefft had attended an opposition rally in Moscow earlier in the day.64 The charge was significant both because it affiliated Tefft with the opposition

movement, and because it aligned with Russian pro-government media claims that opposition actors are puppets of the U.S. government.  

The report claimed: “The meeting of the opposition in [the district of] Marino was memorable not only for the small number of people who came to support the opposition, but also for the appearance of the U.S. Ambassador in Russia, John F. Tefft.” It then went on to say that Tefft, when asked about his presence at the rally, indicated that he had attended in order to assess the “caliber” of Russian democracy.

In order to substantiate this claim, the report included a photograph of Tefft standing in front of a bank of reporters, with the opposition rally clearly visible in the background. REN TV even tweeted the photo with a link to the (now edited) report, saying “US Ambassador to Russia John Tefft strolled at an opposition rally in Marino” (see Figure 21).

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67 Ibid. Similar reporting came from other sites, with Radio Free Europe / Radio Liberty reporting that the original report said: “No matter how hard the American diplomat tried to get lost in the crowd, the media asked him why he showed up to this event. The short answer: He came to look at the development of democracy in Russia and judge its scale.”


68 This report was later edited to note that while photos of Tefft attending the rally were available on social media networks, it wasn’t clear whether they were accurate. Reporting at the time, however, relied on cached versions of the website (no longer available) to demonstrate that these additions were made after the fact. Carl Schreck, “Photoshop Wars: U.S. Ambassador ‘Attends’ Russian Opposition Rally...And The Moon Landing,” Radio Free Europe / Radio Liberty, September 21, 2015, https://www.rferl.org/a/russia-photoshop-us-ambassador-tefft-opposition-rally-ren-tv/27260885.html; Посла США в России Джона Ф. Теффта отправили на митинг оппозиции в Марьино, REN TV, September 20, 2015, http://ren.tv/novosti/2015-09-20/posta-rossii-dzhona-f-tefta-otpravili-na-miting-opposicii-v-marino; “Посла США в России Джона Ф. Теффта отправили на митинг оппозиции в Марьино,” September 20, 2015, https://twitter.com/rentvchannel/status/64565877426593792.
Figure 20. Example of Russian disinformation regarding U.S. Ambassador Tefft

Source: See Footnote 68.

The U.S. embassy chose to respond memetically—effectively treating the Russian attempt to infect—by turning Tefft’s image into a meme. They identified the original source of the image (a February 28 interview at a site near the Kremlin), explicitly labeled it as fake news and an act of photoshopping, and created their own photoshopped images to mock the fake story.⁶⁹ Just a few hours after the REN TV tweet, the U.S. embassy in Russia responded with the tweet shown in Figure 21.⁷⁰


⁷⁰ @USEmbRu, “Посол Теффт провёл вчерашний выходной дома. Но благодаря фотошопу можно оказаться где угодно. #fake #фейк,” September 21, 2015, https://twitter.com/USEmbRu/status/645921015613276160.
Figure 21. U.S. embassy response to Russian disinformation

Translation: Ambassador Tefft spent yesterday's weekend at home. But thanks to Photoshop you can be anywhere. #fake #fake
Images: The original image (upper left); the photoshopped image that REN TV tweeted (upper right); Tefft at the moon landing (lower left); Tefft at a hockey game (lower right).
Source: See Footnote 70.

The U.S. embassy continued with a series of three additional tweets placing Tefft at the moon landing (a repeat), with Douglas MacArthur in the Philippines in 1945, and at a hockey game (also a repeat), as shown in Figure 22.71

Figure 22. More examples of U.S. embassy response to Russian disinformation

Source: See Footnote 71.

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Reporting also indicated that in the hours after the U.S. embassy tweets, other Russian Twitter users tweeted similarly doctored images showing Ambassador Tefft attending Russian weddings and (in one particularly amusing instance) surrounded by cats, as shown in Figure 23.72

Figure 23. Russian Twitter users’ response to Russian disinformation

REN TV initially responded by editing its original article to reflect the possibility that the image it had posted had been doctored, and ultimately followed up with an acknowledgment that the image was fake.73 The real victory, though, was that the U.S. embassy tweets had been retweeted nearly 1,000 times while the initial REN TV tweet was retweeted less than 100 times. Additionally, the memetic exchange generated widespread media coverage with news articles—clearly identifying the Russian story as fake—appearing in Russia, the United States, and Europe.


Supporting example: Response to Italian government’s censorship

Actor: Italian citizens
Message: anti-censorship
Target population: Italian government, Italian people

In January 2016, in preparation for the visit of Iranian President Hassan Rouhani, Italian authorities chose to cover up a series of nude statues in the Capitoline Museum (the planned site of the meeting). The decision attracted considerable attention, and reporting on the topic indicated that Rouhani had not requested the accommodation. Moreover, the Italian Culture Minister called the act “incomprehensible” and noted that neither he nor the Italian Premier had been consulted about the decision.74

The online response was, however, less concerned with who made the decision than with the fact that it had been made. As a result, in the wake of the news breaking a somewhat spontaneous memetic response from both Italians and Iranians took shape. Despite its organic and unorganized nature, the effort was a clear rejection and condemnation of the Italian government’s decision to censor. It was, in other words, an effort to treat an existing social ill (or, what one Twitter user described as “cultural suicide”).75 The response was, importantly, incredibly varied.

In one image, a photograph of the statues was modified to suggest that they had been covered with the same banner that Iranians see when a website has been banned by the government (see left image in Figure 24).76 In other instances, the images attempted to offer alternative means of covering the allegedly offensive nudity (see center image in Figure 25).77 And in some instances, the images gestured


at the fact that Rouhani was scheduled to visit France after departing Italy (see right image in Figure 24).78

Figure 24. Examples of Italian response to censorship

Source: See Footnotes 76 and 77.

Others images mocked Rouhani by photo-shopping an image to suggest that he had met with the Pope beneath a prominently displayed painting of nudes (see left image in Figure 25).79 And some were effectively targeted efforts to send nude images to Rouhani himself via the use of hashtags #Rouhani and #Statuenude (see center and right images in Figure 25).80


79 Ibid.


The campaign was relatively short lived and somewhat scattered, but it was nonetheless a clear refutation of what had happened. It was also, importantly, an attempt to treat the harm done by this event: it worked to shape the public discourse so as to prevent the widespread acceptance and normalization of such censorship, and/or reduce the potential that it might occur again.

**Supporting example: Response to Catalan government’s disinformation**

**Actor:** Spanish citizens  
**Meme message:** Anti-Catalan leaders  
**Target population:** Spanish people

In October 2017, a controversial referendum was held on the question of Catalan independence.81 While the results suggested strong support for the move, accusations of police pressure, voter suppression, and voter corruption were also rampant. Following a series of political steps—by the local Catalan government and the larger Spanish government—the local government was dismissed. Additionally, the Spanish government indicated that it intended to charge the Catalan president and his cabinet with rebellion and embezzlement. In response, the Catalan president and a few advisors fled the country.

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81 Catalonia is an autonomous community—a political and administrative region with its own elected government—consisting of four provinces located in the northeastern corner of the country.
A few weeks later, these now deposed government leaders launched a new website for the “legitimate government” of Catalan. On the main page, they included a photograph of the government’s leaders. The image they used, however, was a picture edited to remove one individual. The photoshopping effort was botched, though, and the removed individual’s pants were still visible. This resulted in a series of memes (some invoking the TV show The Simpsons and the film Back to the Future) responding to the event. (See examples in Figure 26.) These memes were essentially treating the issue by calling attention to incompetence (i.e., in this particular case the issue was not disinformation, but the incompetent and untrustworthy nature of the Catalan leadership).82

Figure 26. Example of response to Catalan disinformation

Source: See Footnote 82.

**Preliminary observations**

This wide-reading and compelling dataset of examples is not—due to the exploratory and preliminary nature of this study—empirically robust enough, in terms of collection technique or analytic assessment, to justify strong conclusive statements.

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regarding the nature or utility of memetic engagement. It is possible, though, to articulate a number of preliminary observations that stem from an examination of the examples explored above:

- **The effective use of visual memes is not limited to counter-radicalization efforts.** While memes certainly have utility in that area, they have also been deployed productively in response to terrorism more generally, disinformation campaigns, and government censorship.

- **The range of visual memes being deployed in memetic campaigns is far reaching.** In some instances the format is the familiar one of combining a well-known picture with words following an established grammar. Other examples include doctoring situationally relevant images (e.g., a screenshot taken from an ISIS video), creating brand new images with distinct messaging, and pairing images with common cultural references.

- **Visual memes often (though not always) make use of humor, irony, and sarcasm in order to resonate emotionally.**

- **Visual memes often transcend individual cultures and languages, and can reach broad communities of disparate actors in the online information environment.** For example, the images edited to mock ISIS’s threat to execute Japanese hostages are widely recognizable as anti-ISIS images and do not depend on an understanding of Japanese culture or language.

- **Well-targeted visual memes are culturally specific and situationally narrow.** This may seem to be a direct contradiction of the previous observation, but it is important to acknowledge that the images edited to mock ISIS’s threat to execute the Japanese hostages are particularly effective in context (i.e., as part of the relevant hashtag campaign and in direct response to ISIS’s threat) and particularly meaningful with an understanding of Japanese culture and language.

- **Visual memes are utilized by all manner of online actors—governments, NGOs, non-state actors, and individuals.** Most frequently, though, they take shape organically and are created by a civilian population.

- **Visual memes have been used effectively at tactical level (e.g., combatting local government censorship) and strategic level (e.g., against North Korean missile tests).**
Observations from Subject Matter Expert Discussions

In addition to our review of relevant literature and examples of visual memes, we conducted semi-structured discussions with a number of subject matter experts from the USG, as well as academic and private sector experts and practitioners in marketing, advertising, and psychology (to include a professional internet troll). We did this to help draw preliminary observations on the applicability of memes to USG influence campaigns. Given the exploratory nature of this study, this list of observations is not conclusive, but is designed to elicit follow-on dialogue:

- **Using memes well is neither predictable nor formulaic.** Across the board, the SMEs we spoke with suggested that the art of using digital content to influence people is largely uncharted territory. Experts emphasized that messages should be crafted with care—rejecting conventional wisdom that it might be best to simply attempt a variety of options—in order to increase the likelihood of effective engagement, increase the likelihood of message integrity being maintained, and protect against unforeseen consequences. That said, some of the most popular online campaigns develop through organic, community driven engagement in which this type of control is impossible. There will, as a result, continue to be a steep learning curve as government and the private sector begin to understand how to use memes as part of a coherent narrative arc.

- **Viral content is not analogous to persuasive content.** Experts challenged the tyranny of quantitative metrics repeatedly by noting that clicks and likes do not translate into activity by content viewers. Indeed, motivating offline behavior was earmarked as one of the toughest problems to tackle. This reflection is bolstered by a body of existing academic research which suggests that spreading content is not reliably correlated to active behavioral outcomes.\(^83\) While viral content may be useful when used as a way to increase

message repetition, quantitative metrics do not generate enough data from which to draw meaningful conclusions with respect to message impact or effect. As a result, understanding the impact of information or influence campaigns remains a challenge.

- **Changes in attitude do not necessarily correlate to changes in behavior.** This observation, driven by our literature review, was echoed in conversations with SMEs in both psychology and advocacy. Indeed, the behavioral psychology literature is clear that changes in attitudes may not produce changes in behavior. With this in mind, experts suggested that consideration should be given to achieving behavioral outcomes by examining influence vectors in the offline environment in addition to those used online.84

- **Audience granularity is essential to generating desired effects in memetic engagement.** Through conversations with government practitioners, particularly those who work as information and psychological operations tacticians, we learned that gaps exist between teams responsible for identifying audiences and those producing content. This disconnect contributes to an environment in which audiences are treated monolithically. These SMEs, as well as those who practice grassroots advocacy, suggested that greater specificity relative to audience demography will enhance message penetration and audience consumption as part of influence campaigns.

- **Memes can play a role across the spectrum of USG activities and conflict.** A number of SMEs from the USG influence community noted that memes can play a role in messaging, shaping counter-narratives, and broader online engagement at strategic, operational, and tactical levels as part of whole-of-government influence campaigns for countering both state and non-state adversaries. Further, integrating memetic engagement with other USG tools, including diplomacy, development, and defense, may be fruitful in achieving the desired effects in countering adversaries.

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• **It is helpful for memetic engagement to be reinforced with face-to-face engagement.** Numerous SMEs from the USG influence community noted that face-to-face and on the ground engagement serve as critical components to influence campaigns, and are used as tools to promote Western values, build personal connections, and affect stability in countries of interest. Many noted that it is useful to think about combining memetic engagement online with face-to-face engagement to counter the influence of state and non-state actors in the information environment. Such a combined approach can serve as a force multiplier in persistent military and diplomatic engagement, which serve as critical components of influence campaigns.
Conclusion

This exploratory study was structured to serve as a foundation for analyzing the applicability, utility, and role of memes in USG influence campaigns. We approached the concept of memes from a historically informed perspective, and we reviewed literature on the topic ranging from Richard Dawkins’ 1976 definition to recent internet-era innovations. In light of this analysis, we concluded that a meme was most productively and accurately defined as a culturally resonant piece of information that is easily shared or spread online. We then shifted our focus to visual memes, and developed an epidemiologically inspired rubric to classify cases of memetic engagement, and identify the ways in which memes might be effective tools in influence operations.

Our preliminary observations—based on our comprehensive review of the literature on the operationalization of memes, exploration of these example cases, and discussions with a wide range of subject matter experts—suggest that memetic engagement is a potentially effective, but currently underexplored, vector via which to counter state and non-state actors, and further USG policy goals via the online information environment.

Our discussions with subject matter experts across the USG and other expert communities indicated that memetic engagement can be integrated into USG influence campaigns as part of a broader influence strategy. The largely unchecked (or imperfectly checked) spread of information online allows memes, a complement and supplement to existing narrative and visual campaigns, to move across cultures and countries and to serve as a “force multiplier” for diplomatic and military face-to-face engagement.

In short, our discussions with subject matter experts emphasized that memetic engagement should be undertaken as part of broader USG influence campaigns with clearly defined objectives. The porous borders of the online information environment mean that a meme posted to an account on one continent can go viral on another continent 20 minutes later and with a potentially very different outcome. Thus as depicted in Figure 27, memetic campaigns should be positioned within existing influence campaigns. They may fit within more narrow category of narrative engagements or may fall broadly within influence campaigns writ large; and they may be visual initiatives or they may be non-visual efforts (though our focus has been on visual memes). In each instance, though, overarching consistency—and the recognition that memetic engagement is one part of a larger influence initiative—is critical to success.
Suggestions for further research

Given our conclusion that memes and memetic engagement hold promise as a component of USG influence campaigns, we strongly believe that additional research on the use of memes and memetic engagement should be undertaken. Suggested topics for additional research include:

- What constitutes an effective memetic engagement? What type of visual, digital, and cultural information might one need to create an effective memetic engagement? How would this differ from the information needed to inform a traditional USG influence campaign?

- When are memes and memetic engagement effective? What can an effective memetic campaign accomplish? What makes a campaign effective? How can we assess and evaluate their use in a way comparable to that in which we assess and evaluate the use of other forms of communication and messaging?

- Who should hold authorities for memetic engagement? Who are the appropriate USG entities to lead the creation, dissemination, and evaluation of the use of memes?

- Where are memes most useful in USG operations (e.g., at the strategic, operational, and tactical military levels, as part of diplomatic engagements,
etc.)? How much utility do they have in shaping operations, competition short of armed conflict, irregular warfare, and in major combat operations? How and why might their utility and usage need to change across these activities?

In closing, we believe that visual memes and memetic engagement are tools with great potential for the USG as it looks to counter the information activities of state and non-state actors and more proactively engage audiences online. But we also believe that considerable additional research should be undertaken in order to ensure that the USG is maximally effective in the use of these tools.

Figure 28. Leonardo DiCaprio meme on the end of this report

![Meme Image](https://imgflip.com/memegenerator)

Appendix: A History of “Memetic Warfare”

One of the concepts that initially led to our interest in the topic of memes was that of “memetic warfare.” Ultimately, for reasons we discuss below, we decided not to pursue this concept as the framework for thinking about the use of memes (preferring instead the epidemiological model presented above). But it is worth including a brief discussion of this concept here both for the sake of completeness and to make the reader aware of its shortcomings.

In an unsurprising way, the discussion on “memetic warfare” closely followed the discussion on memes, in that early work focused on the transmission of ideas, and later work focused on the transmission of ideas on the internet.

The first school of thought on memetic warfare referred primarily to an effort to win a broadly construed battle of ideas. One articulation of this position came in Edmund Glabus’s 1998 “Metaphors and Modern Threats: Biological, Computer, and Cognitive Viruses.” Clearly inspired by the work of Dawkins, and by epidemiological approaches to meme transmission (i.e., those in which memes are understood to be passed from brain to brain via a process that mimics contagion), Glabus argued that “cognitive viruses by our definition infect people with a meme, a unit of information in a mind whose existence influences events such that more copies of itself get created in other minds.” 85 He went on to argue that these memes—which might include rumors of U.S. involvement in germ warfare, conspiracy theories about U.S. complicity in spreading the AIDS virus, etc.—were particularly problematic for the U.S. government because they “spread so well and are so durable.” 86 Memetic warfare, as Glabus framed it, was conceptually closest to perception management, which he defined, in part, as “actions taken to convey and/or deny selected information and indicators to foreign audiences to influence their emotions, motives and objective

86 Ibid.
reasoning." Citing a short paper that was published on information warfare, Glabus suggested that the objective of memetic warfare would be to "insert new memes into the mind of the adversary," taking advantage of the fact that they were likely to self-replicate, spread, and infect a growing population. Memetic warfare was, in other words, an advancement of work on information warfare, and an effort to infect a population with a viral idea that was beneficial to the U.S. government.

A more thorough exploration of the idea came a few years later with Richard Pech’s “Inhibiting Imitative Terrorism Through Memetic Engineering.” Pech acknowledged that a meme might convey a core message, but emphasized that there would be considerable variation in how these messages were received by different listeners. He then argued that this mechanism—the spread of memes via the media, the embedding of a core message, and the interpretability of the message—had significance for those hoping to combat violence:

Certain violent behaviours labeled under such terms as terrorist, sniper, and gunman, become immortalised in history and...a small minority of individuals justify their violent behaviours by projecting themselves into the role and circumstances of their hero predecessor. They choose to do this because certain violent acts have become memes with which they find identification and through which they find justification. Some of these violent memes project an image depicting a macho, freedom fighting, minority rights, and/or wronged individual redressing balance of power theme.

These terrorism and violence memes are, in other words, appealing to a vulnerable subset of the population. Thus, one easy response to the challenge of reducing terrorism might be “in the elimination” of such memes. Unfortunately, terrorism and violence memes are also appealing to the media because they make good headlines and increase sales. As a result, it is difficult to imagine that the media will

87 Ibid., 205.


90 Ibid., 64.
voluntarily stop reducing the spread of these memes. Pech went on to argue that one viable response to this conundrum—a response he refers to as *memetic engineering*—might be to edit the meme’s encoded information. He argued, “Changes to the terrorism meme will alter the information that is received by an individual in a state of disidentification, possibly removing the stimulus that could have led to an act of terrorism, and in the event of an act of terrorism, changes in its reporting may inhibit copying behaviours by re-engineering the contents of the terrorist meme.”

In other words, purposefully editing the meme—perhaps by always describing terrorists as “cowardly, insecure, weak, malicious, gutless, pointless, mentally unstable, spineless, puny, pathetic, despicable, and loathsome”—might diminish its appeal, slow its replication, and (most optimistically) decrease the number of terrorist acts. As Pech noted, it is even possible that “a deliberate mutation [of the meme] will be lethal to the meme’s level of fitness, contributing to a failure to replicate and ultimately, being a causal factor in its death.”

The second school of thought on memetic warfare built on this early work (i.e., framing memetic warfare as an effort to shape the information environment) but recognized that the battle of memes would largely be waged online. Some of this work was focused, for example, on the challenge of maintaining message integrity in the Wild West of the global internet. Thus one article, on memetic warfare within domestic American politics, acknowledged the struggle to find a balance between facilitating and constraining mutation: “We, the virus designers, wanted participants to take the core idea and make it their own—to ‘run with it’—but we also wanted to control the degree and kinds of mutation.” Done successfully, the meme would evolve such that “the mutations that developed in the field generally tended to be extensions of, rather than departures from the basic framework.” Done unsuccessfully, the meme might evolve in ways that conflicted with the original message and agenda.

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91 Ibid.
92 Ibid., 65.
93 Ibid., 64. One frequently cited article on the topic is “Memetics: A Growth Industry in US Military Operations,” which was published in 2005 by Major Michael Prosser during his tenure as a student at the United States Marine Corps School of Advanced Warfighting. Prosser, now a lieutenant colonel in the Marine Corps, briefly summarized the literature on memetic warfare, argued for the creation of a “Meme Warfare Center” to take up this work, and outlined the hypothetical organizational structure/location of such a center.
95 Ibid.
Other articles took the additional step of attempting to offer concrete ideas for countering ISIS’s presence online. One author suggested, for example, that we might undermine ISIS’s efforts to dominate the information space by recruiting “a few good internet trolls” to engage in campaigns such as “[flooding] the online environment with an overwhelming volume of counter-narratives,” or spreading fake material so as to “drown legitimate videos in a sea of fake ones.” Another article argued for an even more aggressive engagement including controversial actions such as catfishing (i.e., luring and deceiving someone online via a fraudulent account), doxing and harassing the family member of ISIS affiliates (i.e., publishing the personal contact information of family members and encouraging online harassment), spreading misinformation, and/or launching delegitimizing social media campaigns that link ISIS with ideas it finds abhorrent.

Perhaps not surprisingly, much of this internet-era work has been driven by a concern about ISIS’s online social media success and the USG’s struggle to successfully counter the movement’s messaging. As a result, memetic warfare is being proposed as a non-kinetic means of undermining ISIS’s online presence (and thus an approach that risks fewer civilian casualties than, for example, bombing ISIS’s media infrastructure). One particularly comprehensive treatment of the topic comes in Jeff Giesea’s 2015 “It’s Time to Embrace Memetic Warfare.” The article begins with the idea that “it seems obvious that more aggressive communication tactics and broader warfare through trolling and memes is a necessary, inexpensive, and easy way to help destroy the appeal and morale of our common enemies.” Importantly, the article goes on to offer a relatively robust definition of memetic warfare:

> Memetic warfare, as I define it, is competition over narrative, ideas, and social control in a social-media battlefield. One might think of it as a subset of ‘information operations’ tailored to social media...Memetic warfare could also be viewed as a ‘digital native’ version of psychological warfare, more commonly known as propaganda. If propaganda and public diplomacy are conventional

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96 Kalev Leetaru, “A Few Good Internet Trolls,” *Foreign Policy* (July 14, 2015), http://foreignpolicy.com/2015/07/14/islamic-state-twitter-recruiting/. This article also argues that this effort should be located in the Department of Defense as tasking State Department representatives with the work of responding to ISIS might inadvertently validate ISIS.


98 Ibid., 69.
forms of memetic warfare, then trolling and PSYOPs are guerrilla versions.\textsuperscript{99}

In addition to locating memetic warfare very firmly in the “communications battlespace,” Giesea also frames the tactic as an aggressive form of the more “tepid, timid, and stale” PSYOPS and military information operations.\textsuperscript{100} It is “weaponized trolling,” which is “the social media equivalent of guerrilla warfare.”\textsuperscript{101}

In theory, of course, memetic warfare needn’t be as aggressive as it is in the model that Giesea outlines. That said, most contemporary work frames memetic warfare in decidedly aggressive terms. It is understood to be an inherently disruptive process, and the tools of such an approach—ranging from the creation of a new meme, to the doxing of an enemy, to wide-ranging social media guerilla operations—are theorized to be best suited to only certain types of engagement. In other words, despite early work suggesting that memetic warfare might be understood as a form of “perception management,” contemporary approaches consistently frame it as something more like guerilla social media use.

This work is, in all likelihood, a direct response to the reality of the online environment in which internet memes exist. As one article noted, successful memes are necessarily simplistic and they “thrive on a lack of information—the faster you can grasp the point, the higher the chance it will spread.”\textsuperscript{102} Memes effectively provide information that is over-distilled, over-simplified, and under-evidenced (and in some cases, patently false). The same article noted that successful memes tend to articulate extreme positions, and cited research demonstrating that socially isolated individuals who might be described as “on the fringe” were more likely to create successful memes.\textsuperscript{103} Another article argued that memes “function like the IEDs of information warfare...great for blowing things up, but likely to sabotage the desired effects when handled by the larger actor in an asymmetric conflict.”\textsuperscript{104} In other words, memes are typically understood to be an effective tool for insurgencies striving to disrupt the status quo, but they are not typically framed as effective tools

\textsuperscript{99} Ibid., 70.
\textsuperscript{100} Ibid.
\textsuperscript{101} Ibid.
\textsuperscript{103} Ibid.
for established powers looking to foster stability. Memes are, in short, typically understood to be inherently destabilizing and not well suited to the articulation of a cultivated, managed message or program.

Our analysis recognizes the rich history of the concept of “memetic warfare,” and we do not deny that this type of disruptive engagement (i.e., guerilla social media use) has value. The very crisis that provoked this recent spate of writing on memetic warfare—ISIS’s online social media success and effective messaging—is one that could be productively mitigated with a careful and thoughtfully disruptive effort. That said, our analysis suggests that memes have utility far beyond the types of engagements that fall under the narrow rubric of “memetic warfare.” As a result, we recommend that practitioners in the influence community instead seek to explore the role of memes within the broader and more inclusive category of influence campaigns.

105 Ibid.
Appendix B: Organizations and Individuals Contacted

Comedian, Professional internet troll
George Washington University
Intelligence Community Consultant
National Counterterrorism Center
Social Media Consultant
Stanford University, Peace Innovation Lab
University at Buffalo, The State University of New York
U.S. Army Special Operations Command
U.S. Department of Defense, Joint Information Operations Warfare Center
U.S. Department of Defense, Joint Staff
U.S. Department of State, Global Engagement Center
U.S. Navy Office of Naval Research
U.S. Special Operations Command
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