"A Different Kind of Viral Threat: The Challenges to Peace Studies Posed by Viral Information on SNS Platforms"

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Introduction

In the eight months since reports of COVID-19 (Coronavirus disease 2019) first appeared in major news feeds, the virus has developed into global pandemic that has inflected over 20 million people. In addition to the growing human death toll (over 840,000 in late-August 2020), COVID-19's rapid spread has crippled economies and curtailed social activities worldwide. The magnitude of this damage is reflected in burgeoning debates over possible shifts in the global order as societies struggle to address the pandemic's short- and long-term effects (The Center for Preventive Action, 2020). Specific themes range from political tensions to refugees and population migrations, but there is also growing public recognition that the rapid spread of COVID-19 has been paralleled by a confusing explosion of information throughout mass media outlets and SNS networks that are elemental to modern daily life. Within this flood of data, medical researchers, political figures, religious leaders, media companies, local communities, online groups, anonymous sources, and even individual users utilize YouTube and an array of SNS applications to state and disseminate their assessment of the virus, its impact on their lives, and possible treatments. This information flow is not only inflected by the desire to share medical knowledge, but also by motivations that range from political goals to personal fears over economic loss and death. Some of these statements accurately reflect the best information available from credible sources, but there is also much misinformation (e.g. misunderstood or outdated data) that is shared by people who sincerely believe they are contributing to the greater public good. More disturbingly, there it is possible that national-states, ideologically driven groups and organizations (including some media outlets), and even individuals (including public officials) may spread disinformation as they respond to the virus by pushing their respective agendas.[1]

Questions that arise over the quality of available information are compounded by the means of dissemination. While it is possible to associate particular statements with prominent doctors or government officials, the acts of "liking" and "sharing" that are the heart of modern SNS apps like Facebook, Instagram, and Twitter facilitate the viral spread of other data between users across time zones and national borders. Mass media news outlets (newspapers, corporate run websites, etc.)

operate under editorial supervision, but social media supervision is far more variable. Depending on the SNS site, moderators may enforce site policies to reject submitted contents or remove inappropriate items after posting, but pre-posting evaluation and editing on other platforms is weak to non-extant. Furthermore, if a discussion group already has a political stance, then moderators may facilitate rather then hinder the transmission of questionable material. As a result, a piece of benignly intended misinformation could be seen by thousands, some of whom will accept it as accurate and then pass it on. For the fabricators of disinformation, the web offers ample opportunities for what I would call "provenance laundering," which means that after a piece of disinformation is injected into a SNS system, constant sharing can disassociate that statement from its source. Over time, dissemination among users leads to its acceptance as general knowledge. When that occurs, any distinction between disinformation and misinformation fades and statement becomes the "truth" for certain communities of SNS users. Eventually, more substantiated data may enter the public sphere to counterbalance such disinformation, but full eradication from public discourse is difficult to achieve. In response to widespread confusion over COVID-19 data, the World Health Organization has labeled these phenomena as an "infodemic," ("an overabundance of information – some accurate and some not – occurring during an epidemic"), and it recently held its first conference to address it (WHO 2020).

While these struggles over web-based flows of COVID-19 data are certainly perplexing, they should not be surprising. Over the last decade or so, we have seen ample evidence of similar confusion over information related to other issues, and there is growing body of literature on how media outlets and web-based social networks can be used and manipulated by a range of actors intent on achieving specific political ends. Although the Internet provides us with access to the vast breath of human knowledge, the present systems and modes of information simultaneously can foster potential confusion among users. A group or an individual with specific objectives can thereby exploit this potential to sow socio-political discord and incite violence.

In this research note, using the concept of "virus" as a metaphorical spring board, I wish to briefly discuss the nature and challenges posed by the transmission and manipulation of contents that are now evident in Internet based mediums for data exchange. Although researchers are just beginning their analyses of problematic information exchange in the context of COVID-19, I will start by looking at some available examples of how mis/disinformation related is being shared on media platforms. I will then expand the scope to look at (1) other examples of SNS and viral mis/disinformation as tools for political disruption and (2) ISIS's manipulation of online media as examples threatening social media use. This shift may appear out of place, but the inclusion of these cases will help us to understand the methods and implications of web-oriented "viral" media campaigns coordinated by an organization with aggressive goals. In the conclusion, since the manipulation of information is transforming the Internet into a sphere of conflict, I will suggest two possible peace studies responses to these challenges.

Of course, the juxtaposition of a biological agent with a conceptual category (information)

requires a negotiation of meaning and intent. In a literal sense they are quite distinct: No one desires their own viral infection, whereas people may actively seek out certain kinds of information. If we think about the effects of viral transmission, however, there are parallels between COVID-19 itself and the issue of viral information that will help us to perceive the emerging issues associated with latter topic. As per my comments above, the sharing of mis/disinformation via sharing resembles the process of host-to-host dissemination of a virus. Furthermore, if an exposed individual has specific preexisting medical conditions, a genetic disposition that enhances their receptivity, or even a lifestyle that weakens the immune system, COVID-19 can overcome their biological defenses, which furthers its propagation at the host's expense. Along the same lines, depending upon the social, political, economic and cultural factors that informs an Internet user's world view, they may be inclined to accept at face value unsubstantiated yet appealing information, or they may reject viable data that does not conform to their presuppositions.[2] They may then share the data and their response with other users. The larger implications of these transmissions share another similarity: just as COVID-19 propagation leads to expanding infection clusters that disrupt society, web-based viral information sharing can create potentially disruptive clusters of users who are divided by their reactions to the information they encounter and share.

Background Points

Every society struggles with divisive issues, but the recent transformation of media sharing and social exchange platforms into global networks has increased the potential scope of their influence. Therefore, I will first outline several general points about Internet based interactions that create the conditions for the examples that follow.

Art and communications technologies have always played an important role in political discourse and contestations over power, and every technological advance (movable printing press, telegraph, radio, telephone, films, TV, video recording, etc.) has offered new tools to those who wish to maintain or contest the power structures of their society's status quo (German 2019, 215; Patrikarakos 2017; 13. Burke 2001, 59-80; Hanson 2008; Cumings 1992.) SNS applications and the web are thus the latest element of a historical continuum, however, the expanding scale of these formats over the last hundred years has increase their ability to reach dramatically larger audiences. Whereas thousands in a city might have seen 19th century newspapers and 20th century TV broadcasts entered millions of homes in a country or region, Facebook alone has billions of users *worldwide*.

Seeing the potential of such networks, businesses in the 1990s began to employ "viral marketing" campaigns in which consumers were enticed to share that company's product ads to others. Such a manipulation is not necessarily problematic, but there is growing use of similar methods for virally sowing aggression. Now observers even speak of the "mediatization of war" and the "weaponization of media."[3] Modern computerization has already created the possibility of cyber attacks against an opponent's data systems and physical infrastructure, but the gist of these new

observations is that physical warfare is now paralleled by net-based conflict as supporters of the combatants use virally disseminated disinformation and the collective power of SNS networks to recruit followers, raise funds, and strengthen global support for their causes, while simultaneously striving to check similar activities by their enemies. Such campaigns can be quietly waged even in times of peace to undermine the social and political stability of potential opponents by fostering alienation and anger among discontented groups within targeted populaces. Furthermore, we are now beginning to see the emergence of "digital militias" to execute these online struggles (Patrikarakos 2017, 263), and an aggressive operator could even fill its own ranks from within an enemy's community.

This new form of conflict is facilitated by the very nature of SNS use. The main networking providers (Facebook, Twitter, etc.) might be regulated by nation-state officials, but their user networks are transnational, hence they are beyond any kind of unified supervision.[4] At a functional level, in order to enhance profitably through ad revenue, corporate engineers have designed their systems to analyze users' activities (their "likes", story/image sharing, etc.) and then provide them with similar contents. These systems also introduce users to clusters of like-minded people. This engenders "homophily" ("love of the same") that in turn fosters online "imagined communities" unified by shared preferences (Patrikarakos 2017, 12-13). At the same time, such channeling quietly reduces user exposer to countervailing opinions and perspectives that would stimulate self-reflection and a questioning of presumptions. In that sense, the algorithms and search engines now running social media networks engender divisiveness as well as unity, and a user must willingly seek out different views in order to break free of this implicit herding mechanism.

Furthermore, the psychological sense of affirmation provided by homophily may be reinforced by biochemical reactions to SNS activities. According to news organizations' summaries of medical studies, computer usage and exposure to new experiences stimulates the body's production of dopamine. This is a neurotransmitter that induces a sense of pleasure or fulfillment and thereby encourages repetition of the same action (Hayes 2018; Parkin 2018). The combination of homophily based communal identity reinforcement and biological neural stimulation give social networks the socio-biological means to entice continued participation from members.

Prior to the Internet, government and corporate entities largely controlled the production of mass media, and the methods of transmission generally encouraged passive consumption by their citizens or users. That has changed as corporations create interactive transnational and transcultural networks in which users can go "global" while simultaneously developing highly localized forms of member participation. ("Local" here can refer to physical proximity or shared interests.) This "glocal" character further enhances social media's appeal. The democratization of content creation has been tremendously empowering, because any individual with a personal computer can compose text messages, images and sophisticated videos at home or a café and then interject them into networked information streams for viral transmission to others. David Patrikarakos had named this kind of active net user *Homo digitalis* (2017, 9-10), and the ease of use allows *Homo digitalis* to challenge the

hegemonic control of mass media exercised by nation-states, newspapers and broadcast corporations. Traditional power holders will resist such activities when pushed, but the emergence of such a "hyperempowered individual" (2017, 9) has altered the status quo.

For Patrikarakos, the epitome of *Homo digitalis* is Farah Baker, a Palestinian girl who streamed images and Twitter texts in 2014 to protest Israeli attacks on Gaza (2017, 23-). In short, a sixteen-year old armed with a smartphone was confronting a nation-state. With a sense of irony, I would say that President Trump is another exemplar. Even though he is an elected head of state, he regularly uses Twitter to contradict policy statements made by his own administration. His may be virally passing unsubstantiated content gleaned from web sources (more on this below), but the imprimatur of his position legitimizes such mis/disinformation for his supporters.[5] In Trump's case, public perceptions of him (good or bad) are also enforced by his extensive legacy of news reports, interviews, and TV activities, much of which is now on the web.

One final element to note is the impact of technology's evolution. Within the space of thirty-years, we went from immobile mainframes and cumbersome video cameras to sleek laptops and high definition hand recorders. Software growth has been just as dramatic, such that *Homo digitalis* has the tools to produce appealing content. What is more, as is shown by Baker and Trump, all of the above factors now coalesce in the smartphone, a pocketable computer with content creation/post-production functions that also serves as portal to digitalized representations of humanity's greatest achievements and darkest horrors. All of this capability is literally at your fingertips.

COVID-19 In the US:
A Developing Case Study of Viral Mis/disinformation as a Source of Social Disruption
Since COVID-19 appeared as new strain with unknown characteristics, public anxiety in every nation has placed tremendous pressure on medical and government authorities to provide preventative guidance and clinical support. In response, institutions such as Johns Hopkins University's Coronavirus Resource Center (abbreviated as CRC below) have compiled and shared updated information with the public, but the pathology of COVID-19 is continually developing. Vaccines are now coming into use, but there are lingering questions over their efficacy To fill this void in knowledge, people in the US have not only turned to government representatives and mass media outlets (e.g. the BBC, CNN, Fox, etc.), but also to SNS networks, YouTube and other easily accessible Internet sources. A case in point is a message authored by Johns Hopkins that was shared by Facebook users in March 2020. The document described the virus's composition, and then outlined several methods for inhibiting its transition. In fact, the university never made such a statement, but the viral transmission and public acceptance had grown so large that it officials felt compelled to publicly deny authorship (Johns Hopkins 2020, April 3). Johns Hopkins claimed the statement was "misattributed" and it "lack[s] credibility," but the university statement on its *HUB* news site did not include corrective details. Looking at the *HUB* story's "comments" section, the initial message and the university's limited web response stimulated a range

of threads by readers seeking more knowledge.[6] Some discussions maintained a tone of reasoned debate, but others devolved into *ad hominem* attacks as participants pushed their views. Eventually one response by "RandomCommenter" suggested that viewers to shift to another article by Dan Devon on *Snopes*, a website dedicated to vetting online information (Devon 2020, March 30). Devon's analysis confirmed that were actually varying attributions and list contents, and he drew upon the CDC data to address mistaken or unconfirmed information. (Ironically, none of the participants indicated that they used this resource.) As of late March 2020, *Snopes* had not identified the viral message's source. There is no indication of malicious intent, but the manufactured provenance, the questionable information, and the subsequent confused and abusive debates on the *HUB* site encapsulate the potentially negative impact on public knowledge and social discourse that has been generated by the "infodemic."

Statistical data on media exchanges around COVID-19 are now being published,[7] while several other prominent infodemic examples have also emerged. One claims that Bill Gates and other elites are using COVID-19 as a cover for creating vaccinations that will include microchips.[8] Nation-states, corporations, and other wielders of power would be able to trace inoculated populations via the 5G network systems that are now under development (Evstatieva 2020).[9] The story's provenance remains unknown, but it may be based on a Belgian doctor who claimed that electromagnetism from G5 towers could facilitate infection by weakening human immunity to disease. According to one study of Twitter exchanges in the UK, the general public subsequently shared various interpretations of that statement, but the study's authors were able to identify at least one account that was specifically established to virally repeat the microchip story. They also noted that Inforwars (a site dedicated to conspiracy theories) posted provocative articles linking COVID-19 and the 5G system (Ahmed, Vidal-Alabal, et al., 2020). Undaunted by external criticism of its contents, on July 22 Inforwars posted a new video entitled, "5G Induces Coronavirus: Shocking Scientific Study-Watch Live!"[10]

In the same time frame (early spring 2020), small tests in France and China suggested hydroxychloroquine (a drug for treating malaria) could be used for treating COVID-19 patients. This had yet to be verified by a major clinical study, but the drug is known to cause heart issues in some patients (Goodman and Giles, 2020). Then in late-March/ early-April, President Trump and his trade advisor began to publicly advocate the administration of hydroxychloroquine. This apparently drew a heated rebuttal from Dr. Anthony Fauci, a leading medical expert and advisor to the Trump administration, who noted that evidence of the drug's efficacy was only anecdotal; therefore any usage required prior research. Nevertheless, the president continued to promote hydroxychloroquine, a message that was picked up and shared by his supporters. Among them was Breibart, a conservative information site that shared a promotional video (Davis and Holroyd, 2020). To date the drug's value against COVID-19 remains unverified, and in June 2020 the United States Food and Drug Administration withdrew its support for hydroxychloroquine for COVID-19 treatment because testing data was inconclusive. YouTube and Facebook removed the video from their servers, and Breibart

displayed newer articles that question hydroxychloroquine's value in this context, but Breibart discussion forums (viewed on August 20, 2020) show that many of its readers continued to advocate the drug's use.

G5 and hydroxychloroquine have receded from the headlines, only to be replaced by continuing public debates over lockdown (home sequestration) and facemask policies. Given the tremendous declines in employment due to the former policy, public angst is understandable, but resistance to face masks is more difficult to fathom. The CDC and other medical authorities now advocate mask use to inhibit person-to-person viral transmission, but the practice has become a political litmus test. While many Republican leaders including Vice President Pence wore masks in public, former President Trump has resisted their use, and they have not been required at some political rallies. The reasons vary, but one claim is that masks are muzzles that challenge personal liberties, especially if their use is mandated by the government. Some resisters also cite confusing government information during the pandemic's early stages, while others question their value regardless of growing medical support. According to Emily Stewart, many resisters do not doubt the virus' existence, but they have been exposed to various online conspiracy theories regarding the pandemic's scale and it lethality, and some even believe that mask wearing increases your own danger, because you rebreathe more of your exhalation (Stewart, 2020). A vocal minority goes even further to claim that COVID-19 is a complete hoax.

One underlining theme that drives these claims and the search for information outside traditional media or government authority is a strong sense of mistrust. United States society has always had racial, ethnic and regional divisions, but local economic declines due to globalization and technology-induced labor reductions, demographic shifts that indicate the relative growth of minority groups, and cultural divisions over religion have placed greater strain on these latent fractures. Added to this are the continuing wars in the Middle east, the sense that rich elites alone were not affected by the 2008 housing and stock market collapses, and a general belief that government at all levels is ineffectual. The aggregate result has created suitable conditions for the rise of conspiracy theories, which are then discussed and shared on social media. A case in point is the "pizzagate theory" that Hillary Clinton and others ran a child prostitution ring in a Washington D.C. pizza store. It appeared on social media sites like Reddit and Twitter, and Infowars published conspiracy videos on the web (Singer and Brooking 2018, 128-129). Responsible site managers continually strive to remove such unfounded content, but this story eventually emerged into the QAnon theory that began on another discussion site, 4Chan (Young and McMahon, 2020). The present QAnon narrative argues that President Trump fighting an entrenched satanic power elite of the "deep state" in order to purify the US. According to its adherents, Trump's enemies created COVID-19 to hinder the president's struggle. Recognizing the danger posed by its more aggressive advocates (the FBI has even labeled QAnon a domestic security threat), on August 19 Facebook banned groups and accounts dedicated to QAnon as well as certain militia groups.[11] However, President Trump implicitly supported the movement during

a press meeting on August 20, and small group QAnon advocates are now running as Republicans in the November election cycle (Rosenberg and Haberman, 2020). Like COVID-19, the viral transmission of QAnon theory will continue in the foreseeable future.[12]

This is not an exhaustive survey of the mis/disinformation now being shared on line, and it is quite possible that continuing medical studies will substantiate some of the anecdotal remedies that are now virally shared by web users. At the same time, while many claims originate from localized online groups and can be seen as natural responses to fear and apprehension as people struggle to combat the virus, these summaries also show how the virtual spread of mis/disinformation furthers public confusion, often to the detriment of the best medical information available. This negative influence is further enhanced when prominent public figures overtly or implicitly endorse a claim and share it with their supporters, and thereby boost that claim's apparent validity. On yet a darker note, the QAnon example and other conspiracy theories reflect the potential damage that can be wrought upon a society's public sphere for knowledge exchange if and when an aggressive nation-state or organization manipulates SNS global-local networks and mass media channels to exacerbate the social tensions and divisions of an opponent, or to wage an Internet-based assault in support a military operations. Shifting the attention from COVID-19 itself to this broader understanding of viral transmission, I will survey information on the role of social media as a weapon.

The Weaponization of Social Media

Propaganda has always been a tool of statecraft, and the development of mass media technologies that enter the private sphere of individuals and families (radio à TV à Internet) have offered leaders increasingly effective means for propagating policies and fostering public support.[13] At the same time, the same technologies create media platforms for transnational organizations (e.g. NGOs, activist organizations, subjugated minorities, diaspora communities) that seek unity in order to publically state their concerns (Hansen 2008, 190-205). Regime opponents can also use media to target and amplify latent domestic dissatisfaction in order foster and motivate anti-government movements (e.g. the 2011 uprisings in various Middle Eastern states [Krona 2019, 101; Singer and Brooking 2019, 84-87], or activists in Hong Kong). The question of whether or not such empowerment will lead to an overall weakening of the modern nation-state system is now a topic of debate (Hansen 2008, 180-183).

One important factor in usage diversification is an expansion of entities that now control media. Whereas US and western European companies (e.g. CNN, BBC) were once the primary providers of global mass media, the sites of production have diversified to include entities like Al Jazeera, Russian Times and the Xinghua news agency, each of which shares multi-lingual contents that reflect their interpretations of events and issues with global audiences. The same shift has begun to apply SNS as well, in that entities like Facebook and Twitter now must compete with TikTok and WeChat. The issue of expanded ownership has another implication specific to SNS platforms: as noted above they may control their network structures, but users create the actual content. It is a sphere

that gives *homo digitalis* many opportunities to gain visibility and influence.

Formal statements by political leaders on mass media broadcasts still exert tremendous influence over international affairs, but the public-yet-opaque, global-yet-local characteristics of social media offer strategic planners and operational tacticians a much wider range of subtle options for aggressively engaging potential competitors. A recent case in point revolves around the question of foreign (largely Russian) interference in the 2016 US presidential election. As the growing intensity between Hillary Clinton and Donald Trump spilled into social media forums, their partisans debated stories such as the aforementioned "pizzagate." There is evidence that SNS network members outside the US took advantage of these conditions to become "sockpuppets" (users operating under anonymous or false identities) who virally shared mis/disinformation in order exacerbate growing divisions within the US electorate. According to the analytical summary by Singer and Brooking (2018), Russia's Federal Security Service (FSB) strove to exert influence by drawing upon its KGB legacy of aggressively using disinformation to "dismiss critics, distort the facts, distract from the main issue, and dismay the audience" (107). The *Russia Times* was used in this fashion (107-108), but the FSB went further to create front organizations like the Internet Research Agency (IRA) that hired young Russians to intervene in social media discussions (112-117). By assuming identities such as a left-leaning African-American or a right-wing anti-Clinton/pro-Trump advocate, they played both poles of the political spectrum in an effort to sway other network users, or to reinforce anger and dissatisfaction. Computer "bots" (programs developed to act as a human user) were employed as well to create tens of thousands of accounts that would share links or employ the "like" option to "astroturf"[14] certain candidates or topics (137-14).[15]

The actual impact of these operations on the 2016 election is still up for debate. A study of user comments on Twitter, Facebook, and Breibart by Jonathan Morgan and Kris Schaffer suggests that the formulaic bot-generated contents eventually affected the verbal expressions used by living American participants (cited in Singer and Brooking 2018, 145-146). Conversely, a recent study of messages from 1239 Republican and Democrat Twitter users concludes the majority (80%) of them were not attracted to statements from Russian trolls (Bail, Guay, et al. 2020). The authors also argue that bot influence was limited because the surveyed Americans were already highly polarized; hence the Russian activities did not stimulate further responses. One could say that these Americans were already "exposed" to this kind of viral disinformation by the homophily that unites online groups. Whether that is beneficial or not is another matter, and I would argue that sockpuppet/bot comments-as-astroturfing could have reinforced of their beliefs and biases.

Bail, Guay did add the caveat that their results did not necessarily apply to Facebook and other SNS-based communities, and they did not dismiss continuing concern over social media based foreign influence over the electorate. Since the Mueller Committee's indictment of 13 Russians in 2018, the US government has continued to investigate this issue (U.S House of Representatives Permanent Select Committee on Intelligence n.d.), and following the creation of the U.S Cyber Command in 2009,

its personnel have begun to engage in the shadowy world of cyber space operations, one of which being in the take down of the IRA on the day of the 2018 elections (Nakamura 2019). On the corporate/industry side, popular social media sites have removed fake accounts in an effort to reduce the influence of such operations, with Facebook and Twitter opting to remove COVID-19 misinformation propounded by President Trump (BBC US Election 2020, 2020), but they struggle to maintain a balance between effective control of subversive usage and over-censorship that would negatively affect legitimate activities or drive away users.[16] (As the Biden administration takes over it remains to be seen how these confrontations will play out, but it would appear that the viral dissemination of miss/disinformation originating from or between ideologically polarized domestic users and foreign sockpuppets/bots will continue, as will the struggle to control the flow of such data.)

The use of networks and viral data sharing by ISIS offers an even more troubling example of weaponized social media. Emerging from the socio-political chaos following the US invasion of Iraq (2003) and the anti-Asad uprising in Syria that empowered extremist groups. By 2014, its forces had amassed enough military power to establish a new "caliphate" on conquered lands in northern Iraq/ eastern Syria. Along with its ability to quickly build a proto-state that filled the void created by the weak Syrian and Iraqi governments, ISIS gained notoriety for complementing its military operations with the sophisticated media campaigns. This expertise in part came from its earlier associations with Al Qaeda, but the influx of web-savvy supporters from other regions added to its technical capabilities.

Whereas the spread of TVs and satellite communications allowed news organizations to bring real-time news reports of the 1991 Gulf War into homes, the combination of personal computers, small but high quality recording devices, and user-controlled information networks has greatly expanded the weaponization of the media. "War is now a consumer commodity" (Patrikarakos 2019, 198), and postings of combat-related contents garner the "likes" and "shares" that now define success on the web. For example, a search for "Syria tanks" on YouTube will bring up scores of videos taken in the midst of combat. Many depict the destruction of armored vehicles with wire-guided missiles, while in others tankers have placed Go Pros[17] or similar devices on their vehicle turrets to record urban fighting. The latter footage resembles the personal perspective found in popular role-playing games (RPG), but in this case the taped explosions are recordings of real deaths.

Responding to this new field of operations, ISIS employed a multi-faceted media campaign and crafted messages in order "to appeal to a global audience" (Krona and Pennington 2019, 2). This included online publications in a number of different languages, the content of which depended on the intended audience. The Arabic news letter *al-Naba'* strove to attract regional support by stressing ISIS' activities as an emerging state, while the foreign-language *Dabiq* combined violent images depicting ISIS' ability to defeat external threats with content suggesting stability within areas under its control. For example, it contents included articles on ISIS social welfare activities and peaceful landscapes photos that hid the realities of daily life under ISIS rule (El Damanhoury 2019).

This stylized format was complemented by extensive social media activities undertaken by its

Amaq News Agency other groups operating under the ISIS umbrella. The objective was to provide "access, information, inspiration" (Krona 2019, 105), and these operatives posted thousands of messages, images and videos on Twitter, Facebook, YouTube, Instagram, Telegram, WhatsApp, and other applications. Tech specialists did this work, but according to a 2016 statement on its "doctrine for information warfare," any ISIS member who produced content was counted as a "media mujahidin" (Krona 2019, 105).[18] To further propagate their messages, ISIS technicians created specialized Android apps for smartphones: One fed a news stream to followers, while another taught Arabic using terms related to ISIS activities (Krona 2019, 112). Since hashtags are vital to viral sharing, ISIS sent messages out under #AllEyesOnISIS, but they also use techniques such as "hashtag-jacking" (appropriating tags from other topics) and "cultural jamming" (appropriating and reinterpreting images from other contexts to subvert the messaging efforts and activities of opponents) (Krona 2019, 112-113). Through these methods, ISIS created a "participatory ecology" in hundreds of media channels that united followers. ISIS's leadership determined the main messages, which were shared and amplified through its social media networks. Among these contents, ISIS gained global attention for its beheading clips that created grotesque yet mesmerizing "theaters of terror.". The videos appear to be raw footage taken at that moment, but in fact they were well-choreographed productions (German 2019, 130; Singer and Brooking 2018, 151-152).[19] Added to the mix were other video clips that included more humanizing images of ISIS fighters talking about their families, reasons for joining, personal aspirations, and so on (Pascarella 2019, 192-199). Along with carving out ISIS' place on the web, this combination of images and approaches continually attracted mass media company attention, such that their own news feeds kept ISIS in the public view (German 2019, 135). ISIS's strategy was thus a method for subversively integrating media outlets controlled by opponents into its own viral marketing activities.

One objective of this media campaign was the recruitment of new fighters from outside Syria/Iraq. Approximately 30,000 joined its ranks, many from nearby regions, but around 3000 came from Europe and North America (Benmelech and Klor, 2018). These adherents are popularly seen in the West as youths radicalized by fundamentalist Islamic teachings or economic inequities, but research by Benmelech and Klor (2018) indicates cultural alienation was a major factor. In the case of those with immigrant backgrounds, this sense stemmed from their struggles with assimilating into Western society even though they came from generally stable homes of middle-class standing. Benmelech and Klor do not define any specific reason for the choice to join ISIS, but such individuals could be susceptible to disinformation activities that offered appealing images of the Caliphate. Pascarella's 2019 analysis of twenty fighters from Western societies reflects this possibility. According to their videotaped statements, a search to attain self-actualization and a sense of community were important motivations (192-201), as was a general desire to join a movement "making history"(187). Such sentiments are echoed in the story of Sophie Kasiki (a pseudonym), a French citizen of Senegalese background (Patrikarakos 2017, 209-229). Raised a Catholic, she moved to France following the death

of her mother. She became a social worker, but due to dissatisfaction with her life, she gravitated towards Islamic teachings. She was not personally radicalized, but three young Muslim men who had lived in her French neighborhood did influence her via the web after they moved to Syria. Through text exchanges via and Skype meetings, they convinced her that her services were needed to help women in ISIS territory. Leaving her husband and family behind, Sophie travelled with her daughter to Raqqa, the caliphate capital, where she discovered that life in the ISIS state was actually grim. In short, she was lured by ISIS disinformation spread by her former neighbors, but she was able to eventually escape with a large bribe and help from the Free Syrian Army.

Even if an inspired individual did not trek to Syria, there are cases of ISIS handlers using encrypted (thus untraceable) messaging applications like Telegram and ChatSecure to remotely recruit and prepare operatives for possible attacks in India, the United States, the United Kingdom and Canada (Callimachi 2017). (Again we must remember that the nexus of all these systems now exists in the form of the common smartphone.) What is more, regardless of the caliphate's collapse as a proto-state defined by territorial borders, its ideology can continue in the virtual world of websites and online forums (Krona and Pennington 2019, 5-6). Like a virus waiting for a new host, this content sits on servers for potential readers.

Just as the super powers fought the Cold War through proxies in small, regional hot wars, media conflict can now involve groups of online supporters (digital militia) who work as proxies for nation states or organizations. As noted in the discussion of bots and sockpuppets above, the mediatization of war has made it is possible to turn people into such proxies without them even realizing that they have been weaponized through mis/disinformation. Research on these issues will surely continue, and as per the discussion of the IRA and Twitter, we will gain better understanding of the strengths and weaknesses of social media based conflict, but a juxtaposition of COVID-19 conspiracy theories and discussion of ISIS's activities also reveals the need for scholarly discretion. Images of virally radicalized Muslims inform the blanket stereotyping of all Muslims that appears in groups with extremist views. Therefore, scholars must take carefully frame their discussions of ISIS-specific usage of viral mis/disinformation such that conspiracy theorists do not twist those studies into misinterpretations intended for the support of other viral disinformation in social media. Scholars, too, thus need to learn how to manage media, a topic that I will briefly consider next.

Possible Responses from Peace Studies

When compared to problems posed by nuclear weapons, over-population, pollution and other global issues, the threat of mis/disinformation might appear to be less pressing. However, effective domestic and international public responses to these challenges rely upon access to trustworthy data and ideas that can then be analyzed and assessed for possible implementation. Furthermore, the public must have faith in the validity of this information and the policies that are developed from it. Therefore, while research on treatments for a biological virus is beyond the purview of peace studies, the

potential for social disruption and aggression created by weaponized information and the systems for virally transmitting it necessitates responses from scholars in this field.

States that are highly sensitive to the possibility of political and social strife generated by mis/disinformation may employ sophisticated censorship regimes. A case in point is China, which combines the limitation or denial of certain apps and search phrases with extensive monitoring operations that engage in "cat and mouse" activities to chase down state-defined subversive web activities (Hanson 2008, 184-189; Singer and Brooking 2019, 95-103).[20] Similar to the "lockdown" method for limiting the spread of COVID-19, such restrictions can stifle the spread of information, including contents that can undermine official narratives. That being said, censorship itself creates an environment of mistrust in which mis/disinformation breeds, and tech-savvy users will eventually discover options such as VPNs for circumventing state efforts to block access to information networks, including SNS.

Such censorship naturally raises the issue of human rights. While stifling the spread of spurious data, heavy-handed suppression also stifles the dissemination of viable and helpful knowledge (an effect similar to the negative economic impact of physical lockdowns as a response to a biological virus). As per Farah Baker's story above, civil groups rely upon the very same social media applications favored ISIS to organize peaceful resistance and responses to repression, and Bock 2012 details many examples of digital technology being used to prevent conflicts.[21] Given our continuing reliance upon the Internet, a complete shutdown is neither possible nor desirable. The challenge is to develop responses that balance the right to speech and the beneficial applications of information technology with means for limiting the impact of mis/disinformation shared via the web.

Patrikarakos notes that one goal of media based disinformation campaigns is to "reduce trust in *all* sources of truth, allowing for so-called fake news to infect real news" (2017, 15). The nature and definition of "truth" is too extensive a topic for this paper, but we can paraphrase Patrikarakos' comment to point out that mistrust in even verifiable information allows unsubstantiated or even implausible information to become acceptable as a credible. Thus, the creation of reliable and easily accessible sources for confirming or disproving claims would constitute a viable response to this challenge, and the field of peace journalism is suitable venue for such an activity. Sites such as snopes. com, factcheck.org, politifact.com, mediabiasfactcheck.com and the umbrella organization International Fact-Checking Network at the Poynter Institute (a non-profit journalism school) provide data bases and analyses of publically available information, but these are all still US centric. Building upon this model, peace studies scholars could draw upon the ideals of peace journalism to create sources that serve a wider global audience.

Built upon an idea proposed by John Galtung in the early 1970s, peace journalism has developed in response to the fact that mass media corporations do not just "report facts," but rather they represent conflicts in terms of winners and losers (Lynch and McGoldrick 2005, Chap. 1, Chap. 7). As a result, the selection of stories, the analytic perspectives, and the terminology for reportage can

reinforce one side or the other engaged in conflict. As case in point, in the run up to the 2003 Iraq invasion, the *New York Times* and the *Washington Post* framed their stories in ways that supported the Bush administration's decision to attack (Hanson 2008, 125-131; Lynch and McGoldrick 2005, Chap. 1). Furthermore, given the influence of such companies, groups involved in conflict will craft information in ways to entice media outlet coverage (McGoldrick and Lynch 2000, 21). ISIS's use of violent images to attract mass media company attention is an obvious example.

In contrast, peace journalism should be more like health journalism, in which the reporter looks beyond immediate struggles with a disease to also examine its origins and possible methods of treatment (McGoldrick and Lynch 2000, 26). In a peace journalistic approach, reporters try to reflect the views of all sides in a conflict. They assess claims made by all sides to expose incorrect data or disinformation, and they highlight possible solutions that would be viable for both parties (McGoldrick and Lynch 2000, 29.) By clarifying the views and demands of both sides while mitigating biases and misperceptions, a peace journalist opens flows of information in order to create conduits for mediation, hopefully before conflicts lead to actual violence. Applying this to social media mis/disinformation, a peace journalism-based site would not only vet specific claims, but also cover (to the extent possible) the background and motivations of those who make or share them. It would operate in the larger public sphere (i.e. be outside government or corporate supervision) in order to maintain neutrality, and it would be quite open about its goals and methods. If properly done to garner broad user trust, individuals could rely upon it when they encounter virally shared but difficult-to-verify information.[22] This in turn would limit the attraction and impact of mis/disinformation *before* it influences audiences into taking action.

That being said, the assumption of a neutral stance to function as a broker of information between contesting parties will require discrete implementation, and an acknowledgement of cases in which such a stance is not viable or applicable. For example, this approach can help heal fissures of growing mistrust that can emerge when economic, cultural or political tensions alienate different communities living in close proximity. However, if one party already espouses extremist and potentially violent views (e.g. neo-Nazis or xenophobic nationalists), then the effort to extend a promise of neutral information brokerage may legitimate this party's position in the eyes of some segments of the populace in question, and thereby inadvertently give the extremists a public platform from which they can then aggressively assert their agenda. In such cases, the need for advocacy *against* extremism would outweigh the desire to provide equal treatment to the views of contending sides. This recognition of such complications must be included in methods used for implementing this approach to information handling.[23]

More broadly speaking, just as a medically tested and verified vaccine would create "herd immunity" to COVID-19, better information literacy training for a general populace would reduce individuals' susceptibility to alluring but questionable items that appear on social media chat rooms and data feeds. Given the web-savvy of youth, this may seem unnecessary at least for younger

generations, but such literacy is must be learnt by any one, regardless of age group (Singer and Brooking 2018, 264-265). This education is not a panacea and is still being refined as an educational field (Callahan 2019), but it would give users the tools to detect "dangerous speech" that utilizes coded phrases, dehumanizing phrases, suggests reasons for attacking minorities, etc. (Singer and Brooking 2018, 267), and thereby help them to neutralize the deleterious impact of mis/disinformation. The fostering of such critical thinking skills is fundamental to modern education programs, hence peace studies scholars and educations should explore ways to include social media-based challenges and media-literacy themes in their school course work and public education activities.[24]

Singer and Brooking have argued that information literacy is now a "national security imperative" (2019, 264). This paper agrees with the importance of learning better media-use habits, but we should go beyond national perspectives to see this a rapidly evolving global issue. The web is ultimately democratic (anyone can join), but this dilutes accountability, and it can create cacophony or unity depending on its use. Therefore, there is an imperative for peace studies scholars and programs to adapt to this changing conditions in media networking systems and practices in order to prepare their students to act as *Homo digitalis* who can face the challenges of "infodemics" and viral mis/disinformation while still supporting the powerful opportunities to create glocal connections that are of benefit to us all.

(January 2021 Postscript: The main contents of this note were composed during the summer of 2020, and aside from a few glaring anachronisms, the text has not been greatly altered. Some of the details have thus been superceded by more recent events. Neverhtheless, the main concerns expressed herein regarding the impact of mis/dis-information have been further substantiated by role of online media in the fomentation of the riot at the US Capitol building in Washington D.C. on January 6th 2021, and the doubts regarding the origins of the COVID-19 virus and its treatment that continue as the global death toll continues to rise.)

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（1）University of Alberta researcher Dr. Timothy Caulfield (2020a) comments on this in a recent interview with the Canadian Broadcast Company. He also surveys this aspect of COVID-19 in Caulfield (2020b).

（2）This is to say that I agree with Joseph Bock's observation that "information and communication technologies (ITCs)" themselves are the not cause of political change, but they offer forms of interaction and data sharing that have altered the ways groups engage in such processes (2012, 1-2). Bock emphasizes the value of ICTs to those who resist repression and injustice, and I will touch upon this later, but my focus here is on how the very same ICT can be used to exacerbate social fissures or conflicts against other groups. This problematic aspect of ICTs has largely appeared after Bock's 2012 study.

（3）According Hoskins and O'Loughlin (2010, 4), "As a result of changes in the communications technologies available to news media, citizen media and to militaries themselves, media are becoming part of the practices of warfare to the point that the conduct of war cannot be understood unless one carefully accounts for the role of media in it. This is what it means to speak of war as 'mediatized.'" I am drawing upon the "weaponization of media" phrase as discussed in Singer and Brooking 2016. They develop the concept more in Singer and Brooking 2018.

（4）One counter example is China, which employs an extensive web monitoring system.

（5）Singer and Brooks (2018) examine President Trump's messaging activities. In particular see 1-4, 61, 168-169,

（6）There is not enough space to provide all the comments here, but the link is in the bibliography.

（7）In April researchers at Oxford University's Reuters Institute worked with data from the International Fact-Checking Network (IFCN) database and Google's Fact Check Explorer to identify 225 pieces of misinformation related to COVID-19 (Brennen, et al, 2020). This study was not US-centric, but it does contextualize the nature of misinformation and the role of social media.

Within the sample, 38% consisted of fabricated misinformation, while research found 58% to be "misleading" or falsely contextualized. Furthermore 88% of these claims appeared on social media, but only 9% appeared on TV, which reflects the lack of editorial control over SNS threads.

（ 8 ） Prior to 2020, there was a strong anti-vaccination movement fed by online communities and these ideas continue to influence responses to the COVID-19 vaccine.

（ 9 ） Evstatieva's article includes several anecdotes about the paranoia generated by this misinformation.

（10） https://www.infowars.com/watch-live-5g-and-the-induction-of-coronavirus-in-skin-cells/#inline-comments

（11） https://about.fb.com/news/2020/08/addressing-movements-and-organizations-tied-to-violence/

（12） Another prominent case centers on a movie entitled *Plandemic* in which a former virus researcher at the Whittermore Peterson Institute named Judy Mikovits claims Dr. Fauci is part of an elite cabal involved in medical fraud. The production company Elevate sells videos on other conspiracy theories, and it launched this movie on Facebook, YouTube, Vimeo and a dedicated site. A hit among conspiracy theorists (including QAnon advocates) who also shared links via Instagram and Twitter, it garnered over 8,000,000 hits before being removed from public severs. Supporters continue to share it in 2020, while its very existence has generated a cottage industry of video-taped rebuttals that are available on YouTube (Enserink and Cohen 2020; Wilson 2020; Frenkel, Decker, and Alba 2020).

（13） Hanson 2008 surveys this growth and the power wielded by states and businesses to frame citizen/consumer views of state policies and important issues. Chapter 4 specifically analyses violence and warfare. Singer and Brooking (2018) discuss media-based conflicts that parallel the Russian-Ukrainian military engagements in 2014 (203-209), and on a micro-level, they consider the role of media in L.A. gang warfare (11-13). Roach 1993 (17-18) discusses the role of mass media companies within the US's military-industrial complex.

（14） This term ironically plays off of "grass-roots," which generally refers to an upwelling of support from common citizens. Just as astroturf is fake grass, "astroturfing" refers to a media campaign for creating the impression of grass-root support that does not actually exist. It is important to note that US politicians, too, use astroturfing to increase their public presence.

（15） Howard, Ganesh, and Liotsiou (2018) statistically analyze interactions on Facebook, Twitter and Instragram in 2015-2017.

（16） In addition to previously sited sources, I referenced the following articles related to this particular point, but they are a small sample of the commentary related to this topic: Ortutay 2020; Pierce 2020; Plackett 2019.

（17） Small, light video cameras that nonetheless produce high quality images. Videos posted by militant groups often record "Allah akbar" being uttered by missileers whenever a targetted vehicle is hit. According to an Al Jazeera editor's comments, creators increasingly included this invoca-

tion in order to garner aid from Saudi and Gulf-state supporters (Kaylan 2013).

(18) Krona notes that ISIS drew upon techniques and practices developed by earlier organizations like Al- Qaeda (2019, 104). Aum Shinrikyō's development of video *anime* in the 1980s, and the 1996 creation of the Stomfront website by American neo-Nazis and white supremacists are not related to fundamentalist Islamic movements, but they indicate the extent of such media activities prior to ISIS.

(19) Gleaning a few key points from Mark Juergensmeyer's detailed study (2017, 149-181), a "theater of terror" is a "performative act" of "excessive violence." It is meant to intimidate and to send a symbolic message that reflects the goals, politics and worldview of the performer.

(20) Singer and Brooking lists other states seeking similar levels of control (2019, 102), and Askerov 2016 discusses Russian media suppression during the Chechnya conflict.

(21) As Patrikarakos forcefully argues, "Social media is many things, but above all…it impowers the individual. Specifically, at its most powerful, it is a tool of the powerless, the voiceless, the marginalized" (2017, 220).

(22) Although trained as a medical researcher Timothy Caulwfield's recent study (2020b) shows the value of positively working to debunk mis/disinformation that has entered public discourse.

(23) This last statement is an initial response to questions regarding the contextual nature of neutral stances in peace studies activities that was posed by Prof. Noguchi Kumiko. It is an important qualification that requires further consideration in regards to the methods for the treatment of sources of mis/disinformation.

(24) Lynch and McGoldrick 2005 offers case studies and analyses on the process of data collection and interpretation. Texts like this can be used a a primer for teaching a peace studies approach to media literacy.